

In the Matter Of:

Tesla, Inc. v

Perceptive Automata, LLC

Jason Janet, Ph.D.

June 04, 2026



UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

Case No. IPR2025-01573
Patent No. 10,614,344

TESLA, INC.,

Petitioner,

-VS-

PERCEPTIVE AUTOMATA LLC,

Patent Owner.

DEPOSITION OF
JASON JANET, PH.D.

Thursday, June 4, 2026
10:05 a.m. - 5:14 p.m.

Remote Location
Via Zoom Videoconference
All Parties Remote

Stenographically reported by:
Erica Field, RDR, CRR, CA-CSR, TX-CSR,
GA-CSR, WA-CSR, NM-CCR, IL-CSR, NJ-CCR,
FL-FPR, OR-CSR, NY Notary, FL Notary,
AK Notary, DC Notary
Job No. 1025544

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IPR2025-01574

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1 Thereupon, 2 the proceedings began at 10:05 a.m.: 3 Whereupon, 4 JASON JANET, 5 having been first duly sworn or affirmed, was 6 examined and testified as follows: 7 DIRECT EXAMINATION 8 BY MR. GINNINGS: 9 Q. Good morning, again, Dr. Janet. 10 A. Good morning. 11 Q. How are you doing today? 12 A. Well. How about you? 13 Q. Doing just fine. Am I correct 14 that you have been deposed a few times 15 before? 16 A. Yes, that's correct. 17 Q. Have you done them over the Zoom 18 platform like we're doing here today? 19 A. I would say the vast majority of 20 depositions since COVID began have been over 21 telecon. 22 Q. It's been the same for me. So 23 glad to hear I'm not the outlier. Is it safe 24 to say you're familiar with the process 25 today? I don't need to kind of go through	1 A. Because I'm assuming that some of 2 these documents may get sent that way. If 3 you want, I can close that. 4 Q. That would be preferable. I'm 5 going to -- as long as there aren't any 6 unforeseen technical issues, what I'm going 7 to do with the exhibits is put them in the 8 Zoom chat here, and you should be able to 9 download them there and open them from there. 10 A. Okay. I'm going to close my 11 e-mail and my calendar. 12 Q. All right. And just so I'm kind 13 of familiar with kind of what your setup is 14 and what you're looking at, are you on a 15 laptop? Do you have a monitor? What are you 16 using today? 17 A. Yeah, I have a laptop and I have 18 two monitors. 19 Q. Okay. 20 A. The laptop is showing the video. 21 You know, and when I download a document, I 22 will move it up to a monitor. 23 Q. Okay. Yeah, I just wanted to make 24 sure. There may be a time -- a few times 25 where I want to -- I don't want you to have
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1 how the deposition is going to work and kind 2 of the basics? 3 A. I think, generally, you know, it 4 never hurts to -- you know, for some clarity. 5 Q. Yeah, sure. 6 So just a couple of things. One 7 is, where are you located today? 8 A. I'm in Raleigh, North Carolina. 9 Q. Okay. Are you on campus right 10 now, in your office on campus or -- 11 A. No. I'm in my office in 12 North Raleigh. 13 Q. Okay. Is there anyone in the room 14 with you today? 15 A. No. 16 Q. Do you have any hard copy 17 documents or papers or notes or anything in 18 front of you? 19 A. No. 20 Q. Okay. Do you have -- other than 21 the Zoom application that we are using for 22 this, do you have any other applications up 23 on your computer right now? 24 A. My e-mail. 25 Q. Okay.	1 to switch back and forth between things. So 2 if I'm showing you something in the Zoom app 3 and there's another document open, I just 4 want to make sure you're not having to flip 5 back and forth. 6 A. I appreciate that. 7 Q. And also, while we're on the 8 subject, I have a similar setup. I have my 9 laptop here in front of me, and I have two 10 monitors up here. 11 So it may look like I'm not 12 looking at you. It's because I've got the 13 documents and things up on my monitor here, 14 but the camera is on my laptop. So I 15 apologize if it looks like I'm -- it 16 obviously looks like I'm not looking at you, 17 but I am literally looking at you in the 18 video frame here. It doesn't look like it 19 through the eye of the camera. 20 A. Omnipresence. 21 Q. Okay. 22 A. I do have a small little note tab. 23 It's clean. It's just so if while you're 24 asking questions, I might jot something down. 25 I realize that you will want to see them

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1 after or during, but is that okay? 2 Q. Yeah, that's fine. I'm not 3 trying -- at no point am I trying to 4 overwhelm anyone's capabilities or faculties 5 or whatnot. 6 Do you have any questions for me 7 about the process today before we get 8 started? 9 A. No, I don't think so. I believe 10 that we can go forward if you would like. 11 I may have some questions in stride but not 12 right now. 13 Q. Yeah. By all means, if anything 14 comes up, feel free to ask me. 15 Now, you understand that this 16 deposition is part of five IPR proceedings 17 that have been brought by Tesla against my 18 client, Perceptive Automata, right? 19 A. Yes, sir. 20 Q. And you have been retained by 21 Tesla to offer opinions in connection with 22 those IPR proceedings? 23 A. Correct. 24 Q. Okay. And this isn't the first 25 time you have been retained by Tesla; is that	1 Q. Okay. And what is Exhibit 1? 2 A. Exhibit 1 is entitled Petition for 3 Inter Partes Review of Claims 1 Through 22 of 4 U.S. Patent 10,614,344. 5 Q. Okay. And you understand this is 6 to be one of the five petitions for IPR that 7 are -- this deposition concerns? 8 A. That's my understanding. 9 Q. And you have offered opinions as 10 part of this -- in support of this petition 11 for IPR; is that correct? 12 A. Yes, sir. 13 Q. And you read the patent number 14 that's on the cover. I assume you're 15 familiar with kind of the usual practice that 16 we refer to those by the last three numbers 17 of the patent number, so the '344 Patent 18 here? 19 A. Yes, sir. 20 Q. Is it okay if I refer to that 21 patent as the '344 Patent today? 22 A. Yes. 23 Q. Okay. The next question I'm going 24 to ask, I'm going to ask about other 25 documents too, but before I ask it, I just
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1 right? 2 A. That's correct. 3 Q. You have done work for Tesla on 4 other IPR proceedings in the past? 5 A. Yes, I have. 6 Q. Okay. What I want to do is I want 7 to go ahead and get some of the exhibits out 8 of the way here because there are five of 9 these IPRs. It's going to be a little bit of 10 a slog, but we'll get through them one by one 11 here. 12 I'm going to start with -- I will 13 mark as Exhibit 1 -- I'm sending it through 14 the Zoom chat there. If you could download 15 that and open it, and let me know when you 16 have it open. 17 (Exhibit 1 was marked for 18 identification.) 19 A. I'm just trying to figure out 20 where it went. 21 BY MR. GINNINGS: 22 Q. Do you have Exhibit 1 open now? 23 A. Yes, sir. 24 Q. Have you seen Exhibit 1 before? 25 A. Yes.	1 want to be clear that with this question, as 2 with all questions today, I'm not looking for 3 you to tell me anything that you may have 4 discussed with Tesla's counsel in preparation 5 for your deposition or other points in time. 6 With that understanding, though, 7 what I want to know is did you review this 8 document in preparation for your deposition 9 today? 10 MR. BARAZESH: I'm just going to 11 object on the basis of privilege, 12 understanding the disclaimer, but just 13 putting that on the record. 14 Dr. Janet, you can answer the 15 question to the extent you don't 16 disclose any -- the content of any 17 privileged communications with 18 counsel. 19 THE WITNESS: Thank you. 20 A. Short answer is yes. 21 BY MR. GINNINGS: 22 Q. Okay. I'm going to send Exhibit 2 23 here in the Zoom chat. If you can download 24 that and open it and let me know when you 25 have it open.

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1 (Exhibit 2 was marked for 2 identification.) 3 A. Okay. 4 BY MR. GINNINGS: 5 Q. Have you seen Exhibit 2? 6 A. Yes. 7 Q. And what is Exhibit 2? 8 A. Exhibit 2 is entitled Petition for 9 Inter Partes Review of Claims 1 through 20 of 10 U.S. Patent Number 11,126,889. 11 Q. Okay. And do you understand 12 Exhibit 2 is another one of the petitions for 13 IPR that this deposition is related to today? 14 A. Yes, sir. 15 Q. And you have offered opinions in 16 that IPR proceeding in support of this 17 petition, right? 18 A. Yes, sir. 19 Q. And same question with the same 20 cautions. Did you review Exhibit 2 in 21 preparation for your deposition today? 22 MR. BARAZESH: I'm just going to 23 make the same objection as before on 24 the basis of privilege. 25 Answer the question to the	1 Inter Partes Review of Claims 1 through 19 of 2 U.S. Patent Number 11,753,046. 3 Q. And do you understand Exhibit 3 to 4 be another one of the petitions for IPR that 5 this deposition links to today? 6 A. Yes, sir. 7 Q. And you have offered opinions on 8 behalf of Tesla in support of this IPR 9 petition as well; is that right? 10 A. Yes, sir. 11 Q. And same cautions as before, but 12 with that have you -- sorry, did you review 13 Exhibit 3 in preparation for your deposition 14 today? 15 A. Yes, sir. 16 MR. BARAZESH: Same objection. 17 A. Yes, sir, I did review. 18 BY MR. GINNINGS: 19 Q. You probably sense where this is 20 going, but I'm putting Exhibit 4 in the Zoom 21 chat here. You can download that and open it 22 and let me know when you have it open. 23 (Exhibit 4 was marked for 24 identification.) 25 A. I have it open.
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1 extent you don't close the content of 2 any communication with counsel. 3 And I guess just to the extent 4 there's going to be this question for 5 all the other petitions, I'm lodging 6 the same objection now. 7 MR. GINNINGS: And no issue 8 there. And as I said before, I'm not 9 looking to get into any of that. 10 So... 11 MR. BARAZESH: Yep. 12 A. Yes, I did review it. 13 BY MR. GINNINGS: 14 Q. I put Exhibit 3 in the same chat 15 if you can, again, download that and open it 16 and let me know when you have it open. 17 (Exhibit 3 was marked for 18 identification.) 19 11,753,046 20 A. I have it open. 21 BY MR. GINNINGS: 22 Q. Have you seen Exhibit 3 before? 23 A. Yes, sir. 24 Q. And what is Exhibit 3? 25 A. Exhibit 3 is entitled Petition for	1 BY MR. GINNINGS: 2 Q. Have you seen Exhibit 4 before? 3 A. Yes. 4 Q. And what is Exhibit 4? 5 A. Exhibit 4 is entitled Petition for 6 Inter Partes Review of Claims 1 through 20 of 7 U.S. Patent Number 11,467,579. 8 Q. Do you understand Exhibit 4 to be 9 another one of the petitions for IPR that 10 this deposition today relates to? 11 A. Yes, sir. 12 Q. And did you review Exhibit 4 in 13 preparation for your deposition today? 14 A. Yes, sir. 15 Q. I put Exhibit 5 in the Zoom chat, 16 if you could download that and open it and 17 let me know when you have it open. 18 (Exhibit 5 was marked for 19 identification.) 20 A. I have it open. 21 BY MR. GINNINGS: 22 Q. Have you seen Exhibit 5 before? 23 A. Yes. 24 Q. What is Exhibit 5? 25 A. Exhibit 5 is entitled Petition for

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1 Inter Partes Review of Claims 1 through 23 of 2 U.S. Patent Number 11,520,346. 3 Q. And do you understand Exhibit 5 to 4 be another one of the petitions for IPR that 5 this deposition today relates to? 6 A. Yes, sir. 7 Q. And did you review Exhibit 5 in 8 preparation for your deposition today? 9 A. Yes, sir. 10 Q. Now, am I correct that, as part of 11 each of the five IPR petitions that we just 12 looked at, you provided a written declaration 13 that contains your opinions in support of 14 those petitions? 15 A. Yes, sir. 16 Q. Putting Exhibit 6 in the Zoom 17 chat. If you can download that and open it. 18 Let me know when you have it open. 19 Declaration of Dr. Jason Janet Regarding U.S. 20 Patent No. 10,614,344 21 (Exhibit 6 was marked for 22 identification.) 23 A. I have it open. 24 BY MR. GINNINGS: 25 Q. Have you seen Exhibit 6 before?	1 exhibits today, is the PDF page number or the 2 document page number better for you? 3 A. Well, the PDF number I would say 4 is easier because I could just simply enter 5 that number -- 6 Q. Okay. 7 A. -- into Adobe and it will go 8 straight to that. You know, if you give me 9 the document page number, I usually can 10 estimate what the PDF page number should be 11 and then I will have to do a little bit of 12 terminal, you know, searching. But it would 13 definitely be easier if you told me the PDF 14 page. 15 Q. Okay. And I think we are on the 16 same page there. But PDF pages, there's 17 102 PDF pages in Exhibit 6, right? 18 A. Yes, sir, that's what I'm seeing. 19 Q. All right. Exhibit 6 contains 20 your opinions in support of the IPR petition 21 that is Exhibit 1, right? 22 A. Yes, sir. 23 Q. And did you review Exhibit 6 in 24 preparation for your deposition today? 25 A. Yes, sir.
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1 A. Yes. 2 Q. And what is Exhibit 6? 3 A. Exhibit 6 is entitled Declaration 4 of Dr. Jason Janet Regarding U.S. Patent 5 Number 10,614,344. 6 Q. And that patent number, just so we 7 are clear, is the same patent number as the 8 IPR petition which is Exhibit 1, right? 9 A. Yes, sir. 10 Q. Okay. And if you turn to the very 11 last page of Exhibit 6 for me, which is 12 page -- the very last page. 13 A. Sorry. Adobe is going a little 14 slow. 15 Q. It's a long document. 16 A. So I'm sorry, you said go to the 17 last page? 18 Q. Yes. 19 A. Okay. 20 Q. And is that your signature on the 21 last page, Dr. Janet? 22 A. Yes, it is. 23 Q. Now, just because different people 24 think about this differently, when I -- if I 25 want to direct you to a page in one of these	1 Q. And since you prepared and signed 2 Exhibit 6, have you -- strike that. 3 Do you have any additions or 4 corrections to make to this declaration 5 today? 6 A. Not off the top of my head no, 7 sir. 8 Q. Next up is Exhibit 7 which I'm 9 putting in the Zoom chat here, if you can 10 download that and open it up, and let me know 11 when you have it open? 12 (Exhibit 7 was marked for 13 identification.) 14 A. Okay. I have it open. 15 BY MR. GINNINGS: 16 Q. Have you seen Exhibit 7 before? 17 A. Yes. 18 Q. And what is Exhibit 7? 19 A. Exhibit 7 is the Declaration of 20 Dr. Jason Janet, myself, regarding 21 U.S. Patent Number 11,126,889. 22 Q. And Exhibit 7 contains your 23 opinions in support of the IPR petition that 24 is Exhibit 2, right? 25 A. Yes.

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1 Q. And if you go to the last page of 2 Exhibit 7 for me, PDF Page 95. Let me know 3 when you're there. 4 A. Okay. 5 Q. Is that your signature on the last 6 page there? 7 A. Yes, sir. 8 Q. And do you have any additions or 9 corrections to make to Exhibit 7 today? 10 A. Not that I can recall. 11 Q. I will put Exhibit 8 in the Zoom 12 chat. If you could let me know when you have 13 that open. 14 (Exhibit 8 was marked for 15 identification.) 16 A. I have it open. 17 BY MR. GINNINGS: 18 Q. Have you seen Exhibit 8? 19 A. Yes. 20 Q. What is Exhibit 8? 21 A. Exhibit 8 is entitled Declaration 22 of Dr. Jason Janet regarding U.S. Patent 23 Number 11,753,046. 24 Q. And Exhibit 8 contains your 25 opinions in support of the IPR petition that	1 preparation for your deposition today? 2 A. Yes. 3 Q. I will try to minimize the -- 4 minimizing the backtracking here. 5 I'm going to put Exhibit 9 in the 6 Zoom chat. If you could download that and 7 let me know when you have it open. 8 (Exhibit 9 was marked for 9 identification.) 10 A. Okay. I have it open. 11 BY MR. GINNINGS: 12 Q. Have you seen Exhibit 9 before? 13 A. Yes, sir. 14 Q. And what is Exhibit 9? 15 A. Exhibit 9 is entitled Declaration 16 of Dr. Jason Janet regarding U.S. Patent 17 Number 11,467,579. 18 Q. And Exhibit 9 is -- contains your 19 opinions in support of the IPR petition that 20 is Exhibit 4, right? 21 A. Yes, sir. Hold on. Let me just 22 double-check. 23 Q. Sure. 24 A. Yes. 25 Q. And can you go to the last page of
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1 is Exhibit 3, right? 2 A. Yes. 3 Q. And go to the last page of the 4 document, PDF Page 99 for me. 5 A. Yes. 6 Q. Is that your signature on the last 7 page? 8 A. It is, yes. 9 Q. And do you have any additions or 10 corrections to make to this declaration 11 today? 12 A. Not as I'm aware right now. 13 Q. And did you review Exhibit 9 in 14 preparation for your deposition today? 15 A. Yes, I did. 16 Q. And I apologize for backtracking, 17 but I don't believe I asked you, do you still 18 have Exhibit 8 open? 19 A. Yes. 20 Q. Did you review Exhibit 8 in 21 preparation for your deposition today? 22 A. Yes. 23 Q. And I don't believe I asked it, so 24 I will backtrack one more time, but 25 Exhibit 7, did you review Exhibit 7 in	1 Exhibit 9, PDF Page 99 for me. 2 A. Yes. 3 Q. And is that your signature on this 4 page? 5 A. Yes, sir. 6 Q. Do you have any additions or 7 corrections to make to Exhibit 9 today? 8 A. Not as I'm aware right now. 9 Q. Okay. And did you review 10 Exhibit 9 in preparation for your deposition 11 today? 12 A. Yes, sir. 13 Q. All right. And last but not 14 least, putting Exhibit 10 in the Zoom chat. 15 If you can download that and open it, and let 16 me know when you have it open. 17 (Exhibit 10 was marked for 18 identification.) 19 A. I have it open. 20 BY MR. GINNINGS: 21 Q. Have you seen Exhibit 10 before? 22 A. Yes. 23 Q. And what is Exhibit 10? 24 A. Exhibit 10 is entitled Declaration 25 of Dr. Jason Janet regarding U.S. Patent

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1 Number 11,520,346. 2 Q. Okay. And Exhibit 10 is your 3 declaration in support of the IPR petition 4 that is Exhibit 5, right? 5 A. Yes, sir. 6 Q. And can you turn to the last page 7 of Exhibit 10, PDF Page 104, for me? 8 A. Yes, sir. 9 Q. And is that your signature on the 10 last page here? 11 A. That is, yes, sir. 12 Q. And do you have any additions or 13 corrections to make to Exhibit 10 today? 14 A. Not as I'm presently aware. 15 Q. And did you review Exhibit 10 in 16 preparation for your deposition today? 17 A. Yes, sir. 18 Q. All right. Just a few more. 19 I'm -- the next set of exhibits are going to 20 be the patents that are the subject of these 21 IPR proceedings. I'm going to go ahead and 22 put Exhibit 11 in the Zoom chat. If you can 23 let me know when you have that open. 24 (Exhibit 11 was marked for 25 identification.)	1 Exhibit 11 in preparation for your deposition 2 today? 3 A. Yes, sir. 4 Q. I've put Exhibit 12 in the Zoom 5 chat. If you can let me know when you have 6 that one open. 7 (Exhibit 12 was marked for 8 identification.) 9 A. I have it open. 10 BY MR. GINNINGS: 11 Q. Have you seen Exhibit 12 before? 12 A. Yes, sir. 13 Q. What is Exhibit 12? 14 A. Exhibit 12 is entitled Machine 15 Learning Based Prediction of Human 16 Interactions With Autonomous Vehicles, U.S. 17 Patent Number 11,126,889. 18 Q. Okay if I refer to this as the 19 '889 Patent today? 20 A. Yes, sir. 21 Q. And the '889 Patent, Exhibit 12, 22 that's the patent that's the subject of the 23 IPR petition Exhibit 2, right? 24 A. Yes, sir. 25 Q. And the '889 Patent, Exhibit 12,
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1 A. I have it open. 2 BY MR. GINNINGS: 3 Q. Have you seen Exhibit 11 before? 4 A. Yes. 5 Q. What is Exhibit 11? 6 A. Exhibit 11 is U.S. Patent 7 Number 10,614,344. 8 Q. And is it okay if I refer to this 9 as the '344 Patent today? 10 A. Yes, sir. 11 Q. And the '344 Patent here, 12 Exhibit 11, is the patent that is the subject 13 of the IPR petition that is Exhibit 1, right? 14 A. Yes. 15 Q. And it is also the patent that you 16 discuss in the declaration that's Exhibit 6, 17 right? 18 A. In my declaration, I refer to this 19 as Exhibit 6? Is that what you're saying? 20 Q. I'm saying the patent that is the 21 subject of this declaration, Exhibit 6, 22 that's the '344 Patent which is Exhibit 11, 23 right? 24 A. Correct. 25 Q. Okay. And did you review	1 is a patent that you offer opinions in the 2 declaration as Exhibit 7, right? 3 A. Yes, sir. 4 Q. Did you review Exhibit 12 in 5 preparation for your deposition today? 6 A. Yes, sir. 7 Q. Exhibit 13 is in the Zoom chat. 8 Can you let me know when you have that open? 9 (Exhibit 13 was marked for 10 identification.) 11 A. I have it open. 12 BY MR. GINNINGS: 13 Q. Have you seen Exhibit 13 before? 14 A. Yes. 15 Q. And what is Exhibit 13? 16 A. Exhibit 13 is a U.S. patent 17 entitled System and Method of Predicting 18 Human Interaction with Vehicles, and it's 19 U.S. Patent Number 11,753,046. 20 Q. And is it okay if I refer to this 21 as the '046 Patent today? 22 A. Yes. 23 Q. And the '046 Patent, here 24 Exhibit 13, is the patent that's the subject 25 of the IPR petition as Exhibit 3, right?

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1 A. Yes. 2 Q. And the '046 Patent is the patent 3 that you offer opinions about in the 4 declaration as Exhibit 8, right? 5 A. Yes. 6 Q. Exhibit 14 is in the Zoom chat. 7 Let me know when you have that open. 8 (Exhibit 14 was marked for 9 identification.) 10 A. I have it open. 11 BY MR. GINNINGS: 12 Q. Have you seen Exhibit 14 before? 13 A. Yes. 14 Q. What is Exhibit 14? 15 A. Exhibit 14 is U.S. patent entitled 16 Probabilistic Neural Network for Predicting 17 Hidden Context of Traffic Entities for 18 Autonomous Vehicles, and it's U.S. Patent 19 Number 11,467,579. 20 Q. Is it okay if I refer to this as 21 the '579 patent today? 22 A. Yes. 23 Q. And the '579 patent, here 24 Exhibit 14, is the patent which is the 25 subject of the IPR petition which is	1 A. I'm sorry. '346. I apologize. 2 I clicked on the wrong thing. 3 Q. It's okay. 4 A. Sorry about that. A lot of PDFs 5 open right now. 6 Q. Yeah. So to make sure we're 7 looking at the same thing here, what is 8 Exhibit 15? 9 A. Exhibit 15 is entitled Navigating 10 Autonomous Vehicles Based on Modulation of a 11 World Model Representing Traffic Entities. 12 Q. And do you see the patent number 13 on the top right on the first page? 14 A. Yes. 15 Q. U.S. Patent Number 11,520,346, 16 right? 17 A. Yes. 18 Q. Is it okay if I refer to this as 19 the '346 patent today? 20 A. Yes. 21 Q. Have you seen Exhibit 15 before? 22 A. Yes. 23 Q. Okay. And the '346 patent, 24 Exhibit 15, is the patent that is the subject 25 of the IPR petition that's Exhibit 5, right?
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1 Exhibit 4, right? 2 A. Yes. 3 Q. And the '579 patent is also the 4 patent that you offered opinions about in the 5 declaration that's Exhibit 9, correct? 6 A. Yes. 7 Q. Did you review Exhibit 14 in 8 preparation for your deposition today? 9 A. Yes, sir. 10 Q. And last but not least, Exhibit 15 11 is in the Zoom chat. If you can let me know 12 when you have that one open. 13 (Exhibit 15 was marked for 14 identification.) 15 A. I have it open. 16 BY MR. GINNINGS: 17 Q. Have you seen Exhibit 15 before? 18 A. Yes. 19 Q. What is Exhibit 15? 20 A. Exhibit 15 is entitled System and 21 Method of Predicting Human Interaction With 22 Vehicles, Patent Number U.S. 11,753,046. 23 Q. I think we may be looking at a 24 different document. You should have 25 Exhibit 15 open.	1 A. Yes. 2 Q. And the '346 patent, Exhibit 15, 3 is the patent that you offer opinions about 4 in your declaration that's Exhibit 10, right? 5 A. Yes. 6 Q. Okay. Did you review Exhibit 15 7 in preparation for your deposition today? 8 A. Yes. 9 Q. Okay. So we have got Exhibits 1 10 through 5 are the petitions; 6 through 10 are 11 the declarations; 11 through 15 are the five 12 patents. Okay? 13 A. Yes. 14 Q. There will be a few others. We'll 15 get to the others, but I just wanted to get 16 that out of the way before we jump in here. 17 Now, I want to -- I want to start 18 with your opinions relating to the 19 '344 Patent and that declaration is 20 Exhibit 6. Can you -- if you want to keep 21 the others open, you can, but if you want to 22 close them out, that's fine too, and just 23 have Exhibit 6 open, if that's easier. It's 24 up to you. 25 A. Counsel, if it's all right, I

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1 would like to take down whatever we don't 2 need because Adobe chokes periodically, as 3 you know. 4 Q. Yeah. 5 A. All right. So we're going to 6 focus on -- you said which one? 7 Q. Exhibit 6. 8 A. It's already slowing down. 9 Q. Do you have Exhibit 6 open? 10 A. I do. I'm trying to take down 11 some others, and I'm trying to do that. 12 I got the Adobe not responding at the top. 13 So it's -- it will come back in a minute. 14 Q. I just want to make sure we 15 weren't both waiting on the other. 16 A. I apologize. 17 Q. No. No. That's fine. 18 A. With your permission, Counsel, I 19 think I'm going to just shut down Adobe and 20 then bring those three exhibits up related to 21 the '346. 22 Q. Yeah, sure. 23 A. Give me a second. 24 Q. Sorry. I thought that's what we 25 were already doing.	1 right documents pulled up? 2 MR. GINNINGS: Yeah, I believe 3 he said '346, but I think the exhibits 4 that I mentioned are all -- 5 MR. BARAZESH: Yeah. They 6 should be. I just want to make sure 7 he's looking at the '346. 8 BY MR. GINNINGS: 9 Q. Dr. Janet, just to be clear, you 10 have Exhibits 1, 6, and 11 up right now? 11 A. I have another Adobe issue here. 12 Yeah, I apologize. I misspoke. 13 Q. All right. So just to be clear, 14 you're looking at Exhibits 1, 6, and 11 right 15 now? 16 A. Yes. 17 Q. And that's -- those are the 18 petition, declaration, and patent, which are 19 for the '344 Patent? 20 A. Yes. 21 Q. Okay. And in your declaration, 22 Exhibit 6, you offer -- you allege three 23 grounds of invalidity concerning the 24 '344 Patent, correct? 25 A. Yes.
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1 A. Well, I was trying to take it 2 down, but for whatever reason, I've got an 3 Adobe not responding and a spinning circle. 4 So we have the three exhibits for 5 the '346 patent: the petition, the 6 declaration -- my declaration, and the patent 7 itself; is that right? 8 Q. Just to be clear, those are 9 Exhibits 1, 6, and 11, right? That's what 10 you have? 11 A. Correct. 12 Q. Okay. So focusing for the moment 13 on your declaration, Exhibit 6, am I correct 14 that -- just to kind of make sure we're on 15 the same page here, there are three grounds 16 of validity that you opine on in this 17 declaration; is that correct? 18 And if it helps, I'm looking at 19 the table of contents that starts on PDF 20 Page 2. 21 MR. BARAZESH: Can I just 22 clarify? I think Dr. Janet mentioned 23 the '346. Are you looking at 24 the -- meant to be looking at the '344 25 right now, just so everyone has the	1 Q. As I mentioned, I'm looking at the 2 table of contents just to orient ourselves 3 here -- 4 A. Right. 5 Q. -- starting on PDF Page 2. Can 6 you turn to PDF Page 2 for me, if you're not 7 already there? 8 A. Yeah, I'm there. Sorry. 9 Q. Okay. And do you see the heading 10 in the table of contents for Ground 1? 11 A. Yes. 12 Q. And the heading says Ground 1, 13 Claims 1 through 22 are unpatentable under 14 35 U.S.C. Section 103 over Ross and Cox, 15 right? 16 A. Yes, sir. 17 Q. So your opinions for Ground 1 are 18 that Claims 1 through 22 of the '344 Patent 19 are unpatentable under 35 U.S.C. Section 103 20 over Ross and Cox, right? 21 A. Yes, sir. 22 Q. And Section 103 is obviousness, 23 right? 24 MR. BARAZESH: Objection to the 25 extent you're calling for a legal

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1 conclusion. 2 A. Generally speaking, that's my 3 understanding. 4 BY MR. GINNINGS: 5 Q. And can you turn to PDF Page 4 for 6 me? 7 A. I'm there. 8 Q. And do you see the heading for 9 Section B, Ground 2 there in the middle of 10 the page? 11 A. Yes. 12 Q. And the heading says: Ground 2, 13 Claims 1 through 22 are unpatentable under 14 35 U.S.C. Section 103 over Ross, Cox, and 15 Ogale, O-G-A-L-E. 16 Did I read that right? 17 A. Yes, sir. 18 Q. And so for Ground 2, you've 19 offered opinions that Claims 1 through 22 of 20 the '344 Patent are unpatentable as being 21 obvious over Ross, Cox, and Ogale, right? 22 A. Yes, sir. 23 Q. And do you see the heading for 24 Ground 3 at the bottom of that page? 25 A. I do.	1 A. Yes. 2 Q. And can you go to the next page of 3 Exhibit 6, PDF Page 79 for me. 4 A. Yes, sir. 5 Q. And do you see the numbered 6 paragraph -- do you see Paragraph 161 in the 7 middle of the page? 8 A. Yes. 9 Q. And in Paragraph 161, you state: 10 In my opinion, Zhang renders obvious Claim 1. 11 Right? 12 A. Yes, sir. 13 Q. So am I correct that all three of 14 the grounds of validity that you have opined 15 on in this declaration are obviousness? 16 A. Yes, sir. 17 Q. And are you familiar with the 18 concept of anticipation? 19 MR. BARAZESH: Objection to the 20 extent calling for a legal conclusion. 21 A. Yes, I'm familiar with the 22 concept. 23 BY MR. GINNINGS: 24 Q. Have you offered any anticipation 25 opinions in this litigation, Dr. Janet?
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1 Q. And the heading says: Ground 3, 2 Claims 1 through 5, 7 through 13 and 16 3 through 22 are unpatentable under 35 U.S.C. 4 Section -- I believe there's a typo missing 5 there -- over Zhang. Right? 6 A. Say that again, please. 7 Q. I believe there's a number missing 8 in the middle of this heading. So I just 9 want to -- we'll clear that up in just a 10 second. Let me just ask a different 11 question. Ground 3 -- strike that. 12 Why don't we -- since that says 13 Page 72, why don't we go to -- go to PDF 14 Page 78 for me. 15 A. Okay. 16 Q. And do you see the heading a few 17 lines down from the top of the page for 18 Ground 3 there? 19 A. I do, yes, sir. 20 Q. And Ground 3 concerns the Zhang 21 reference; is that right, Z-H-A-N-G? 22 A. Correct. 23 Q. Okay. And it concerns -- Ground 3 24 concerns Claims 1 through 5, 7 through 13 and 25 16 through 22 of the '344 Patent, right?	1 MR. BARAZESH: Same objection. 2 A. Just based on my understanding of 3 obviousness and anticipation, which is 4 articulated in I believe the legal standards 5 section of my declaration, my grounds are 6 based on obviousness. 7 BY MR. GINNINGS: 8 Q. So none of the grounds in this 9 declaration are based on anticipation, right? 10 MR. BARAZESH: Same objection. 11 A. Based on my understanding of that 12 legal standard, and I'm not a lawyer, but as 13 a person of ordinary skill in the art, these 14 grounds are based on obviousness. 15 BY MR. GINNINGS: 16 Q. Now, you mentioned the legal 17 standards. Can you turn to PDF Page 18 of 18 this same exhibit, Exhibit 6 for me? 19 A. Yes, sir. 20 Q. And do you see the section heading 21 Legal Standards for Patentability? 22 A. I do yes, sir. 23 Q. Now, the -- and under that 24 heading, beginning in Paragraph 7, you list a 25 number of legal standards; is that right?

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1 A. In Paragraph 27? 2 Q. Beginning in Paragraph 27, 3 continuing on for a few pages after that, 4 right? 5 A. Oh, okay. 6 MR. BARAZESH: Objection to 7 form. 8 A. What was your question? 9 BY MR. GINNINGS: 10 Q. I was just -- in this section, the 11 section that begins with that heading and 12 begins with Paragraph 27, you have laid out a 13 number of legal standards here, right? 14 MR. BARAZESH: Objection. Form. 15 BY MR. GINNINGS: 16 Q. Is that correct, Dr. Janet? 17 A. What I've laid out here is my 18 understanding of these legal standards. 19 Q. Okay. And were these legal 20 standards provided to you by counsel? 21 MR. BARAZESH: Objection to the 22 extent you're calling for privileged 23 communications. 24 Dr. Janet, you can answer that 25 question if you don't -- to the extent	1 A. Yes, sir. 2 Q. In Paragraph 33, the first 3 sentence here, you state: I understand that 4 there are two ways in which prior art may 5 render a patent claim unpatentable. 6 Right? 7 A. Yes, sir, that's how it reads. 8 Q. And the next sentence, you say: 9 First, the prior art can be shown to 10 anticipate the claim. 11 Right? 12 A. Yes, sir. 13 Q. And as we just covered, you 14 haven't offered any opinions in this 15 declaration about anticipation, right? 16 A. The grounds that I provided are 17 based on my understanding of obviousness. If 18 there is a misunderstanding that makes 19 it -- that feeds the anticipation position, 20 then I'm presently not aware of it, but I 21 acknowledge that possibility. 22 Q. Just continuing on here in 23 Paragraph 33, next sentence says: Second, 24 the prior art can be shown to have made the 25 claim obvious to a person of ordinary skill
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1 you don't disclose the content of 2 communications with counsel. 3 THE WITNESS: Understood. 4 MR. BARAZESH: Also objection to 5 the extent it's calling for any legal 6 conclusions. 7 A. Yes, I relied on counsel for 8 giving the information to form the 9 understanding I have which is articulated 10 here in this section. 11 BY MR. GINNINGS: 12 Q. Okay. And these legal standards 13 that you have listed here in this section, 14 did you apply them in your analysis in this 15 declaration? 16 MR. BARAZESH: Same -- same 17 objections. 18 A. Yes, sir, if I understand the 19 question properly. 20 BY MR. GINNINGS: 21 Q. If you turn to the next page, PDF 22 Page 19 for me. 23 A. Okay. 24 Q. And do you see Paragraph 33 in the 25 middle of the page?	1 in the art. 2 Right? 3 A. Yes. 4 Q. And then you state: In this 5 declaration, I focus on obviousness. 6 Right? 7 A. Correct. Yes, sir. 8 Q. And then you say: My 9 understanding of the legal standard for 10 obviousness is set forth below. 11 Right? 12 A. That's my understanding. Yes, 13 sir. 14 Q. Okay. Paragraph 34 you state 15 that: I understand that a claimed invention 16 is not unpatentable -- sorry. Strike that. 17 I'm going to start over since I've just 18 misread it. 19 Paragraph 34 you say: I 20 understand that a claimed invention is not 21 patentable if it would have been obvious to a 22 person of ordinary skill in the field of the 23 invention at the time the invention was made. 24 Right? 25 A. Yes, sir.

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1 Q. And would you apply that legal
2 standard in rendering your obviousness
3 opinions in this case -- in this declaration
4 in Exhibit 6?

5 MR. BARAZESH: Objection.

6 A. I apologize. I spoke over
7 counsel.

8 BY MR. GINNINGS:

9 Q. Go ahead.

10 A. Did the reporter get that?

11 Q. I don't see it, so --

12 THE STENOGRAPHER: No. Can you
13 just repeat your answer?

14 A. I have -- I'm less clear in
15 remembering exactly what the question was,
16 and I want to make sure that the objection is
17 on the record as well. Could I trouble you
18 to reread that?

19 BY MR. GINNINGS:

20 Q. I will just -- I'll ask the
21 question again.

22 The standard that you listed here
23 in Paragraph 34 of your declaration,
24 Exhibit 6, did you apply that legal standard
25 in rendering the opinions in this

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1 declaration?

2 MR. BARAZESH: Objection. Form.

3 Objection to the extent this is asking
4 for legal conclusions.

5 A. I applied this with the caveat
6 that this is my understanding. This is what
7 I -- this is what I applied. Again, I'm not
8 an attorney.

9 BY MR. GINNINGS:

10 Q. Okay. Paragraph 35, the next
11 paragraph, Dr. Janet, you state: I
12 understand that the obviousness standard is
13 defined in the patent statute, 35 U.S.C.
14 Section 103(a) as follows.

15 Right?

16 A. Yes.

17 Q. And Paragraph 36 continues on. It
18 says: A patent may not be obtained through
19 the invention -- start over again because I
20 misread that.

21 Paragraph 36 states: A patent may
22 not be obtained though the invention is not
23 identically disclosed or described as set
24 forth in Section 102 of this title if the
25 differences between the subject matter sought

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1 to be patented and the prior art such that
2 the subject matter as a whole would have been
3 obvious at the time the invention was made to
4 a person having ordinary skill in the art to
5 which said subject matter pertains.

6 Right?

7 A. Yes, sir. That's how that reads.

8 Q. And then the last part of
9 Paragraph 36 says: Patentability shall not
10 be negatived by the manner in which the
11 invention was made.

12 Right?

13 A. Yes, sir.

14 Q. And did you apply the legal
15 standard here in Paragraph 36 in rendering
16 your obviousness opinions in this
17 declaration?

18 MR. BARAZESH: Objection. Form.

19 And based on -- to the extent it's
20 calling for a legal conclusion.

21 A. What I applied was how I
22 understand this.

23 BY MR. GINNINGS:

24 Q. Now, the next paragraph,
25 Paragraph 37, you state: I understand that

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1 the following standards govern the
2 determination of whether a claim in a patent
3 is obvious. I've applied these standards in
4 my evaluation of whether the claims of the
5 '344 Patent would have been considered
6 obvious as of the priority date of that
7 patent.

8 Right?

9 A. Yes, sir.

10 Q. Okay. Then you continue on in
11 Paragraph 38. You state: I understand that
12 to find a claim in a patent obvious, one must
13 make certain findings regarding the claimed
14 invention and the prior art. Specifically, I
15 understand that the obviousness question
16 requires consideration of four factors,
17 although not necessarily in the following
18 order.

19 Right?

20 A. Yes, sir.

21 Q. And the next four paragraphs list
22 those four factors, correct?

23 A. Yes, sir.

24 Q. And the first one, Paragraph 39,
25 is the scope and content of the prior art,

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1 right? 2 A. Yes, sir. 3 Q. The next one, Paragraph 40, is the 4 differences between the prior art and the 5 claims at issue, right? 6 A. Yes, sir. 7 Q. Paragraph 41, the next one, is the 8 knowledge of a person of ordinary skill in 9 the pertinent art, correct? 10 A. Yes, sir. 11 Q. And the last one, Photograph 42, 12 is whatever objective factors indicating 13 obviousness or nonobviousness may be present 14 in any particular case, right? 15 A. Yes, sir. 16 Q. Now, the legal standard that's set 17 forth here in Paragraphs 38 through 42, did 18 you apply that legal standard in rendering 19 your obviousness opinions in this 20 declaration? 21 MR. BARAZESH: Objection. Form 22 and to the extent it's calling for a 23 legal conclusion. 24 A. I applied my understanding of it. 25	1 Also asked and answered. 2 A. I certainly applied my 3 understanding of these four factors, yes, 4 sir. 5 BY MR. GINNINGS: 6 Q. Okay. Now, let's go to -- I want 7 to talk about Ground 3 in this declaration, 8 and your opinions on that begin on PDF 9 Page 78. And let me know when you're on PDF 10 Page 78. 11 A. I'm there. 12 Q. Okay. Now, as we discussed 13 earlier, Ground 3 is your opinions concerning 14 obviousness over the Zhang reference relating 15 to certain claims of the '344 Patent, right? 16 A. Yes, sir. 17 Q. And the first claim that you offer 18 opinions on is Claim 1; is that right, in 19 this ground? 20 A. Correct. 21 Q. And your opinions concerning 22 Claim 1 in this ground begin on PDF Page 79, 23 right? 24 A. Yes, sir. 25 Q. Now, your opinions on Claim 1
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1 BY MR. GINNINGS: 2 Q. Okay. So in providing your 3 obviousness opinions in this declaration, did 4 you consider the four factors that are listed 5 in Paragraphs 39 through 42? 6 MR. BARAZESH: Same objection. 7 Same objections. 8 A. I applied how I understood them. 9 BY MR. GINNINGS: 10 Q. Okay. When you say you applied 11 how you understood them, what do you mean by 12 that? 13 MR. BARAZESH: Same objections. 14 A. I had mentioned before and happy 15 to clarify, I'm not an attorney. I'm a 16 person of ordinary skill in the art. And I'm 17 offering it based on my understanding of 18 the -- of the standards as they are explained 19 to me by counsel. 20 BY MR. GINNINGS: 21 Q. Okay. So in providing your 22 obviousness opinions in this declaration, did 23 you consider the four factors that are listed 24 in Paragraph 39 through 42 here? 25 MR. BARAZESH: Same objections.	1 begin on this page, PDF Page 79, and continue 2 on for a few pages, just so I'm clear as 3 to -- all the way to PDF Page 93, right? 4 A. As it relates just to Claim 1 5 you're asking? 6 Q. Yes. 7 A. Yes. 8 Q. Okay. Now, I want to talk about 9 these opinions relating to Claim 1 in the 10 same reference. 11 And my first question, Dr. Janet, 12 is one of the factors that we just discussed 13 in your legal standard section was -- and I 14 will read it back to you. I can show it to 15 you on the screen if you need to see it as 16 well, but it's: The differences between the 17 prior art and the claims at issue. 18 Do you remember discussing that a 19 minute ago? 20 A. Generally, yes. 21 Q. Okay. Now, in providing your 22 opinions here with respect to Claim 1 and the 23 Zhang reference here in Ground 3, did you 24 consider the differences between the Zhang 25 reference in Claim 1?

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1 MR. BARAZESH: Objection. Form. 2 And to the extent it's calling for a 3 legal conclusion. 4 A. I applied my understanding of 5 that. 6 BY MR. GINNINGS: 7 Q. Okay. What are the differences 8 between Zhang reference and Claim 1 of the 9 '344 Patent? 10 MR. BARAZESH: Objection. Form. 11 A. I don't really consider them to be 12 differences necessarily. I believe that a 13 person of ordinary skill would look at them 14 and appreciate how essentially identical they 15 are. But if something is not particularly -- 16 you know, particular word is not used that's 17 in the claim language, that -- just to 18 provide a little bit of an explanation, I 19 offer a few things including, for example, on 20 Paragraph 173, where I talk about Zhang's 21 neural network of trajectory prediction 22 module is executed to generate, quote, a set 23 of predicted trajectories and confidence 24 levels for each object in the image where the 25 confidence levels, quote, correspond to a	1 opinion Zhang further teaches that if, quote, 2 if the, quote, set of predicted trajectories 3 and confidence levels (i.e., output 4 statistical summary) is characterizing a 5 distribution barring the language of the 6 claim of user responses expected to be 7 received responsive to presenting the sensor 8 data to a plurality of users, the user 9 response is associated with a particular 10 object as claimed. Zhang describes that its 11 neural network of trajectory prediction, 12 Module 175, is trained by training data that 13 is, quote, real-world human behavior data, 14 end quote, that represents, quote, human 15 driving behaviors. 16 And I provide citations, although 17 the exhibit number is probably different than 18 what we're using here in this deposition. 19 And I go on to say that: Zhang 20 explains that because the trajectory 21 prediction Module 175 is trained in the 22 training phase using real-world human 23 behavior data, the predicted behavior and 24 trajectories of vehicles or objects produced 25 by the trajectory prediction module are
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1 likelihood of the object to perform the 2 predicted behavior. 3 I go on to say that: Zhang's set 4 of predicted trajectories in confidence 5 levels teaches an output statistical summary. 6 The set of predicted trajectories and 7 confidence levels summarize the various 8 trajectories that an object in image data 9 might take and the confidences associated 10 with each prediction. This provides a 11 statistical distribution and organization 12 reflecting how an object is predicted to 13 travel within the environment of Zhang's 14 autonomous vehicle and how likely each 15 prediction is. 16 So where there might be -- I would 17 say for somebody that's not a person of 18 ordinary skill -- a challenge in what these 19 mean if not verbatim use of the claim 20 language, I go on to say that: Because these 21 values are a collection of numerical 22 measurements, it's my opinion that a POSITA 23 would have recognized that such values form 24 statistics. 25 In Paragraph 174, it starts: My	1 closely correlated to the actual behavior and 2 trajectories of vehicles in real-world 3 environments with human drivers. 4 Going forward: Zhang's training 5 data includes images that are labeled by 6 human labelers to associate -- quote, 7 associate a label -- and, by the way, human 8 labels is plural -- to associate a label 9 having behavior and direction information 10 with each instance of a vehicle in the 11 training data. 12 The labeled training represents 13 different driving scenarios and includes, 14 quote, human driver behavior, data related to 15 how drivers typically react to actions 16 performed by proximate vehicles, end quote. 17 A, quote, loss function is used to 18 examine and correct the results of the 19 training. 20 So in my opinion, a person of 21 ordinary skill would have understood that 22 loss functions are used in machine learning 23 to quantify the error between the correct 24 human labels of training images and a desired 25 model output, and thus allowing for

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1 adjustment of the model to reduce the error. 2 In regarding the model 3 functionality during training, I explain how 4 a person of ordinary skill would have 5 understood that loss functions are used in 6 machine learning to quantify the error 7 between the correct human labels of training 8 images and a desired model output. And thus 9 allowing for adjustment of the model to 10 reduce the error. 11 So I don't really see differences. 12 And I certainly don't see -- I think the 13 differences are more about the vernacular 14 than they are about what they mean. And I 15 offer up how a POSITA would see them to 16 clarify that those differences really aren't 17 differences. 18 Q. What do you mean when you say 19 that -- how a POSITA would see them to 20 clarify that those differences aren't really 21 differences? Can you tell me what you mean 22 by that? 23 A. Yeah. I probably shouldn't have 24 used "differences" in the same sentence 25 twice.	1 want to interrupt, but we have been 2 going about an hour and 20 minutes 3 here. Would it make sense to just 4 have a short break here or? 5 MR. GINNINGS: Yeah, let's get 6 through and -- let me do with this 7 paragraph and then we can -- we can 8 hop off for a few minutes before we 9 touch on the other two. Does that 10 sound good? 11 MR. BARAZESH: Is that okay with 12 you, Dr. Janet? 13 THE WITNESS: That works. 14 BY MR. GINNINGS: 15 Q. Okay. Paragraph 173. Now, I want 16 to understand, is it your opinion here in 17 Paragraph 173 that there are differences 18 between Zhang and Claim 1 of the '344 Patent? 19 MR. BARAZESH: Objection. Form. 20 A. Well, as I mentioned, from my 21 perspective and what I believe the 22 perspective of a person of ordinary skill in 23 the art, there aren't differences. I 24 recognize that perhaps some things may not be 25 verbatim, and so for someone that's a
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1 How the -- what I think a 2 non-POSITA would consider at face value to be 3 differences really aren't differences. But 4 it's -- you know, because it's not verbatim 5 or might not be verbatim, I added the clarity 6 from the perspective of person of ordinary 7 skill. 8 Q. So I just want to make sure I'm 9 following that. I believe that there were 10 three portions that you pointed out, and I 11 want to go back to each one. I believe the 12 first one was in Paragraph 173; is that 13 correct? 14 A. Yes. 15 Q. And then just to -- we'll come 16 back to it, but I just want to make sure I've 17 got each of the three. The next one is in 18 Paragraph 174, right? 19 A. Correct. 20 Q. And the third one is in 21 Paragraph 1 -- I apologize. Paragraph 177. 22 A. Yes. 23 Q. Okay. Let's first talk about the 24 one in Paragraph 173. 25 MR. BARAZESH: Sorry, I don't	1 non-POSITA to read this at face value, they 2 might think there is a difference, but I 3 don't. 4 BY MR. GINNINGS: 5 Q. Okay. Now, in offering your 6 opinions in this case, did you review the 7 Zhang reference from the perspective of a 8 POSITA or of a non-POSITA? 9 MR. BARAZESH: Objection. Form. 10 A. I might have cut you off, Counsel. 11 I reviewed it from the perspective 12 of a POSITA. 13 BY MR. GINNINGS: 14 Q. And just to be clear, I just want 15 to make sure we're orienting things 16 correctly. This Paragraph 173 concerns what 17 you've labeled as Element 1[b] of the claim, 18 right? If you want to refer back to PDF 19 Page 82, I believe is where you have to go 20 back to double-check that. 21 A. Yes, sir. 22 Q. Okay. Now, so I'm clear, in 23 Paragraph 173 here, is it your opinion that 24 there's a difference between the Zhang 25 reference and Element 1[b] of the -- Claim 1

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1 of the '344 Patent? 2 MR. BARAZESH: Objection. 3 Misstates testimony. 4 A. As I mentioned before, I believe 5 that it's possible for a non-POSITA to 6 perhaps get caught up if there's a difference 7 in the specific terms that are used, and I 8 try to look at that at least a little bit 9 through that lens. But as a person of 10 ordinary skill, I recognize that with the 11 insights that a POSITA would have, that there 12 really aren't differences. 13 And I understand this is perhaps 14 bringing together one of those factors -- I'm 15 sorry, bringing together multiple factors, 16 but looking at it from my lens or through my 17 lens, there really isn't a difference. And I 18 explained how a POSITA would view that in 19 this paragraph accordingly. 20 MR. GINNINGS: Before we turn to 21 the next paragraph that you 22 identified, let me go ahead and take a 23 short break here and go off the 24 record. 25 MR. BARAZESH: Sounds good.	1 discussing what I believe you were calling 2 potential differences. 3 Q. Okay. And before the break, we 4 talked about Paragraph 173, right? 5 A. Yes, I believe so, yes. 6 Q. And the next paragraph that I 7 believe you mentioned earlier was 8 Paragraph 174, right? 9 A. Yes. 10 Q. And I want to -- just so it's 11 clear here, as we discussed earlier, both of 12 these paragraphs, Paragraphs 173 and 174 13 concern Element 1[b] of Claim 1, right? 14 A. Yes. 15 Q. And I -- just so I'm clear here, I 16 want to -- I'm going to share my screen here 17 for a second so I don't try to minimize your 18 having to flip around. I just want to have 19 Element 1[b] here while we're talking about 20 for a second here. 21 This is what I have on the screen 22 here, I'll represent to you, is Exhibit 1, 23 the petition, and then the petition lays out 24 these claim elements. I have 1[b] on the 25 screen.
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1 Are you good with five minutes, 2 Dr. Janet? 3 THE WITNESS: I am. Thank you. 4 (A brief recess was held from 5 11:29 a.m. to 11:37 a.m.) 6 BY MR. GINNINGS: 7 Q. Welcome back, Dr. Janet. 8 A. Thank you. 9 Q. Before I continue on, do you have 10 any additions or corrections to make to your 11 testimony so far today? 12 A. No, sir, not so far. 13 Q. So before the break, we were 14 talking about Ground 3 in the declaration, 15 Exhibit 6 in the Zhang reference, right? 16 A. Yes. 17 Q. And we were talking about the 18 issue of differences between the Zhang 19 reference in Claim 1, right? 20 A. We were -- I struggle to put those 21 in the differences category as I mentioned 22 before. I think from -- through the lens of 23 a person of ordinary skill, be very clear 24 what those mean, that there really isn't a 25 difference, but I will say that we were	1 Do you see it beginning with 2 providing the sensor data here? 3 A. I do. 4 Q. Now, Element 1[b] -- I will just 5 read it in its entirety. It's: Providing 6 the sensor data as input to a supervised 7 learning-based model. The supervised 8 learning-based model configured to receive an 9 input sensor data, displaying a particular 10 object on a road and predicting an output 11 statistical summary characterizing a 12 distribution of user responses expected to be 13 received responsive to presenting the sensor 14 data to a plurality of users. The user 15 response is associated with the particular 16 object. 17 A. Yes, sir. 18 Q. Now, is it your opinion that the 19 Zhang reference teaches Element 1[b] of this 20 claim? 21 A. As I mentioned in Paragraph 177: 22 In my opinion, the foregoing confirms that 23 Zhang's, quote, set of predicted trajectories 24 and confidence levels described above for 25 operational use are also generated during

Page 66 1 training. As noted above, it is my opinion 2 that a POSITA would have understood that loss 3 functions are used in machine learning to 4 quantify the error between the correct human 5 labels of training images and a desired model 6 output and thus allows for adjustment of the 7 model to reduce the error. 8 Zhang, therefore, teaches 9 predicting an output statistical summary 10 characterizing a distribution of user 11 responses expected to be received responsive 12 to presenting the sensor data of a plurality 13 of users. The user response is associated 14 with the particular object, and the training 15 context for the same reasons discussed above 16 in operational use. 17 Q. Okay. Appreciate that. I don't 18 think it answers the question that I asked, 19 though, which is: Is it your opinion that 20 the Zhang reference teaches Element 1[b] of 21 this claim? 22 A. So I just want to let you know I'm 23 looking at the '344 Patent because I want to 24 have these side by side. 25 Q. Okay.	Page 68 1 functionality during operational use. 2 Paragraphs 173 and 174 and 175 3 relate to the model functionality during 4 operational use. And the major point here is 5 that regardless of whether the neural network 6 in Zhang is during training or during 7 operational use, it discloses Element 1[b] in 8 the '344 Patent. 9 BY MR. GINNINGS: 10 Q. So I want to make -- maybe my 11 question wasn't clear. So let me try asking 12 it again. 13 Do you remember earlier I asked 14 you what the differences are between the 15 Zhang reference and Claim 1? 16 Do you remember that? 17 A. I remember you asked that 18 question, yes. 19 Q. And in your answer, you identified 20 three paragraphs from this declaration. 21 Do you remember that? 22 A. I identified three paragraphs that 23 didn't necessarily agree that they are 24 differences, just that they were paragraphs 25 wherein I explained that there really aren't
Page 67 1 A. Well, the short answer is yes. 2 Q. Okay. Now, starting to ask about 3 Paragraph 174, which is on PDF Page 87. Can 4 you go to that page for me? 5 A. Yes. 6 Q. Now, this is a paragraph that you 7 identified earlier when I asked you whether 8 there are any differences between Claim 1 and 9 the Zhang reference, right? 10 A. I don't remember the exact 11 phrasing that you used, but we were talking 12 about -- or you were asking about what might 13 be construed as differences. 14 Q. Okay. Now, let me ask it this 15 way: Setting aside for the moment whether 16 you believe it's a difference or not, what is 17 the issue or difference or non-difference 18 that you identified in Paragraph 174 between 19 Element 1[b] and the Zhang reference? 20 MR. BARAZESH: Objection. Form. 21 A. If one were to scroll a little 22 further back in the declaration, you would 23 notice that there are two, I guess, use cases 24 for -- or use stages, and one relates to the 25 training part, and one relates to the model	Page 69 1 differences. 2 Q. Okay. And so what I'm asking here 3 is in Paragraph 174, was the difference or 4 non-difference that you were explaining 5 between the Zhang reference in Claim 1? 6 MR. BARAZESH: Objection. Form. 7 And asked and answered. 8 A. I'm not really -- I can't really 9 agree that these are differences, I believe, 10 that as I explained here, that a person of 11 ordinary skill would understand that even 12 during operational use, this meets 13 Limitation 1[b] in the '344 Patent. 14 BY MR. GINNINGS: 15 Q. I want to clear -- clear whatever 16 up it is that you're not understanding about 17 my questions so that we can -- we can answer 18 it. 19 So earlier I asked you what the 20 differences are between Zhang in Claim 1, and 21 you identified three paragraphs where you 22 indicated that you explained in those 23 paragraphs why there aren't any differences. 24 What I want to understand is in 25 Paragraph 174, what, in your view,

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1 non-difference are you pointing out between 2 the Zhang reference in Claim 1? 3 MR. BARAZESH: Objection. Form. 4 And asked and answered. 5 A. The -- if you look at the top of 6 174, this mentions that in my opinion, Zhang 7 further teaches that the, quote, set of 8 predicted trajectories and confidence levels 9 (i.e., output statistical summary) is 10 characterizing a distribution of user 11 responses expected to be received responsive 12 to presenting the sensor data to a plurality 13 of users. The user response is associated 14 with the particular object. 15 I mention in this paragraph 16 that -- saying: Described its neural network 17 of trajectory prediction is trained by 18 training data that is, quote, real-world 19 human behavior data that represents, quote, 20 human driving behaviors. Among other 21 things -- and I will skip a few points that 22 I've already, I believe, read into the 23 record. 24 But about midway down, that 25 paragraph, I mention that Zhang's training	1 BY MR. GINNINGS: 2 Q. The other paragraph that you 3 identified earlier was Paragraph 177, right? 4 A. Correct. This relates to the 5 model functionality during, instead of 6 operation, but during training. 7 Q. Okay. Now, in paragraph -- 8 A. Let me just say -- let me confirm 9 here because this might have been a wrap up 10 for both of those modes. Right. And I 11 believe it actually relates to both. But go 12 ahead. I'm sorry. 13 Q. Okay. Now what difference or 14 non-difference between the Zhang reference 15 and Element 1[b] do you identify in 16 Paragraph 177? 17 MR. BARAZESH: Objection. Form. 18 A. I think the -- among others, but a 19 major potential snag that somebody that's a 20 non-POSITA might have in reading this would 21 be just does -- first of all, does this 22 represent what a plurality of users would 23 have interpreted or how the information from 24 a plurality of users would have been 25 integrated into the training model.
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1 data includes images that are labeled by 2 human labelers, plural, to, quote, associate 3 a label having a behavior -- having behavior 4 and direction information with each instance 5 of a vehicle in the training data. 6 So a POSITA would have understood 7 that the loss functions are used in machine 8 learning to quantify the error between the 9 correct human labels of training images -- 10 those labels come from a plurality of human 11 labelers -- and a desired model output and 12 thus allows for adjustment of the model to 13 reduce the error. 14 BY MR. GINNINGS: 15 Q. Okay. So is it that last sentence 16 there, where you say what a POSITA would have 17 understood? Is that the non-difference 18 you're trying to clarify? 19 MR. BARAZESH: Objection. Form. 20 A. I don't know how else to describe 21 it, other than what's written here, and would 22 really not want to try to explain it using 23 different terms for fear that that could get 24 misinterpreted. 25	1 So this is really just explaining 2 that it's the same thing, even for the two 3 different modes, training and operation. 4 BY MR. GINNINGS: 5 Q. So is it your opinion, Dr. Janet, 6 that there are no differences between the 7 Zhang reference in Claim 1 of the 8 '344 Patent? 9 MR. BARAZESH: Objection. Form. 10 A. It is definitely my opinion that 11 in view of a person of ordinary skill in the 12 art's understanding of Claim Element 1[b], 13 that there really isn't a difference. 14 BY MR. GINNINGS: 15 Q. And what about for the other 16 elements of Claim 1? 17 MR. BARAZESH: Same objection. 18 A. Is that a blanket question or was 19 there something specific or do you want me 20 to -- 21 BY MR. GINNINGS: 22 Q. Yeah, so I mean -- and I apologize 23 if there was a misunderstanding. I -- my 24 question was about Claim 1 as a whole, not 25 about just Element 1[b]. So let me just

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1 re-ask the question. 2 Is it your opinion, Dr. Janet, 3 that there are no differences between the 4 Zhang reference and Claim 1 of the 5 '344 Patent? 6 MR. BARAZESH: Objection. Form. 7 A. Paragraph 161, I say: In my 8 opinion, Zhang renders obvious Claim 1. And 9 when I view the claim elements of Claim 1, 10 which I have described here in my 11 declaration, weighted by the knowledge and 12 view of a person of ordinary skill, 13 essentially there aren't differences. 14 BY MR. GINNINGS: 15 Q. Now, we discussed earlier that 16 your opinions concerning the Zhang reference 17 and Claim 1 of the '344 Patent are based on 18 obviousness, right? 19 A. Correct. 20 Q. Not anticipation? 21 A. I approached it based on my 22 understanding of obviousness. 23 Q. Now, if it's your opinion that 24 there are no differences between the Zhang 25 reference and Claim 1, Dr. Janet, why did you	1 this question several times. The specific 2 terminologies may be different from the claim 3 language in the '344 Patent and the 4 disclosure in the Zhang reference, but their 5 fundamental meeting is there. 6 And the -- in view of a person of 7 ordinary skill, the differences would be 8 essentially not there. They would 9 understand, I would understand that they are 10 essentially saying the same thing. 11 Now, does that fall into the 12 bucket of anticipation? I think that's a 13 legal conclusion that needs to be drawn. 14 I think that the preferred approach, given 15 that a little bit of explanation as to how a 16 person of ordinary skill would see things is 17 why the obviousness category is selected. 18 Again, if it fits into anticipation, then it 19 fits there, but that's probably based on a 20 legal conclusion, not something that I can 21 provide. 22 BY MR. GINNINGS: 23 Q. I want to go back to an issue you 24 raised a few minutes ago about Element 1[b], 25 and can you go to -- still in Exhibit 6, PDF
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1 not opine that the Zhang reference 2 anticipates Claim 1? 3 MR. BARAZESH: Objection to 4 form. Objection to the extent it's 5 asking for a legal conclusion. And 6 also objection in terms of privilege, 7 if this is asking for work products or 8 privileged communications between 9 counsel or with counsel. 10 A. I just want to be clear here. 11 I believe that when you look at the elements 12 of Claim 1 of the '344 Patent through the 13 lens of a person of ordinary skill in the 14 art, who is also looking at Zhang, that the 15 differences would be insignificant, and it 16 would be very clear to that person of 17 ordinary skill that the Zhang meets the 18 limitations of each of those elements in the 19 Claim 1. 20 BY MR. GINNINGS: 21 Q. And when you say "that the 22 differences would be insignificant," what 23 differences are you referring to? 24 MR. BARAZESH: Objection. Form. 25 A. I also feel like I've answered	1 Page 86 for me? 2 A. Okay. 3 Q. And do you see Paragraph 172 at 4 the top of that page? 5 A. I do. 6 Q. Okay. Now, in Paragraph 172, you 7 state: In my opinion, the '344 Patent 8 limitation predicting an output statistical 9 summary characterizing a distribution of user 10 responses expected to be received responsive 11 to presenting the sensor data to a plurality 12 of user, the user responses associated with a 13 particular object may be interpreted to refer 14 to functionality. The model is configured to 15 perform during operational use as well as 16 during training. 17 Right? 18 A. Yes, sir. 19 Q. And then you state: In either 20 situation, Zhang teaches the limitation. 21 Correct? 22 A. Yes, sir. 23 Q. So I want to understand here, is 24 it your -- strike that. 25 When you say that the -- that

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1 limitation "may be interpreted to refer to 2 functionality, model is configured to perform 3 during operational use as well as during 4 training," are you saying that there may be 5 two different ways that element could be 6 interpreted? 7 MR. BARAZESH: Objection. Form. 8 Objection. Scope. 9 A. I don't necessarily think that 10 there are two different ways that it can be 11 interpreted. What I acknowledge is that when 12 it boils down to neural networks, 13 particularly as they're described by the 14 patents at issue and the invalidating prior 15 art that we're utilizing that there are 16 essentially two modes. You have training and 17 you have operational use. 18 And in training, during training, 19 or for training, there would be a collection 20 of -- I'm using this in the generic 21 sense -- human-based annotations or labels 22 and sometimes the statistics surrounding 23 those. And they would be required to teach 24 the neural network to represent not just the 25 specific data that is fed to it for learning,	1 still meet the limitations of 1[b] during 2 training. 3 Q. Okay. So I want to be clear. So 4 in Paragraph 172, the italicized portion that 5 begins: predicting an output statistical 6 summary. 7 Do you see that? 8 A. Yes. 9 Q. That's language from Claim 1, 10 right, the italicized language there? 11 A. Yes, it starts Column 15, Line 34. 12 Q. You're looking at the patent 13 itself? 14 A. I'm looking at the patent, yes. 15 Q. All right. Now, in this 16 declaration Exhibit 6, you haven't offered 17 any claim construction opinions about this 18 italicized claim element, have you? 19 A. I just -- 20 MR. BARAZESH: Objection. Form. 21 A. I just used the plain and ordinary 22 meaning. 23 BY MR. GINNINGS: 24 Q. Now, you anticipated my next -- my 25 next question there.
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1 but to bridge any sort of gaps in that data 2 to represent what the plurality of users 3 would have concluded or opted to, you know, 4 do, choose, interpret. 5 And so then that, if you're no 6 longer in training mode but you're in 7 operational mode, the output still represents 8 what that collection of users would have 9 done, interpreted, you know, agreed with and 10 collectively, that sort of thing. 11 So I recognize there's two modes. 12 The claim does not -- that claim element does 13 not break out the -- that this strictly 14 relates to one mode over the other. So 15 appreciating that at least a person of 16 ordinary skill and maybe somebody who is not 17 but, you know, has some understanding about 18 learning-based models, and particularly 19 supervised learning-based models would or 20 could wonder as to which it relates to. 21 So in this situation, this 22 particular section, I talk about how the 23 model can be used during operational use 24 and -- or model can function, I should say, 25 and still meet the limitations of 1[b] and	1 So in offering your opinions here, 2 have you applied the plain and ordinary 3 meaning of that italicized phrase to a person 4 of ordinary skill in the art? 5 A. Yes. If I understand your 6 question correctly, I'm using a plain and 7 ordinary meaning from a perspective of a 8 person of ordinary skill in the art. 9 Q. And is the plain and ordinary 10 meaning to a person of ordinary skill in the 11 art of that phrase, does it refer to 12 functionality the model is configured to 13 perform during operational use or during 14 training? 15 MR. BARAZESH: Objection. Form. 16 A. As I explain in that same 17 paragraph, that italicized section may be 18 interpreted to refer to functionality the 19 model is configured to perform during 20 operational use as well as during training. 21 BY MR. GINNINGS: 22 Q. So under the plain and ordinary 23 meaning to a person of ordinary skill in the 24 art of that italicized phrase, does it refer 25 to functionality the model is configured to

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1 perform during operational use or during 2 training? 3 MR. BARAZESH: Objection. Form. 4 Asked and answered. 5 A. The claim does not dedicate the 6 content of that element to one particular 7 mode, whether it's operational or training. 8 So as I explained before, a person of 9 ordinary skill would look at this and realize 10 that it could apply to one or both. And I 11 believe as a person of ordinary skill that it 12 applies to both. 13 BY MR. GINNINGS: 14 Q. Okay. I want to focus in 15 on -- what I will call like a subset of that 16 element and focus in a little bit more on 17 smaller pieces. I want to start with 18 predicting an output statistical summary. 19 Do you see that phrase at the 20 beginning of the italicized portion there in 21 Paragraph 172? 22 A. I do. 23 Q. And do you apply the plain and 24 ordinary meaning of that phrase in your 25 analysis here?	1 A. An output statistical summary is 2 the output values of the neural network, and 3 they indicate some measure. A statistical 4 summary can mean several things from a 5 histogram to, you know, conditional means to 6 include variances or accuracy, which are 7 oftentimes used interchangeably. 8 But the -- the statistical 9 summary, from my perspective as a person of 10 ordinary skill, is one where you have a 11 distribution of measurable outputs. And 12 there are ways of characterizing that if one 13 wants to. But at a minimum it's this 14 distribution -- again, it could be a 15 histogram. It could be a variety of things. 16 Multimodal. You know, it could be a 17 probability density function. It could be, 18 you know, first order, second order, higher 19 order statistics, but it's -- it's inclusive 20 of all those things. 21 BY MR. GINNINGS: 22 Q. And when you say "a distribution 23 of measurable outputs," what do you mean by 24 that? 25 A. Well, I will just give you one
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1 A. I do, did. 2 Q. Now, in your opinion what is the 3 plain and ordinary meaning of an output 4 statistical summary as used in Claim 1? 5 A. Well, that question requires a 6 little bit of unpacking, but one aspect of 7 that is that whether a neural network is in 8 training mode or operational mode, it is 9 still predicting an output statistical 10 summary. 11 If it is strictly in training 12 mode, then that prediction is corrected or 13 it's compared to what the actual output 14 should be and an error is calculated and it's 15 applied to a weighting function, sometimes a 16 multidimensional weighting function, and it's 17 propagated back to correct the weights, 18 sometimes referred to as synoptic weights. 19 But whether it's in training mode 20 or operational mode, it's still providing 21 that output statistical summary prediction. 22 Q. What is the plain and ordinary 23 meaning of the phrase "an output statistical 24 summary" that you applied in your analysis? 25 MR. BARAZESH: Objection. Form.	1 example, and this isn't meant to say this is 2 everything. So the individual value may 3 represent a statistical measure. It could be 4 a probability. It could be a variance. It 5 could be a confidence level. It could be 6 uncertainty which is one minus to confidence. 7 Or you could have multiple outputs from a 8 neural network that the -- you know, the 9 different values can also fit into a 10 distribution. So it's kind of the spectrum 11 of outputs, both at an individual output node 12 level or the collection of output nodes or 13 neurons. 14 Q. And what, in your opinion, 15 Dr. Janet, in Zhang teaches an output 16 statistical summary? 17 A. Numerous times I mention in the 18 same paragraphs, I believe, including 19 Paragraph 175, that Zhang refers to the set 20 of predicted trajectories and confidence 21 levels. 22 Q. So that, in your opinion, is what 23 Zhang teaches the claimed output statistical 24 summary? 25 A. In Paragraph 173, just to start,

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1 Zhang's neural network of trajectory 2 prediction Module 175 is executed to generate 3 a, quote, set of predicted trajectories and 4 confidence levels for each object. 5 That would be the output for each 6 object. In the image data, where the 7 confidence levels correspond to a likelihood 8 of the object performed the predicted 9 behavior, Zhang's, quote, set of predicted 10 trajectories and confident levels, end quote, 11 teaches an output statistical summary. 12 Q. So let's start with the set of 13 predicted trajectories. A set of predicted 14 trajectories is one or more predicted 15 trajectories, right? 16 MR. BARAZESH: Objection to 17 form. 18 A. What exactly are you referring to 19 here? 20 BY MR. GINNINGS: 21 Q. So you just read the sentence that 22 says: Zhang's set of predicted trajectories 23 and confidence levels teaches an output 24 statistical summary. 25 Right?	1 phrase here for a second in Paragraph 172, 2 the italicized language: Predicting an 3 output statistical summary. The next part of 4 the claim says: Characterizing a 5 distribution of user responses. 6 Right? 7 A. Correct. 8 Q. Now, is it your opinion that 9 Zhang's set of predicted trajectories and 10 confidence levels characterizes a 11 distribution of user responses? 12 A. Can you ask that again? 13 Q. Sure. 14 (Simultaneous unreportable crosstalk 15 occurs among parties.) 16 BY MR. GINNINGS: 17 Q. I just -- so the sentence that we 18 were talking about a few minutes ago in 19 Paragraph 173, you state: Zhang's, quote, 20 set of predicted trajectories and confidence 21 levels teaches an output statistical summary. 22 Right? 23 A. Correct. 24 Q. So it's your opinion that the set 25 of predicted trajectories and confidence
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1 A. Yes. 2 Q. So I'm asking about a -- first 3 part of that, a set of predicted 4 trajectories. 5 Is a set of predicted trajectories 6 one or more predicted trajectories? 7 MR. BARAZESH: Objection. Form. 8 Objection. Foundation. 9 A. Well, the set is of the predicted 10 trajectories and confidence levels. 11 BY MR. GINNINGS: 12 Q. Okay. So then is a set of 13 predicted trajectories in confidence levels 14 one or more predicted trajectories and 15 confidence levels? 16 MR. BARAZESH: Objection. Form. 17 Asked and answered. 18 A. They are plural, but the meaning 19 behind them being plural could mean based on 20 a per input basis or it could be that 21 multiple could be outputted. I would have to 22 double-check with Zhang, but the set is of 23 both. 24 BY MR. GINNINGS: 25 Q. Now, just to go back to the claim	1 levels in Zhang meets the claim requirement 2 of an output statistical summary, right? 3 A. Correct. 4 Q. And I want to understand. Is it 5 your opinion, then, that that set of 6 projected -- strike that. Let me start over 7 again. 8 Is it your opinion, then, that 9 Zhang's set of predicted trajectories and 10 confidence levels characterizes a 11 distribution of user responses? 12 A. Yes. As I mentioned before, a 13 little further down, just kind of jumping to 14 Paragraph 174 here, Zhang's training data 15 includes images that are labeled by human 16 labelers. And going back to your question, 17 the plurality of users. 18 Q. In your opinion, Dr. Janet, what 19 does that mean for an output statistical 20 summary to characterize a distribution of 21 user responses? 22 MR. BARAZESH: Objection. Form. 23 A. In Paragraph 175, I say that, 24 quote, the set of predicted trajectories and 25 confidence levels (i.e., output statistical

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1 summary) therefore reflects the distribution 2 of various human labeler responses (i.e., in 3 the terminology of the claim element) 4 characterizing a distribution of user 5 responses indicating possible 6 trajectory/behaviors of the object that human 7 labelers would have identified for the object 8 in the image data and responded with by 9 labeling in the data when presented with the 10 data, just to say expected to be received 11 responsive to presenting the sensor data to a 12 plurality of users, the user response is 13 associated with the particular object. 14 BY MR. GINNINGS: 15 Q. Okay. I understand that's your 16 opinion about what in Zhang meets that claim 17 language. I'm trying to ask kind of a -- you 18 know, a little bit kind of lower-level 19 question of what does the phrase 20 "characterizing a distribution of user 21 responses" mean to a person of ordinary 22 skill? 23 MR. BARAZESH: Objection. 24 Scope. 25 A. Yes, I believe the answer is what	1 rendering your analyses here. 2 A. What claim phrase? 3 Q. "Characterizing a distribution of 4 user responses." 5 MR. BARAZESH: Same objections. 6 Also asked and answered. 7 A. So my plain and ordinary meaning 8 here is reflecting the distribution of the 9 various human labeler responses. 10 MR. GINNINGS: I think before I 11 move on to the next thing here, I 12 think this is probably a good time to 13 go ahead and break for lunch since 14 it's been another hour. So we can go 15 ahead and go off the record. 16 (A lunch recess was held from 17 12:32 p.m. to 1:07 p.m.) 18 BY MR. GINNINGS: 19 Q. Welcome back, Dr. Janet. 20 A. Thank you. 21 Q. Thanks for all your time so far 22 this morning, and as I asked you after the 23 last break, I just want to give you the 24 opportunity if there's any additions or 25 corrections you want to make.
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1 I described. The set of predicted 2 trajectories and confidence levels are your 3 output statistical summary, and because they 4 were formed by annotations from multiple 5 labelers, I believe is the exact -- human 6 labelers, it reflects the distribution of the 7 various human labeler responses (i.e., it 8 characterizes a distribution of user 9 responses). 10 BY MR. GINNINGS: 11 Q. Okay. Again, I understand you're 12 reading to me what in your opinion in Zhang 13 meets that -- meets that claim language. 14 What I'm asking is: What is the 15 plain and ordinary meaning of that phrase 16 that you applied in your analysis? 17 MR. BARAZESH: Objection. Form. 18 Objection. Scope. 19 A. Well, I've offered some plain and 20 ordinary meaning interpretations, I think, on 21 a few things, but what specifically are you 22 asking me about? 23 BY MR. GINNINGS: 24 Q. I'm asking what plain and ordinary 25 meaning of that claim phrase you applied in	1 Anything we talked about so far 2 today? 3 A. Not that I'm aware of. 4 Q. Okay. If anything comes up, just 5 let me know. 6 A. Thank you. 7 Q. I want to switch gears a little 8 bit, and I want to talk about your 9 declaration concerning the '046 Patent, which 10 is Exhibit 8. If you can open that up for 11 me. 12 A. Counsel, are you okay if I pull 13 down the '344? 14 Q. Yes. I don't anticipate going 15 backwards to those, but if we do, I'll -- we 16 can open it back up again. 17 A. Okay. 18 Q. And I suppose if you want to pull 19 them up at the same time, the corresponding 20 petition is Exhibit 3, and the patent is 21 Exhibit 13. 22 A. All right. I have all of those 23 '046 exhibits up, all three. 24 Q. Okay. Great. Can you turn to 25 Exhibit 8 for me then?

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1 A. All right. 2 Q. Now, Exhibit 8 is your declaration 3 concerning the '046 Patent, right? 4 A. Yes. 5 Q. And in your declaration here, you 6 lay out your opinions concerning five 7 different grounds of obviousness. Is that 8 generally correct? 9 A. Give me a second. I'm shuffling 10 things around my screen here. 11 Q. Sure. 12 A. Okay. Sorry. Five grounds, you 13 asked? 14 Q. Yes. 15 A. Yes, that's true. 16 Q. Okay. And just to kind of orient 17 ourselves here, I'm looking at the Table of 18 Contents, PDF Page 2. 19 Do you see Ground 1 on that page? 20 A. Yes, sir. 21 Q. And Ground 1 concerns Claims 1 22 through 19 of the '046 Patent and the Cox 23 reference, right? 24 A. Correct. 25 Q. And then on the next page,	1 of -- your understanding of certain legal 2 standards for patentability, right? 3 A. Yes. 4 Q. And if you turn to PDF Page 18 in 5 Paragraph 34? 6 A. Okay. 7 Q. And from there through the next 8 page, Paragraph 42, you lay out the same 9 obviousness standards that we discussed this 10 morning, right? 11 A. Yes, sir. 12 Q. And did you apply those 13 obviousness standards in rendering your 14 opinions in this declaration? 15 A. Yes, sir. 16 MR. BARAZESH: Object to the 17 form, to the extent it's asking for 18 legal conclusions. 19 A. I applied my understanding of 20 them, as I've articulated here. 21 BY MR. GINNINGS: 22 Q. Okay. Now, I want to turn to 23 Ground 1 in Claim 1 in this declaration, so 24 if you can turn to PDF Page 29 for me. 25 A. Okay.
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1 Ground 2 concerns those same claims but the 2 Cox and Ross references, right? 3 A. Yes, sir. 4 Q. And then Ground 3 concerns 5 Claims 5, 12, and 19, and the Cox and Ellen 6 Bogen references, right? E-L-L-E-N, 7 B-O-G-E-N? 8 A. Yes. 9 Q. And then Ground 4 concerns 10 Claims 1 through 19 and the Cox and Munro 11 references, M-U-N-R-O? 12 A. Correct. 13 Q. And lastly, Ground 5 also concerns 14 those same Claims 1 through 19 and the 15 Ellen Bogen and Munro references, right? 16 A. Yes, sir. 17 Q. Now, if you can turn to PDF 18 Page 17 for me of Exhibit 8? 19 A. I'm there. 20 Q. And do you see the section 21 entitled -- section heading with Legal 22 Standards for Patentability there? 23 A. Yes, sir. 24 Q. And then beginning in Paragraph 27 25 and continuing on, you lay out a number	1 Q. And then on this page, the -- you 2 see the heading for -- Heading A, Ground 1, 3 Claims 1 through 19 are obvious over Cox? 4 A. Yes, sir. 5 Q. So in this section, you provide 6 your opinions that Claims 1 through 19 of the 7 '046 Patent are obvious over the Cox 8 reference, right? 9 A. Correct. 10 Q. Now, -- and then the next page, 11 PDF Page 30, you begin your discussion of 12 Claim 1 there, right? 13 A. Yes, sir. 14 Q. And in Paragraph 69, on that page, 15 you state: In my opinion, Cox renders 16 obvious Claim 1, right? 17 A. Correct. 18 Q. Now, I will spare you the skipping 19 around, but in the legal standards section, 20 one of the factors that you listed that 21 you're required to consider in an obviousness 22 analysis is the differences between the prior 23 art and the claims at issue. 24 Do you recall us talking about 25 that factor this morning?

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1 A. Yes. 2 MR. BARAZESH: Objection. Form. 3 And objection to the extent calling 4 for any legal conclusions. 5 A. I remember the discussion. 6 BY MR. GINNINGS: 7 Q. Okay. So did you consider -- 8 strike that. 9 In providing your opinions here in 10 Ground 1, and specifically with respect to 11 Claim 1 of the '046 Patent, did you consider 12 the differences between the Cox reference and 13 Claim 1 of the '046 Patent? 14 MR. BARAZESH: Same objections. 15 A. I considered what I assumed 16 someone that doesn't have the context that a 17 person of ordinary skill would have could 18 potentially look at that and say that there's 19 a difference between the prior art and the 20 claim terms. 21 BY MR. GINNINGS: 22 Q. Okay. In your opinion, what are 23 the differences from the perspective of a 24 person of ordinary skill in the art between 25 Claim 1 of the '046 Patent and the Cox	1 the patents at issue is terms like "users" 2 and "road users" and "subjects" 3 and -- anyway, you know especially when you 4 kind of look at other invalidating prior art. 5 So just to clarify how the "one or 6 more users" piece of that would have been 7 understood by a person of ordinary skill, I 8 go on to say: The training objects may be 9 images of human faces. That is a person of 10 ordinary skill would have understood at least 11 found obvious that the people/faces in the 12 images form one or more users as claimed. 13 This is at least because the people/faces 14 reflect people who are partaking in an 15 activity or using an object, for example, as 16 a road user within the context of driverless 17 vehicles, or a manufacturing facility user 18 within the context of machine vision for 19 manufacturing, both of which discussed by 20 Cox. 21 BY MR. GINNINGS: 22 Q. Okay. Now, the portion you were 23 just reading from is from Paragraph 71, 24 right? 25 A. Correct. I apologize if I didn't
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1 reference? 2 MR. BARAZESH: Objection. Form. 3 A. And are we looking at Claim 1 in 4 general, or are we looking at an element of 5 Claim 1? 6 BY MR. GINNINGS: 7 Q. That's a fair point, and maybe 8 it's easier to go element by element. So why 9 don't we start with the preamble. The 10 discussion to that begins on Paragraph 70, 11 right? 12 A. Yes. 13 Q. What are the differences between 14 the Cox reference and the preamble of Claim 1 15 of the '046 Patent? 16 MR. BARAZESH: Objection. Form. 17 A. In Paragraph 71, I discuss that 18 Cox describes, quote: A database of training 19 objects where, quote, each of the training 20 objects may include or consist essentially of 21 a digital image including a subject person, 22 equating that to storing a plurality of 23 images, each image displaying one or more 24 users. 25 One of the challenges I think with	1 indicate that. 2 Q. No, that's fine. 3 Above Paragraph 71, do you see the 4 section heading for Element 1[a] there? 5 A. Yes. 6 Q. So -- and we were -- apologize if 7 it wasn't clear. And I was asking about 8 the -- we'll start with the preamble. We'll 9 get to 1[a] in just a minute. 10 So with respect to the preamble, I 11 believe your opinion there is in 12 Paragraph 70, and then there's an annotated 13 figure after Paragraph 70. 14 A. Fair enough. I apologize. I 15 flipped ahead. 16 Q. It's fine. 17 A. Right. The preamble, looking at 18 the exact language because I neglected in a 19 couple of these declarations to include the 20 exact language at the heading, the preamble 21 being: A computer-implemented method 22 comprising. And the -- and that's what the 23 preamble says in the '046 Patent, Claim 1. 24 And this maps, as I articulate in 25 the paragraph, that the -- so the

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1 instructions are executed by a computer to 2 implement Cox's techniques which map to the 3 preamble which is a computer-implemented 4 method. 5 So I don't really see differences 6 here other than maybe the terminology, but 7 the meaning is the same. 8 Q. And then I apologize for having to 9 repeat it, but for Element 1[a], what are the 10 differences between Element 1[a] of Claim 1 11 of the '046 Patent and the Cox reference? 12 MR. BARAZESH: Objection. Form. 13 A. I don't really see any 14 differences. I think it's very clear to a 15 person of ordinary skill that the 16 computer -- a computer that implements Cox's 17 techniques maps to the preamble which states 18 a computer-implemented method. 19 BY MR. GINNINGS: 20 Q. And I -- I apologize. Now I'm 21 asking about Element 1[a], and your opinion 22 for that appears in Paragraph 71. Okay? 23 A. All right. I apologize. All 24 right. So we are off preamble. We are on 25 1[a]?	1 Paragraph 71, I should say, a person of 2 ordinary skill in the art would have 3 understood or at least found obvious that the 4 people/faces in the images form one or more 5 users as claimed. 6 And then I provide a rationale for 7 that, that: It's at least because the 8 people/faces reflect people who are partaking 9 in an activity or otherwise using an object, 10 for example, as a road user within the 11 context of a driverless vehicle or vehicles 12 plural or a manufacturing facility user 13 within the context of machine vision for 14 manufacturing. Then I cite to Paragraphs 7 15 through 10, 17 and 18, 29, 44, and 56 in Cox. 16 BY MR. GINNINGS: 17 Q. Now, the next element is 18 Element 1[b] which is -- your opinion there 19 starts at the bottom of PDF Page 22, right? 20 A. Correct, yes. 21 Q. And it continues on to PDF 22 Page 23, right? 23 A. Yes. 24 Q. What are the differences between 25 the Cox reference and Element 1[b] of
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1 Q. Yes. 2 A. Okay. So I will repeat what I 3 mentioned before -- 4 Q. I apologize for probably the only 5 time I would interrupt you, but I actually 6 want to ask the question first -- 7 A. Go ahead. 8 Q. -- so that it's clear. So I will 9 go ahead and ask the question. 10 What are the differences between 11 Element 1[a] of Claim 1 of the '046 Patent 12 and the Cox reference? 13 MR. BARAZESH: Objection. Form. 14 A. As I mentioned before, the 15 differences, if you want to call it that, are 16 superficial. The Cox 1[a] says: Storing a 17 plurality of images, each image displaying 18 one or more users. 19 And Cox describes: A database of 20 training objects where each of the training 21 objects may include or consist essentially of 22 a digital image, including a subject person. 23 So the language may be slightly 24 different, but as I indicate at the bottom of 25 Paragraph 71 or in the middle of	1 Claim 1? 2 MR. BARAZESH: Objection. Form. 3 A. As before, it's just different 4 phrasing. I don't really consider there to 5 be a difference here. 6 BY MR. GINNINGS: 7 Q. What different phrasing are you 8 referring to? 9 A. Well, the patent in Claim 10 Element 1[b] says: Generating training data 11 from the plurality of images that generating 12 comprising for each image. 13 And in Cox, the purported novelty 14 of Cox is the crowd sourcing to generate 15 training data to, quote, dramatically improve 16 the quality, quantity, and depth of 17 annotation data available for learning. 18 Cox discloses that multiple 19 training images are presented to human 20 annotators who, in turn, annotated the 21 training images. So this is what, in my 22 opinion, is really not different from 23 generating training data from the plurality 24 of images, the generating comprising for each 25 image.

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1 Q. The next element, Element 1[b-i], 2 your opinions there begin in Paragraph 73, 3 right? 4 A. And what are the differences 5 between this element and the Cox reference. 6 MR. BARAZESH: Objection. Form. 7 A. Let me 1[b-i] says: Sending the 8 image to a plurality of human observers. 9 Each human observer presented with a request 10 to answer a question about a state of mind of 11 a user in the image. 12 The phrasing in Cox is not 13 identical to that, but the meaning really is. 14 Cox discloses a crowd source data acquisition 15 workflow that involves sending and presenting 16 training images for annotating -- for 17 annotation to multiple human annotators 18 (i.e., sending the image to a plurality of 19 human observers) the multiple human 20 annotators. 21 The images are presented to the 22 human annotators on, quote, training devices 23 170, which I cite to Cox, Paragraphs 10 and 24 29. 25 I also go on to say, the other	1 answer a question about an emotion of the 2 user in the image (i.e., from the patent) 3 each human observer presented with a request 4 to answer a question about a state of mind of 5 a user in the image. 6 In my opinion, this disclosure of 7 emotion in Cox is consistent with the 8 '046 Patent's description of state of mind. 9 So Cox uses emotion. The '046 10 Patent says "state of mind," and this further 11 maps to intention, awareness, personality, 12 state of consciousness, level of tiredness, 13 aggressiveness, enthusiasm, thoughtfulness or 14 another characteristic of the internal mental 15 state of a user in image quoting the 16 patent '046. 17 BY MR. GINNINGS: 18 Q. So is it your opinion, Dr. Janet, 19 that any difference between this estimate and 20 the Cox reference just come down to word 21 selection? 22 MR. BARAZESH: Objection. Form. 23 Misstates testimony. 24 A. I believe that there's context, 25 but I cite everything that I feel is
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1 part of that: Each human observer presented 2 with a request to answer a question about a 3 state of mind of a user in the image as its 4 written in the '046 Patent, but Cox discloses 5 the same thing that when human annotators are 6 presented with an image, they were asked a 7 question about the image, for example, as to 8 what emotion might correspond to a person 9 shown in the image. 10 And I include in a parenthetical: 11 A participant may be shown in Image 120 of 12 all or a portion of a person's face and asked 13 to select an emotion that corresponds to the 14 image, for example, jealous, panicked, 15 arrogant or hateful. 16 So I say in my opinion, when 17 annotators are asked to select an emotion 18 that corresponds, they are being asked, 19 quoting the patent, to answer a question 20 about the state of mind of the subject. 21 So the phraseology -- I'm sorry. 22 The phrasing may be a little different, but 23 the meaning is the same. And I go on to say: 24 Thus the annotators (i.e., human observers) 25 are presented with an image and asked to	1 necessary to say that they mean the same 2 thing. 3 BY MR. GINNINGS: 4 Q. The next Element 1[b-ii] on PDF 5 Page 35, can you turn there for me. 6 A. I'm there. 7 Q. What -- sorry. Strike that. 8 What are the differences between 9 Element 1[b-ii], Claim 1 of and the Cox 10 reference? 11 MR. BARAZESH: Objection. Form. 12 A. I'm sorry. I'm getting a little 13 lost in my own document here. Which element 14 are we referring to? 15 BY MR. GINNINGS: 16 Q. Element 1[b-ii]. 17 A. 1[b-ii]. Okay. Sorry. 18 Q. Which I don't know if it would be 19 helpful for me to put it on the screen for 20 you or not? 21 A. No. It's okay. 22 Q. Okay. 23 A. I just need to stay on the range. 24 Q. All right. So let me just go 25 ahead and re-ask the question then.

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1 What are the differences between 2 Element 1[b-ii] of Claim 1 and the Cox 3 reference? 4 MR. BARAZESH: Objection. Form. 5 A. As I mention in Paragraph 76: The 6 training devices used by the annotators to 7 input annotations on images, quote, 8 transmitted classification data, end quote, 9 reflecting the annotations, quote, to the 10 central server 150, end quote, and the, 11 quote, classification data is received from 12 the human annotators maps to -- from the '046 13 Element 1[b-ii] receiving from each of the 14 plurality of human observers a response 15 representing a judgment by the human observer 16 of the state of mind of the user in the 17 image. 18 So I go on to say: In my opinion, 19 the classification data represents a judgment 20 by the human observer of the state of mind of 21 the user in image because the annotations of 22 the classification data are human judgments 23 provided by the human annotators of an 24 emotion of a person in the image. 25	1 BY MR. GINNINGS: 2 Q. Yeah. 3 A. Or just the elements that we have 4 reviewed so far? 5 Q. Categorically with respect to 6 Claim 1. If you need to go through it and 7 delineate, by all means, but I'm going to try 8 and short-circuit it a little bit here. 9 A. Okay. 10 MR. BARAZESH: Same objection. 11 A. I mention in Paragraph 77 12 regarding Claim 1[b-iii] that Cox discloses 13 that psychometric data summarizes how human 14 annotators annotate training images because 15 it includes, quote, response times for 16 classifying one or more features, accuracy of 17 feature classification, relative to the label 18 that was originally put on it, and/or the 19 presentation time (i.e., the amount of time 20 presented to each annotator) of one or more 21 training objects. 22 Moreover, in my opinion, because 23 these values are a collection of numerical 24 measurements, a person of ordinary skill 25 would have recognized that such values form
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1 BY MR. GINNINGS: 2 Q. So you read me a good chunk of 3 Paragraph 76, but I want to understand is 4 what is the difference between this claim 5 element and the Cox reference? 6 MR. BARAZESH: Objection. Form. 7 Asked and answered. 8 A. To me, it boils down to phrasing, 9 but phrasing two different ways the same 10 thing. 11 BY MR. GINNINGS: 12 Q. Maybe I can short-circuit this a 13 little bit. 14 Is it your opinion, Dr. Janet, 15 that any differences between -- strike that. 16 Still going to try to 17 short-circuit, but I'm going to ask a better 18 question. 19 Is it your opinion, Dr. Janet, 20 that any differences between Claim 1 of the 21 '046 Patent and the Cox reference come down 22 to phrasing? 23 MR. BARAZESH: Objection. Form. 24 A. Categorically with regards to 25 Claim 1?	1 statistics. 2 So on one hand, the term 3 "numerical values" is used, and on the other 4 hand, "statistics" is used, but there are 5 outputs from the -- let's just say neural 6 network and Cox describes -- is describing 7 psychometric data, and what's explained there 8 is the summary statistics to characterize the 9 human observer responses. 10 So the summary statistics 11 basically -- you know, interpretation mapped 12 to Cox is given some examples where there are 13 response curves, item response curves, or 14 IRCs, across large populations of humans. 15 These response curves present an analysis of 16 collected numerical measurements, and we 17 talked a little bit earlier about what 18 constitutes summary statistics. And the IRCs 19 or item response curves are your summary 20 statistics. 21 So in that situation, it may less 22 be -- I think that the phrasing is different 23 and the meaning is the same, but I think 24 there's a little bit more context with 25 regards 1[b-iii].

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1 And then continuing on, Cox, you 2 know, again, regarding the psychometric 3 analysis, discloses human-weighted loss 4 function based at least in part on the 5 classification data (i.e., human annotations 6 and the psychometric data). 7 So these images are given labels. 8 The labels -- I might not be using the exact 9 term, but I think that is -- so the labels 10 are basically your central tendency, for lack 11 of a better word, established by -- that 12 could be established a variety of ways. That 13 could be established statistically, you know, 14 just like through a consensus. It could be 15 an expert. But that's your central tendency. 16 And then Cox is measuring the 17 feedback, these annotations, to gauge the 18 agreement with that label. And you can get 19 standard deviation or variance. Variance 20 applies to accuracy. 21 There are a variety of other 22 things that would apply to the quote -- the 23 term "difficulty." But the outcome there is 24 that it's still generating summary 25 statistics.	1 have it open. 2 (Exhibit 16 was marked for 3 identification.) 4 A. I have it open. 5 BY MR. GINNINGS: 6 Q. Have you seen Exhibit 16 before? 7 A. Yes. 8 Q. What is Exhibit 16? 9 A. Exhibit 16 is the, what we're 10 generally calling the Cox reference. 11 Q. And just so the record is clear, 12 Exhibit 16 is Tesla's Exhibit 1005 in the 13 1575 IPR concerning the '046 Patent. 14 I believe it's also an exhibit in the other 15 four IPRs, but this particular copy is that 16 one. 17 Dr. Janet, did you review 18 Exhibit 16 in preparation for your deposition 19 today? 20 A. Yes. 21 Q. Now, we talked a little -- a few 22 minutes ago about the Cox reference when we 23 were talking about your opinions concerning 24 Claim 1 and Ground 1 in this IPR concerning 25 the '046 Patent, right?
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1 You have a distribution of values. 2 The output of that -- let's just say a simple 3 neural network where the state vector 4 machine, the kernel-based approach, and that 5 distribution represents the set of possible 6 human annotator judgments, for example, 7 intent or state of mind. So a little bit 8 more context than just different phrasing, 9 but they map well. 10 I might have discussed other 11 mappings in subsequent claim elements, but, 12 you know, is there anything you have a 13 question about so far? 14 Q. I don't have any questions about 15 your answer, no. 16 A. Okay. 17 Q. Let's -- since we have been 18 talking about the Cox reference here a little 19 bit, I'm going to ask some questions about 20 it. So I'm going to go ahead and mark it as 21 an exhibit as well and put it here in chat in 22 just a second? 23 All right, Dr. Janet. I put 24 Exhibit 16 in the chat. If you can download 25 that and open it and let me know when you	1 A. Yes, I believe so, if I understand 2 your question properly. 3 Q. Now, Cox is generally directed to 4 machine learning processes for detecting 5 faces and images, right? 6 MR. BARAZESH: Objection. Form. 7 Misstates the evidence. 8 A. Well, Cox describes multiple 9 applications. 10 BY MR. GINNINGS: 11 Q. Is detecting faces one of those? 12 A. Detecting faces is certainly one 13 or a part of them, yes. 14 Q. And what other applications has 15 Cox described besides detecting faces? 16 A. To going backwards a little bit, 17 Paragraph 67, the goal of Cox's machine 18 learning techniques is to, quote, better 19 mimic human performance, end quote. And then 20 go on to say: Cox touts that techniques 21 applied to, quote, driverless automobile 22 applications, citing Paragraph 56. 23 Now, if you look at Paragraph 56, 24 Cox talks about: Embodiments of the 25 invention may be applied to face image, pair

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1 matching, face verification, face 2 identification, fingerprint verification 3 which has nothing to do with faces, 4 fingerprint verification, iris verification, 5 iris identification, gait recognition, just 6 to say how somebody walks; handwriting 7 recognition, novel modality matching and 8 multibiometric fusion. 9 Important application areas may 10 also benefit from embodiments of the 11 invention, including video surveillance, 12 physical access and authentication, image and 13 video forensics, photo tagging for social 14 media, which is along the lines of presumably 15 of the face recognition, but there are other 16 things here, obviously, including 17 computational photography, human computer 18 interaction for ordinary users and the 19 disabled, video entertainment games, 20 robotics, which is to a large extent one of 21 the things we're talking about here. Image 22 analysis for biomedical applications, 23 intelligent content archiving, driverless 24 and/or semiautonomous automobiles and machine 25 vision for manufacturing.	1 MR. BARAZESH: Objection. Form. 2 Asked and answered. 3 A. I can go through Cox and see if 4 there are any other places that allude or 5 refer back to Paragraph 56. But Paragraph 56 6 is a bit of a gate you pass through to 7 recognize that what is taught in Cox has 8 these applications. The principles are 9 described in a couple of examples, but the 10 applications are, at a minimum, clear in 11 Paragraph 56. 12 And just because they're not 13 elaborated on somewhere else in the patent 14 doesn't mean to me as a person of ordinary 15 skill that Cox didn't really mean it. 16 Paragraph 56 says that the applications 17 include this list, and the principles of the 18 approach are described subsequently but 19 mostly on pictures of faces. You can only 20 fit so much in a document. 21 BY MR. GINNINGS: 22 Q. Is it your opinion, Dr. Janet, 23 that a person of ordinary skill in the art 24 could take the disclosure of Cox and apply it 25 to every single application listed here in
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1 Q. And just so I'm clear, you're 2 reading from Paragraph 56 of Cox; is that 3 correct? 4 A. Correct, that's right. 5 Q. Other than Paragraph 56, is there 6 anything in Cox that describes any 7 application other than detecting faces? 8 MR. BARAZESH: Objection. Form. 9 A. Well, this is the foundational 10 utility of what else is taught in Cox. So 11 the principles, you know, whether the 12 examples may, for example, just focus on 13 faces or occluded images or partial images of 14 such faces. But the principles are the same, 15 and I think this is very clear from 16 Paragraph 56. Whether it's applied to just 17 simple facial recognition to fingerprint 18 analysis to document comparisons, robotics 19 applications, which, again, is a very large 20 bag, and driverless/semiautonomous 21 automobiles, the principles are the same. 22 BY MR. GINNINGS: 23 Q. So other than Paragraph 56, is 24 there anything in Cox that describes any 25 application other than detecting faces?	1 Paragraph 56 without anything outside of the 2 reference? 3 MR. BARAZESH: Objection. Form. 4 Also objection to the extent it's 5 calling for any speculation. 6 A. Yeah, I think that applying it to 7 or analyzing how it can be applied to all of 8 those applications is outside the scope of 9 the work I performed in this effort. 10 I don't have a reason to doubt it, 11 but I only analyzed it in the perspective of 12 driverless vehicles and what those driverless 13 vehicles would see which could include faces, 14 to understand intent or behavior. 15 BY MR. GINNINGS: 16 Q. Just so I'm -- make sure I 17 understand your answer correctly, is it your 18 opinion, Dr. Janet, that a person of ordinary 19 skill in the art could take the disclosure of 20 Cox and apply it to the particular 21 application of driverless vehicles without 22 anything outside the reference? 23 MR. BARAZESH: Objection. Form. 24 A. Without anything outside of the 25 reference?

Page 122 1 BY MR. GINNINGS: 2 Q. Yes. 3 A. Well, we're referring to the 4 '046 Patent right now, correct? And the 5 grounds that I have include, for example, Cox 6 by itself and Ground 1, and I would not have 7 put Cox in by itself if I didn't believe that 8 a person of ordinary skill would learn from 9 Cox and be able to apply it to driverless 10 vehicles, particularly in the context of the 11 '046 Patent where intent is sought to 12 understand the next steps basically for a 13 vehicle. 14 Q. Can you turn to PDF Page 4 of 15 Exhibit 16 for me, Dr. Janet? 16 A. Let me find it somewhere on my 17 screen here. PDF Page 4? Is that what you 18 said? 19 Q. Yes. 20 A. This is the Cox reference? 21 Q. Correct. 22 A. Okay. 23 Q. And you see Paragraph 6 that 24 starts at the bottom of that page and 25 continues on to the next page?	Page 124 1 A. Well, you asked me for the 2 definition of a term in Paragraph 6. I'm 3 looking through Cox because I just want to 4 make sure where it's defined -- okay. So in 5 Paragraph 27, it says: The process of 6 determining the accuracy curves per image so 7 as to design more efficient tests is also 8 referred to herein as item response testing. 9 And the -- let me do my best to 10 provide you with the -- so I believe this is 11 consistent, and of course I defer to Cox for 12 if -- if the -- if it provides a variation of 13 this definition. But basically, it's the 14 probability that a subject like an annotator 15 would correctly classify or respond to a 16 particular item which would be, you know, the 17 content of an image. And it can be a 18 function of that subject's latent ability, 19 but ultimately it's the probability that the 20 annotator will correctly classify according 21 to what's labeled there. 22 So, for example, if you look in 23 Cox -- let me take a look at some of the 24 figures. And I have to go back and remember 25 which figure it is, but Paragraph 29 talks
Page 123 1 A. Yes, I do. 2 Q. Okay. And Paragraph 6 begins: 3 A variety of well-known techniques exist for 4 measuring human performance, including 5 reaction time, measurement (i.e., how quickly 6 is the label generated) the generation of 7 psychophysical curves under stimulus 8 degradation (e.g., how does performance fall 9 off as the image becomes less clear), item 10 response curves across large populations of 11 humans (e.g., how consistent are judgment 12 across a population), and many other 13 techniques falling under the umbrella of the 14 field of psychophysics. 15 A. Yes, sir. 16 Q. One of the things that was in that 17 sentence that we just -- that I just read 18 there was the mention of item response 19 curves, right? 20 A. Right. 21 Q. What is an item response curve? 22 A. Well, I just want to keep it 23 consistent here. 24 Q. You're still looking in 25 Paragraph 6 of the Cox reference, right?	Page 125 1 about a psychometric function 360 related to 2 the accuracy of the annotation, like I just 3 said, per the condition and/or an item 4 response curve for each of the training 5 objects. 6 And let me go back to the figure. 7 That was Paragraph 29. So if you look in 8 Figure 3, you can see that Item 360 is an 9 example of an IRC. 10 Q. So Item 360 in Figure 3. Do I 11 have that right? 12 A. Yeah, so Paragraph 29, a 13 psychometric function of 360 related to 14 accuracy of the annotation per condition 15 and/or an item response curve 370 for each of 16 the training objects. So 370 is the IRC and 17 the accuracy, I guess kind of an overlayment, 18 is shown on 360. 19 Q. So the -- just so I'm clear, so 20 the item labeled 370 in Figure 3 is an 21 example of an item response curve? 22 A. In Cox -- let me go back. Cox 23 refers to Item 370 -- 360 as the psychometric 24 function related to the accuracy. So 25 it's -- you're seeing the accuracy, and

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1 you're seeing the psychometric function. 2 And then you have the item 3 response curve, which is 370 for, you know, a 4 training object. 5 Q. Okay. And if I'm looking at this 6 right, the item response curve 370 in 7 Figure 3 has two axes, right? 8 A. Correct. 9 Q. And one of those is ability, 10 right? 11 A. Right, or latent ability, but yes. 12 Q. And is that the ability of the 13 annotator? 14 A. It -- in the context of Cox, I 15 would have to double-check, but I would say 16 that in principle, in general, that would be 17 ability or latent ability, yes, the 18 annotator, by the way, if -- was that your 19 question? 20 Q. Yes. 21 A. Was this the annotator's latent 22 ability? Yes. 23 Q. Yes. Sorry. Okay. And the other 24 axis is accuracy, right? 25 A. Correct.	1 Q. So Paragraph 29 talks about 2 displaying psychometric data to analyze, 3 among other things, an item response curve, 4 right? 5 MR. BARAZESH: Objection. Form. 6 A. It just says it may be displayed 7 to analyze, for example, a response time. 8 You know, the display itself can be used for 9 analysis. 10 BY MR. GINNINGS: 11 Q. Okay. Other than that displaying, 12 what does Cox describe doing with an item 13 response curve? 14 MR. BARAZESH: Objection. Form. 15 A. Is there something in particular 16 that you're referring to in my declaration 17 about this? 18 BY MR. GINNINGS: 19 Q. I'm just -- I just want to get 20 your understanding based on your study of 21 Cox, what Cox describes the use of item 22 response curves in its disclosure being. 23 MR. BARAZESH: Objection. Form. 24 Objection. Scope. 25 A. I'm happy to discuss anything
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1 Q. And that's the accuracy of the -- 2 strike that. 3 What is accuracy in that -- on 4 that axis? 5 A. Well, accuracy would typically be 6 related to variance. So what's the average 7 squared difference between the annotator's 8 labels and the correct label. 9 Q. Can you go back to Paragraph 29 10 for me? 11 A. In Cox? What PDF page is that? 12 Q. It starts on PDF Page 16. 13 A. Okay. 14 Q. And continues on to Page 17. The 15 last sentence of Paragraph 29, which I 16 believe you read a little earlier, says: The 17 psychometric data may be displayed to 18 analyze, (e.g., response time per annotator 19 in a graph 350). The psychometric function 20 360 related to the accuracy of the annotation 21 per condition and/or an item response curve 22 370 for each of the training objects (i.e., 23 the presented images). 24 Right? 25 A. Right.	1 that's in my declaration, which essentially 2 defines the scope of what I looked at with 3 regards to Cox. 4 I did mention that accuracy and 5 some of these other variables, like latency 6 and stuff like that, could play a role in how 7 the data is characterized, for example, the 8 difficulty. 9 If I have a large variance, then I 10 have a potentially low accuracy or, you know, 11 however they're related, depending on 12 somebody -- how somebody is looking at it. 13 But let's just assume that. 14 That might dictate for that 15 particular type of image that it's 16 challenging for humans to identify what's 17 important -- to identify what's -- the label 18 for that, for lack of a better word. 19 So I end up with a human-weighted 20 loss function wherein if something is more 21 difficult for the annotators to extract and 22 identify properly the content of that image, 23 or if not the content, then the state of mind 24 or whatever metric is being used, that the 25 neural network or state vector -- support

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1 vector machine or SVM, or whatever means is 2 used, but let's just pick a simple neural 3 network, that the error for that particular 4 image wherein annotators had difficulty, 5 again, identifying what it is or the state of 6 it, the neural network spins more energy or 7 effort to learn that because it makes it 8 difficult -- it would have otherwise made it 9 difficult for it to see somewhere down the 10 road. 11 You end up with these phenomenon 12 called overfitting, and usually 13 that's -- overcoming that is a term called, I 14 think, "regularization." And Cox might even 15 mention that. 16 But in order to do that, you would 17 apply a human-weighted loss function in this 18 situation so that an error at the output of 19 that neural network during training, its 20 portion that's propagated back might get 21 amplified versus a different image where 22 there wasn't much difficulty, a smaller 23 portion might get propagated back and change 24 the weights less. 25	1 minutes. I'm not sure if this would 2 be a good time to have a break or -- 3 MR. GINNINGS: I've got a couple 4 of more questions about the IRCs, and 5 then I think once I'm done with that, 6 maybe we can take a break. It 7 shouldn't take more than a few 8 minutes, but thanks for the heads up. 9 BY MR. GINNINGS: 10 Q. Dr. Janet, does Cox discuss 11 storing item response curves in a database? 12 MR. BARAZESH: Objection. Form. 13 A. I'm going to also ask, are you 14 referring to a particular section of my 15 declaration? 16 BY MR. GINNINGS: 17 Q. I'm asking about the Cox 18 reference, Exhibit 16, which you said you 19 reviewed in preparation for your deposition 20 today. 21 And my question is: Does anything 22 in Cox describe storing an item response 23 curve in a database? 24 MR. BARAZESH: Objection. Form. 25 Scope.
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1 BY MR. GINNINGS: 2 Q. I appreciate that answer, but it 3 doesn't answer my question. So I want to be 4 clear about what I'm asking here. 5 A. Uh-huh. 6 Q. What does Cox describe the use of 7 item response curves being in its disclosure? 8 MR. BARAZESH: Objection. Form. 9 Asked and answered. 10 A. Yeah, and I'm happy to focus on a 11 particular aspect of my declaration, which I 12 think is what ultimately defines a scope of 13 what I looked into. 14 I gave you a general answer as to 15 how Cox uses the information that could be 16 represented by an IRC or an IRT. But in 17 general, I don't think I recall off the top 18 of my head -- at least I'm happy to look 19 through my declaration. If you want to, I 20 can go back to that as far as every possible 21 way that an IRC is used by Cox. 22 MR. BARAZESH: I don't want to 23 interrupt the line of questioning, but 24 we have been going, you know, an hour 25 and -- just over an hour and ten	1 A. I reviewed it. I did not memorize 2 it. But you know what? I'm happy to look 3 through Cox to answer your question. 4 Paragraph 9, for example, 5 describes a database includes or consists 6 essentially of a storage medium populated 7 with stored computer records specifying for 8 each of a plurality of training objects. 9 One, classification data comprising 10 annotations received from a plurality of 11 human annotators; and two, psychometric data 12 characterizing the annotation of the training 13 object by the plurality of human annotators. 14 So I would say there's one example 15 of -- with the psychometric data which would 16 or could include the IRC being stored. 17 BY MR. GINNINGS: 18 Q. Just so I'm clear, is it your 19 testimony, Dr. Janet, that Paragraph 9 of Cox 20 teaches storing IRCs in a database? 21 MR. BARAZESH: Objection. 22 Scope. 23 A. I will also point out that 24 Claim 11 says that a system for data 25 classification and identification in the

Page 134 1 system comprising a database of training 2 objects, the database comprising a storage 3 medium populated with stored computer records 4 specifying for each of a plurality of 5 training objects. 6 One, classification data, 7 comprising annotations received from a 8 plurality of human annotators; and two, 9 psychometric data characterizing the 10 annotation of the training object by the 11 plurality of human annotators. 12 I mentioned before that an item 13 response curve -- I don't remember the exact 14 language, but we can look at the 15 transcript -- plots the probability that a 16 subject or an annotator would correctly 17 classify the -- you know, a particular image 18 which is described in the psychometric data 19 characterizing the annotation of the training 20 objects by the plurality of human annotators. 21 Does Cox actually say I'm storing 22 the IRCs? I don't know, unless I mention it 23 in my report. But just a cursory look here 24 says that Cox is at least storing these 25 probabilities of -- that the annotators	Page 136 1 BY MR. GINNINGS: 2 Q. Okay. Now, when we looked a few 3 minutes ago at the Figure 3 that was an 4 example of an IRC, do you recall one of the 5 axes being the ability of the annotator? 6 A. Yeah, that would be the latent 7 ability typically, but, yeah, it's just 8 called ability here. 9 Q. Okay. Now, in the language you 10 just mentioned a few minutes ago in 11 Paragraph 9 of Cox, is there any mention 12 about the annotator's ability being stored in 13 that database? 14 MR. BARAZESH: Objection. Form. 15 Scope. 16 A. I would have to, again, look 17 through Cox just to be able to attempt to 18 answer your question. The scope of my 19 research was documented in my declaration, 20 and I think you're asking me to do something 21 that, you know, would require a bit of time. 22 If you want to, I can take that time. 23 BY MR. GINNINGS: 24 Q. My question was specific to 25 Paragraph 9 to the sentence that you read a
Page 135 1 correctly classify these images per the 2 labels that are provided them. 3 BY MR. GINNINGS: 4 Q. So you don't know if Cox actually 5 says storing IRCs in a database? 6 MR. BARAZESH: Objection. Form. 7 Objection. Misstates testimony. And 8 scope. 9 A. So there's a -- there's a general 10 equivalence between the item response curve, 11 as I mentioned before, and the probability 12 that a subject annotator -- I mean, a subject 13 or an annotator would correctly identify, per 14 the label that's given that. And, again, 15 this is mentioned at least twice in Cox that 16 that probability information that is used 17 to -- you know, it is basically the IRC is in 18 fact stored. 19 By the way, there are several 20 other references as I'm looking through Cox 21 to the use of storage. It's pretty heavily 22 embedded, the term "storage" and "databases." 23 But at least those two address the core of 24 what would be an IRC. 25	Page 137 1 few minutes ago about the database that's 2 described in Paragraph 9. Can you turn to 3 that for me? 4 A. What PDF is Paragraph 9, PDF page? 5 Q. Page 6. 6 And do you see the sentence that 7 begins: The database includes or consists 8 essentially of? 9 A. Yes. 10 Q. Do you recall discussing that 11 sentence a few minutes ago? 12 A. Yes. 13 Q. Is there anything in that sentence 14 that talks about storing the annotator's 15 ability in that database? 16 MR. BARAZESH: Objection. Form. 17 Scope. 18 A. The -- there are two items 19 mentioned regarding the records that are 20 stored for each of a plurality of training 21 objects, these images. One of them is 22 classification data comprising annotations 23 received from a plurality of human 24 annotators. So that's -- you know, it's 25 pretty simple numbers.

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1 The second one is psychometric 2 data. And psychometric data, of course I 3 defer to Cox's definition here, but, you 4 know, this is -- this would include, you 5 know, annotator reaction times, difficulty, 6 and a slew of other perceptual metrics. And 7 that difficulty I think is -- or basically 8 the blanket term "psychometric" includes what 9 you're asking about. 10 BY MR. GINNINGS: 11 Q. So it's your -- it's your 12 understanding, then, Dr. Janet, that Cox's 13 psychometric data includes the annotator's 14 latent ability? 15 MR. BARAZESH: Objection. Form. 16 And objection. Misstating testimony. 17 A. The latent ability term is not 18 mentioned here. I acknowledge that, that 19 it's not explicitly stated here. However, 20 the term "psychometric data," which it covers 21 all sorts of perceptual metrics, may include 22 ability. It may be related to ability, at 23 least. I should say that the fact that it's 24 displayed on the plot on -- I think it 25 was -- was it Figure 3 -- shows there's some	1 in the middle of the page? 2 A. I do. 3 Q. Okay. I want to walk through this 4 and I want to get an understanding of some of 5 the terminology that's used here and in other 6 parts of the Cox reference. So I will just 7 start reading here from Paragraph 7. At the 8 beginning it says: In an aspect, embodiments 9 of the invention feature a 10 computer-implemented method for data 11 classification and identification. Data 12 corresponding to a plurality of training 13 objects is provided over a computer network 14 to a plurality of training devices each 15 associated with one of a plurality of human 16 annotators. 17 Right? 18 A. Yeah. 19 Q. Each of the training objects 20 includes or consists essentially of features 21 for a classification. 22 Right? 23 A. Correct. 24 Q. And the training objects are 25 displayed on a display of each of the
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1 sort of recordkeeping of ability. You're 2 putting that on the axis and the accuracy on 3 the ordinate. If I don't store that, I'm not 4 really sure how I map what's on the ordinate 5 to what's on the axis. 6 MR. GINNINGS: Why don't we go 7 ahead and take another short break and 8 go off the record. 9 (A brief recess was held from 10 2:34 p.m. to 2:41 p.m.) 11 BY MR. GINNINGS: 12 Q. Welcome back, again, Dr. Janet. 13 A. Thank you. 14 Q. As I've asked you after each of 15 the prior breaks, is there any additions or 16 corrections you want to make about anything 17 we've talked about so far today? 18 A. No, not so far as I know. 19 Q. Do you still have the Cox 20 reference open? 21 A. Yes. 22 Q. Can you turn to PDF Page 5 of Cox 23 for me? 24 A. Yes. 25 Q. And do you see Paragraph 7 there	1 training devices. Classification data is 2 received via communication interfaces of at 3 least some of the training devices. 4 Right? 5 A. Yes. 6 Q. So what is classification data in 7 Cox? 8 MR. BARAZESH: Objection. Form. 9 Scope. 10 A. So if you look at Paragraph 7, it 11 mentions that classification data is received 12 via communication interfaces of at least some 13 of the training devices. And the -- that the 14 classification data includes or consists 15 essentially of at least some of the training 16 objects annotated via annotated interfaces by 17 at least some of the annotators with a 18 classification for features thereof. 19 If I'm remembering correctly, and 20 I defer to my declaration, which we really 21 haven't referred to here, the classification 22 data is basically the actual labels and 23 annotations. So each image is given a label, 24 and that label basically represents, for lack 25 of a better word, like the central tendency.

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1 And you have the annotations, so you have 2 that data. 3 And then the psychometric data, 4 which I mentioned before -- excuse me -- is 5 the -- kind of the statistics from 6 these -- you know, how the stimulus -- or 7 stimuli if they're plural -- relate to 8 psychological sensations. So I understand 9 they're kind of mentioned here as two 10 different things. 11 You have got the -- you know, 12 there's the numerical answers I suppose or 13 the quantitative answers, and then you have 14 got -- I should say the actual label and 15 annotations on, let's say, the ordinal 16 scales. But you also have the psychometric 17 data, which is -- you know, we talked about 18 it. I mean, there's -- you know, it 19 includes, among other things, basically 20 the -- you know, how the stimuli affect 21 basically somebody's psychological 22 sensations. 23 BY MR. GINNINGS: 24 Q. A few lines down from where we 25 were just reading, I guess it's Line 14, do	1 rates. It's analogous to other functions 2 that are used for reducing or amplifying the 3 portion of error that causes a change in the 4 synoptic weights or other internal values 5 that are multiples of how the -- those 6 weights change. 7 BY MR. GINNINGS: 8 Q. Can you turn to the next page of 9 Cox, Exhibit 16? I want to come back to the 10 Paragraph 9 that we talked about a little bit 11 earlier. 12 A. Paragraph 9? 13 Q. Yes. 14 A. Okay. 15 Q. And starting on Line 16, there's a 16 sentence we discussed a little earlier that 17 begins with: The database includes. 18 A. Yes. 19 Q. And does anything here in 20 Paragraph 9 describe storing a human-weighted 21 loss function in the database? 22 MR. BARAZESH: Objection. Form. 23 Scope. 24 A. Just a sentence down, it talks 25 about: The penalization module is executable
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1 you see the -- still on the same page, PDF 2 Page 5, do you see the sentence that begins: 3 A human-weighted loss function? 4 A. Yes. 5 Q. What is a human-weighted loss 6 function in Cox? 7 MR. BARAZESH: Objection. Form. 8 Scope. 9 A. I defer to how I define it in my 10 declaration. I can offer to answer your 11 question here, just a general aspect, but 12 I've actually talked about this before. In 13 Cox, the human-weighted loss function is a 14 weight, for example, or maybe a scaler value 15 that is a function of the difficulty that the 16 annotators had in properly identifying the 17 image or what's in the image. And that 18 human-weighted loss function is used as a 19 means of, let's say, amplifying the error, 20 for example, that's propagated back during 21 training, the error being the difference 22 between the predicted output and the label, 23 which would be the correct output of that 24 neural network. 25 So it's analogous to learning	1 by the computer processor and is configured 2 to derive a human-weighted loss function 3 based at in part, probably based at least in 4 part on the classification data in the 5 database and the psychometric data of at 6 least some of the training objects in the 7 database. 8 So the human-weighted loss 9 function, if not stored as a function, is at 10 a minimum derived from the information that's 11 stored, including that psychometric data and 12 the classification data. 13 So if you look at Paragraph 36, 14 this explains how -- I think at least partly 15 explains how the human rate of loss function 16 is derived from the psychometric and 17 classification data. Weighting function 18 conditioned on a psychometric model for a 19 recognition task, the weights are determined 20 by the classification data collected from the 21 annotators, including individual and combined 22 statistics of accuracy response time, 23 presentation time over a sample of images 24 across the varying degrees of difficulty. 25 Human-weighted loss is thus defined as...

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1 And the equation is put just above 2 Paragraph 37. 3 So as I mentioned, the -- while 4 you're training a neural network and I give 5 an image, and I want to feed the 6 classification and psychometric data to that 7 neural network, the input data is stored, the 8 basis of that human-weighted loss function is 9 stored. 10 It really doesn't mean anything 11 else, except just to be run through the very 12 simple equation of the maximum between zero 13 and if there's a -- if there's an 14 even-weighted loss multiple or value that 15 needs to be employed at the output to 16 propagate the error back. 17 BY MR. GINNINGS: 18 Q. Does anything here in Paragraph 36 19 describe storing the human-weighted loss 20 function in a database? 21 MR. BARAZESH: Objection to 22 form. Scope. 23 A. Yeah, I feel like this has been 24 asked and answered several times also, with 25 all due respect.	1 actually asked a question. So I will 2 move to strike that as nonresponsive. 3 And I will ask you a different 4 question. 5 A. You asked me if it's stored, 6 right? If the human-weighted loss function 7 is stored? That was your question? 8 BY MR. GINNINGS: 9 Q. Yeah. I asked that question. 10 A. And I answered it by showing that 11 you have got this weight, $w_{sub\ t}$, in some 12 sort of a lookup table, which means it's 13 stored. 14 And it means if I can pull this 15 out and look at task, T, and know what the 16 weight is, then that suggests to me as a 17 person of ordinary skill that it is in fact 18 stored. 19 MR. GINNINGS: Again, I'm going 20 to move to strike as nonresponsive. 21 Let me ask you a question. 22 MR. BARAZESH: Let's just kind 23 of lower the temperature here a little 24 bit. I think Dr. Janet is asking the 25 questions -- you know, these questions
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1 The classification data and the 2 psychometric data have been stored. And 3 that -- that information constitutes or 4 comprises the human-weighted loss function. 5 BY MR. GINNINGS: 6 Q. With all due respect, Dr. Janet, I 7 asked you about Paragraph 9 before. Then you 8 brought up Paragraph 36, and now I'm asking 9 about Paragraph 36. So it's a different 10 question. 11 A. Uh-huh. So if you look at this 12 equation in Paragraph 36, you will notice 13 that W_t as a function of Z is a value. So 14 that means that the weight is stored. 15 And if I'm looking at -- let me 16 just make sure I've got my -- so for task, T, 17 that means that -- that suggests to me -- and 18 I'm going off the cuff here. I really wish 19 you would kind of stick to my declaration -- 20 but that suggests to me, just in a cursory 21 review, that that weight information is in 22 fact stored because it can be brought up, you 23 know, as a function of, like, a lookup table. 24 And I'm looking at a particular task, T. 25 MR. GINNINGS: Well, I haven't	1 are outside of the direct testimony 2 that's in his declaration anyway, and 3 we have been objecting to that 4 throughout. So I think -- if there's 5 a way to keep this within what his 6 direct testimony is, that would be 7 great. 8 Dr. Janet, let's just wait for 9 the question and answer the question 10 as it's asked. 11 BY MR. GINNINGS: 12 Q. Dr. Janet, can you go to PDF 13 Page 7 of Cox for me? 14 A. All right. 15 Q. And I want to talk about 16 Paragraph 10 of Cox for a minute. I guess 17 the first line of Paragraph 10 actually 18 starts on the prior page. I apologize for 19 that. The portion I want to ask you about, 20 on PDF Page 7 -- can you see the line numbers 21 for Cox on the left-hand side there? 22 A. Yes. 23 Q. Okay. Do you see the Line 6, 24 there's a sentence that begins: The 25 psychometric data may include?

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1 A. Yes.

2 Q. Okay. So I'm going to take this

3 sentence in increments and talk about each

4 piece of it here. I'm reading from that

5 sentence that I just identified here in Cox.

6 It says: The psychometric data

7 may include or consist essentially of one

8 response time for a classifying one or more

9 features.

10 Right?

11 A. Yes. That's what it says, yes.

12 Q. And I just want to pause there.

13 So response time for classifying one or more

14 features, that's the time it takes an

15 annotator to classify one or more features in

16 the image, right?

17 MR. BARAZESH: Objection.

18 Misstates evidence. And scope.

19 BY MR. GINNINGS:

20 Q. Is there something about my

21 question that you're struggling with, or are

22 you looking for something in Cox?

23 A. I'm actually going back to my

24 declaration.

25 Q. Okay.

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1 So you're not able to tell me,

2 Dr. Janet, what Cox was referring to by

3 "response time" without looking at your

4 declaration?

5 MR. BARAZESH: Objection.

6 Scope.

7 A. I'm going back to my declaration

8 because that's my direct testimony, and I'm

9 looking for where I refer to response time in

10 the broader sense.

11 MR. BARAZESH: I also just want

12 to note this isn't a memory test. So

13 if Dr. Janet needs more time to answer

14 a question, he should get that time.

15 MR. GINNINGS: Counsel, I've

16 given you a lot of leeway today on the

17 speaking objections, but that's

18 probably one of the most egregious

19 ones you've made so far, and I really

20 need you to stop.

21 MR. BARAZESH: Well, I mean, I

22 think he said he's looking for an

23 answer, and you asked a question. So

24 it's --

25 (Simultaneous unreportable crosstalk

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1 occurs among parties.)

2 MR. GINNINGS: I'm not

3 interested in going back-and-forth

4 with you. I made a request. Please

5 stop.

6 MR. BARAZESH: I would just say

7 look at the real time.

8 BY MR. GINNINGS:

9 Q. So, Dr. Janet, are you able to

10 answer my question?

11 A. I'm currently looking at my

12 declaration to see where I describe response

13 times versus going off the range here with

14 the cited invaliding prior art.

15 So if you look to Paragraph 26, it

16 says --

17 Q. Of?

18 A. Of Cox. It says that psychometric

19 data -- I'm sorry. Psychometric testing is

20 organized around two primary measures:

21 accuracy and response time.

22 Each of these measures may be used

23 on an individual image pooled for all

24 subjects or pooled for particular subjects.

25 Thus accuracy -- and in this case it uses the

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1 term "reaction time" to mean "response

2 time" -- may be measured on a per-image,

3 per-subject or per-condition level.

4 So within Cox, just looking at

5 this from a person of ordinary skill

6 perspective, the response time in Cox is the

7 measured time each annotator takes to

8 classify or label a given image --

9 Q. All right. Thanks.

10 A. -- specific to Cox. I don't think

11 that's like a categorical definition, but for

12 Cox, that's what I believe it is.

13 Q. Okay. Can you turn back to

14 Paragraph 10 again for me, PDF Page 7?

15 A. Yes.

16 Q. So pick back up. The next item is

17 after what I read before, is number (ii),

18 accuracy of feature classification, right?

19 A. Uh-huh.

20 Q. What is accuracy of feature

21 classification?

22 MR. BARAZESH: Objection. Form.

23 Scope.

24 A. So, again, jumping to

25 Paragraph 26 -- actually, 26 through 28, but

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1 starting on 26: Mean accuracy provides a 2 measure of how difficult a given trial is 3 over the subject population. 4 BY MR. GINNINGS: 5 Q. I'm sorry, where in 26 are you? 6 A. Line 5. That's when it's measured 7 on a per-image level. 8 Q. I see. Got it. Thank you. 9 A. Well, I'm not done. 10 Q. Okay. 11 A. 28 talks about when measured on a 12 per subject, mean accuracy is compared to a 13 nonzero chance accuracy. So it's got to be 14 one of, let's just say, two values. 15 It goes on to say: When measured 16 on a per-stimulus level, mean accuracy 17 provides a measure of how difficult a given 18 trial is over the subject population. 19 And I believe that constitutes my 20 answer. 21 Q. Now, going back one more time to 22 Paragraph 10 on PDF Page 7, let me know when 23 you're there. 24 A. Okay. 25 Q. Okay. And picking up after -- so	1 Form. Scope. 2 A. Paragraph 18, which I cite in my 3 declaration, Paragraph 77, Cox describes 4 presentation time as: The amount of time 5 presented to each annotator of one or more 6 training objects. 7 BY MR. GINNINGS: 8 Q. So other than those three things 9 that we just talked about in Paragraph 10, 10 does Cox describe any other kind of 11 psychometric data? 12 MR. BARAZESH: Objection. Form. 13 Scope. Foundation. 14 A. Well, I'm happy to look through 15 Cox if you want to spend the time doing that 16 to list out all of the forms of psychometric 17 data. I'm also happy to talk about what I 18 actually wrote in my declaration. 19 BY MR. GINNINGS: 20 Q. Is it your testimony, Dr. Janet, 21 that Cox does disclose other types of 22 psychometric data besides these three things? 23 MR. BARAZESH: Objection. Form. 24 Misstates testimony. 25 A. The scope of my work in this
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1 after accuracy of feature classification, 2 that one, Line 8 -- 3 A. I'm sorry, hold on a second. 4 Q. Sure. 5 A. PDF 7, you said? 6 Q. Yes. 7 A. Okay. 8 Q. And I'm on Line 8. 9 A. Uh-huh. 10 Q. So we just talked about accuracy 11 of feature classification, right? 12 A. Yes. 13 Q. Okay. And then continuing on 14 after that, it says: And/or three 15 presentation time of one or more training 16 objects. 17 Right? 18 A. Right. 19 Q. Presentation time is the -- is 20 what? 21 MR. BARAZESH: Objection. 22 Sorry. Are you done with the 23 question? 24 MR. GINNINGS: Yeah. 25 MR. BARAZESH: Okay. Objection.	1 effort is described in my declaration. I do 2 not recall being tasked with or taking on the 3 task of listing out all of the possible 4 descriptions that Cox has of psychometric 5 data. And so I don't really have an answer 6 for you. My guess is that it's possible. 7 Psychometric data is described in some 8 places, at least in Cox very generically, and 9 so in a major way, I would say that it does 10 describe or it does disclose that there are 11 other forms of psychometric data. 12 BY MR. GINNINGS: 13 Q. Can you name any of those other 14 forms of psychometric data that Cox 15 discloses? 16 MR. BARAZESH: Objection. Form. 17 Scope. Foundation. 18 A. Forms other than these three that 19 you described on PDF Page 7? 20 BY MR. GINNINGS: 21 Q. Yes. 22 A. Response time, accuracy of feature 23 classification, and presentation time? 24 Q. Uh-huh, yes. 25 A. So one might be the difficulty

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1 with ranking described in Paragraph 50. 2 Paragraph 61, describes item response slope, 3 item response offset, mouse path, pairwise 4 ranking, Likert-scale judgment, continuous 5 scale judgment, continuous color report, and 6 mouse deviation from target location. 7 Let's see. Search for a couple of 8 terms. 9 Consistency is mentioned in 10 Paragraph 37. Again, I'm going off the cuff 11 here. But that would be something that you 12 would find included in psychometric data. 13 Well, anyway, so this just shows 14 that there are more than I'm able to find 15 with just a couple of terms -- searching for 16 a couple of terms that are in my head. 17 I don't doubt that there are others. 18 Q. Okay. Can you turn to -- still in 19 Cox Exhibit 16, but turn to PDF Page 24 for 20 me. 21 A. 24? 22 Q. Uh-huh. 23 A. Okay. 24 Q. We'll talk about Paragraph 48 once 25 you're there.	1 annotators 160 via display module 167. 2 Did I read that correctly? 3 A. I believe so. 4 Q. What are end-of-test statistics in 5 Cox? 6 MR. BARAZESH: Objection. Form. 7 Scope. 8 A. So the PDFs that we have 9 Figure 8A, A20, which is what's flagged as 10 representative in Cox is a little blurry, but 11 the -- I would say referring to declaration 12 Paragraph 79, Paragraph 48, this Figure 8A is 13 that the end-of-test statistics are basically 14 the final aggregated psychometric summary 15 statistics computed once the annotation 16 process for a given image or the entire test 17 is completed. 18 BY MR. GINNINGS: 19 Q. What's included in those 20 end-of-test statistics? 21 MR. BARAZESH: Objection. Form. 22 Scope. I just want an aside here. 23 When referring to declarations, could 24 we be clear as to which declaration we 25 are referring to just so the record is
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1 A. I'm there. 2 Q. Okay. Do you see -- it's the 3 second sentence of that paragraph that begins 4 with: Faces such as that? 5 A. Yes. 6 Q. So I'm just going to read here for 7 a minute to get to what I want to ask you 8 about. But reading here from Paragraph 48: 9 Faces such as that in image 800 are easily 10 recognized by human subjects in a massive 11 range of poses because of the invariant 12 nature of object recognition in the brain. 13 To address this, embodiments of the invention 14 deploy a test using uncontrolled natural 15 images 810 where annotators are brought off 16 ceiling by using very brief (e.g., 17 approximately 50 milliseconds) presentation 18 times and masking with amplitude-matched, 19 phase-scrambled noise as shown in Figure 8. 20 For example, annotators may be 21 asked to press a specific key if they observe 22 a face in an image 810 or another key if they 23 do not observe a face in the image. At the 24 end of a series of such queries, end-of-test 25 statistics 820 may be displayed to the	1 clear for everyone? 2 THE WITNESS: My apologies. 3 Yes, I'm referring to my '046 4 declaration. 5 MR. BARAZESH: Okay. 6 BY MR. GINNINGS: 7 Q. Which I believe is Exhibit 8. 8 A. Exhibit 8, yeah. 9 Q. So let me just -- since we talked 10 a little bit, let me just re-ask the 11 question. 12 A. Yep. 13 Q. What's included in Cox's 14 end-of-test statistics? 15 MR. BARAZESH: Objection. Form. 16 Scope. 17 A. Well, I thought I just answered 18 that, but it's basically the consolidated 19 metrics derived from the complete set of 20 responses for that image for the entire test. 21 BY MR. GINNINGS: 22 Q. When you say "the consolidated 23 metrics," what does that mean? 24 MR. BARAZESH: Objection. Form. 25 Scope.

Page 162 1 A. That would include just in 2 the -- within the psychometric data for each 3 of these images like a final mean accuracy, 4 the IRCs we were talking about, item response 5 curve, like what's mentioned in Paragraph 78 6 of I believe Exhibit -- Exhibit 8. The 7 difficulty ranking. I think I mentioned 8 consistency. You know, any other patterns of 9 error, if there's -- I talked about, like, 10 how the mouse may be off a little bit or the 11 response times. Anyway, I'm sure that's not 12 a comprehensive list, but that gives you an 13 idea. 14 BY MR. GINNINGS: 15 Q. And you mentioned Figure 8A a 16 minute ago. Can we turn to that? It's on 17 PDF Page 44 of Cox. 18 A. I'm there. 19 Q. Okay. And the portion of 20 Figure 8A shows the end-of-test statistics? 21 MR. BARAZESH: Objection. Form. 22 Scope. 23 A. Well, you have that 820 to the 24 right, and, you know, some sort of a 25 distribution that's described in a plot up	Page 164 1 basically where you've got how often certain 2 things occurred for a particular scenario or 3 a particular value. Or it could be 4 agreement. 5 MR. BARAZESH: I'm just going to 6 lodge an objection on form and scope 7 to that prior question. 8 But just let me get in the 9 objection there, Dr. Janet. Thank 10 you. 11 THE WITNESS: My apologies. 12 MR. BARAZESH: It's all good. 13 MR. GINNINGS: We have been at 14 it for an hour. I know a couple of 15 times I've gone over an hour, but this 16 is a good time for a break. So why 17 don't we go ahead and take another 18 short break. 19 (A brief recess was held from 20 3:42 p.m. to 3:56 p.m.) 21 BY MR. GINNINGS: 22 Q. Welcome back, again, Dr. Janet. 23 A. Thank you. 24 Q. As I asked, after the last few 25 breaks, is there any additions or corrections
Page 163 1 above. There's some human figures with 2 different color coding associated with them. 3 There's some text that is not very clear to 4 me. And, of course, we have the benefit of 5 the paragraph. I think it was 48 that was 6 describing it as end-of-test statistics. 7 BY MR. GINNINGS: 8 Q. I agree with you. The 9 text -- I can't -- I can't read either or I 10 can't -- 11 A. No, but the graphics really get 12 the point across. 13 Q. Okay. And you mentioned that 14 there's a plot or graph or something in 15 what's labeled as 820 in Figure 8A? 16 A. Yeah there's what appears to be 17 a -- maybe a histogram, which, again, is a 18 summary statistic. 19 Q. Are you able to tell me what 20 information is conveyed in that? 21 A. I can't see the numbers on the 22 axis or ordinate or the title above that box. 23 But a person of ordinary skill would look at 24 that and know that that is a -- like a bar 25 chart, and a bar chart is like a histogram	Page 165 1 you want to make to anything we discussed so 2 far today? 3 A. Not as far as I'm aware at 4 present. 5 Q. I want to switch gears and talk a 6 little bit about -- still related to the Cox 7 reference, but I want to talk about some 8 things in your declaration for the 9 '046 Patent, IPR Exhibit 8. 10 A. Okay. 11 Q. Can you turn to -- do you have 12 Exhibit 8 open? 13 A. Yes. 14 Q. Can you turn to -- let's start at 15 PDF Page 29. 16 A. Okay. 17 Q. And this is a -- I just want to 18 orient you to where we are. So on this page 19 is the beginning of your discussion of 20 Ground 1, right? 21 A. Correct. 22 Q. And if you go to the next page, 23 PDF Page 30 for me. 24 A. Okay. 25 Q. Beginning at Paragraph 69, that's

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1 the beginning of your discussion of Claim 1 2 for Ground 1, right? 3 A. Correct. 4 Q. And we discussed this before, but 5 I believe in Paragraph 69, you state that in 6 your opinion, Cox renders obvious Claim 1 of 7 the '046 Patent, right? 8 A. Correct. 9 Q. So we went through some of these 10 claim elements earlier. I want to go to one 11 that I don't think we got to earlier, which 12 is Element 1[c]. And your discussion of that 13 starts on PDF Page 41. 14 A. Okay. 15 Q. And do you see the bottom of the 16 page, the heading 1[c] and the Paragraph 81 17 after that? 18 A. I do, yes. 19 Q. Now, to avoid needing to flip 20 around here, I will share my screen for a 21 second here just to go to the last little bit 22 of orientation. I have what I will represent 23 is -- this is Page 3 of the petition for the 24 '046 Patent, Exhibit 3. It has the -- what I 25 have here is the language of Claim 1, right,	1 phrase "summary statistics" in Claim 1 to a 2 person of ordinary skill in the art? 3 MR. BARAZESH: Objection. Form. 4 Scope. 5 BY MR. GINNINGS: 6 Q. I'm not trying to be difficult, 7 Dr. Janet, but it's been five minutes. Do 8 you have an answer for me? 9 A. I'm working on it. 10 Okay. So just to be clear I'm 11 following, your question was plain and 12 ordinary meaning of "summary statistics"; is 13 that correct? 14 Q. Yes. 15 A. Okay. And I have offered many 16 times what I consider to be a plain and 17 ordinary meaning of "summary statistics" to 18 include a distribution or set of -- or even a 19 singleton value that summarizes basically the 20 statistics -- the statistical aspects of a 21 dataset. 22 But if you look on Column 6, Line, 23 I think, 15: The statistics may characterize 24 the aggregate responses of multiple human 25 observers to a particular derived stimulus.
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1 at least through Element 1[c]? 2 A. Yes. 3 Q. Okay. And then just so we're all 4 on the same page, Element 1[c] here that I've 5 highlighted is: Training a model using the 6 training data. The model configured to 7 receive an input image showing a user and 8 predict summary statistics describing a state 9 of mind of the user in the input image. 10 Right? 11 A. Yes. 12 Q. So I want to talk about -- for a 13 few minutes about this phrase "summary 14 statistics." 15 A. Okay. 16 Q. So first of all, you haven't 17 offered any construction of the phrase in 18 your declaration; is that correct? 19 MR. BARAZESH: Objection. 20 Scope. 21 A. I just have treated it as the 22 plain and ordinary meaning. 23 BY MR. GINNINGS: 24 Q. Okay. And in your -- what to you 25 is the plain and ordinary meaning of the	1 Q. And just so I'm clear, Column 6, 2 Line 15 of the '046 Patent? 3 A. '046 Patent, correct. Yes. 4 Then it goes, a little further 5 down: The summary statistics can 6 characterize the human observer responses in 7 terms of certain parameters associated with 8 the statistics such as content of a response 9 time associated with entering a response, a 10 position of an eye of a human observer 11 associated with the response. 12 And I have also offered basically 13 that it's -- you know, any reduction -- any 14 reduced representation of -- well, a reduced 15 representation might be something like mean 16 or, you know, a likelihood, any other 17 calibrated type of probability. It just has 18 to characterize the distribution of human 19 responses in -- that result from the stimuli, 20 or in the vernacular of the '046 Patent, the 21 derived stimuli, stimuli all the same. 22 It can include a histogram. It 23 can include, you know, first order 24 statistical characterization. It can include 25 second order characterizations. But it's a

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1 way, I think, of describing, using this term, 2 summary statistics, what that 3 characterization is of the distribution of 4 human or user responses to stimuli. 5 And, again, for '046, you know, 6 about the user's state of mind, which is to 7 say sometimes what's referred to as a road 8 user. 9 Q. Okay. So I want to make sure I 10 understand. So in your opinion, for 11 something to be a summary statistic, it has 12 to characterize the distribution of human 13 responses that result from the stimuli? 14 MR. BARAZESH: Objection. Form. 15 Misstates testimony. 16 A. I don't know if it has to, but I 17 think that that's a decent definition of 18 summary statistics or statistical summary. 19 And it's, I believe, a plain and ordinary 20 meaning. 21 BY MR. GINNINGS: 22 Q. Now in -- strike that. 23 Do you still have your declaration 24 for the '046 Patent, Exhibit 8, in front of 25 you?	1 A. Yes. 2 Q. Okay. And the italicized part in 3 the parentheses there is the language of 4 Element 1[c], right? 5 A. Yes. 6 Q. So what, in your opinion, 7 Dr. Janet, in Cox teaches predicting summary 8 statistics? 9 MR. BARAZESH: Objection. Form. 10 A. Well, I mention in Paragraph 81, a 11 little further down: Indeed, Cox closes that 12 statistical information may be collected and 13 applied to the training of computer vision 14 systems in accordance with embodiments of the 15 invention. The classification systems for 16 any visual category may be trained with 17 deeply annotated images by following the 18 learning procedures with the human-weighted 19 loss. 20 The disclosure in Cox is 21 consistent with the '046 Patent which states 22 that the trained means -- that "trained" 23 means that the difference between the summary 24 statistics output by the neural network and 25 the summary statistics calculated from the
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1 A. Yes. 2 Q. Okay. And are you still on 3 Paragraph 81? 4 A. No. I moved around a little bit. 5 Do you want me to go there? 6 Q. Yeah, PDF Page 41. 7 A. Okay. I'm there. 8 Q. And Paragraph 81 relates to 9 Element 1[c], right? 10 A. Correct. 11 Q. And Paragraph 81 here, you state: 12 In my opinion, Cox teaches Element 1[c]. Cox 13 discloses that its model is trained by: 14 (1), receiving annotated training images 15 showing emotional states; (2), predicting 16 classifications for the training images using 17 the model; and (3), optimizing the model such 18 that differences between the predictive 19 classifications and annotated training images 20 are minimized (training a model using the 21 training data, the model configured to 22 receive an input image showing a user and 23 predict summary statistics describing a state 24 of mind of the user in the image). 25 Is that right?	1 responses of the human observers in Step 506 2 is minimized. 3 This is just like Cox's training 4 approach as described in Figure 4B, which is 5 just above Paragraph 82 in my declaration 6 '046. 7 In Cox, annotation responses and 8 psychometric data from the human annotators 9 are utilized to form, quote, a human-weighted 10 loss function that includes penalties for 11 misclassification of later presented query 12 objects as graphically illustrated. 13 Go on to say: The magnitude of 14 those penalties notably increases with 15 increasing deviation from the classification 16 data received from the human annotators. 17 So you have got -- you know, you 18 have got variance, among other things, or 19 accuracy. 20 These penalties ensure that the 21 trained model is, quote, more consistent with 22 the decisions of the human annotators. The 23 human annotators are characterized by the 24 psychometric data and may have summary 25 statistics associated with that or that

Page 174 1 summarize that performance. 2 Cox further teaches that the 3 penalties for misclassification may be 4 assigned based at least in part on the 5 psychometric data. 6 Again, the statistics that 7 represent the user response or the annotator 8 response is to the derived stimuli. 9 So accordingly, Paragraph 83: Cox 10 discloses that its model is trained by 11 predicting classifications of some of the 12 received training objects shown -- showing 13 emotional states and optimizing the model 14 such that the difference between a predicted 15 to classifications and the training data is 16 minimized. 17 Thus, meeting the limitation of 18 the training, the model using the training 19 data, the model configured to receive an 20 input image showing a user and predict 21 summary statistics describing the state of 22 mind of the user in the input image. 23 BY MR. GINNINGS: 24 Q. So what, in your opinion, 25 constitutes predicting summary statistics in	Page 176 1 refer to Figure 4B. So the psychometric 2 data, classification data are what is trained 3 on per Cox, and that's what is predicting the 4 summary statistics. 5 Q. Let's go back to the beginning of 6 Paragraph 81. 7 A. Okay. 8 Q. And first -- I know we didn't 9 necessarily -- I'll go through it one more 10 time. First, you say: In my opinion, Cox 11 teaches Element 1[c], right? 12 A. Correct. 13 Q. Then you say: Cox discloses that 14 its model is trained by, then there's three 15 things, right, (1), (2), (3)? 16 A. Yes. 17 Q. And Number 2 is: Predicting 18 classifications for the training images using 19 the model, right? 20 A. Give me a second. I want to go to 21 the figure also. 22 Okay. (1), (2), (3), the first 23 one: Receiving annotated training images 24 showing emotional states, right. 25 Q. And (2) is: Predicting
Page 175 1 Cox? 2 MR. BARAZESH: Objection. Form. 3 Asked and answered. 4 A. So I mentioned that Cox discloses 5 that statistical information may be collected 6 and applied to the training of computer 7 vision systems in accordance with embodiments 8 of the invention. 9 The classification systems for any 10 visual category may be trained with deeply 11 annotated images by following the learning 12 procedure with human-weighted loss. 13 Cox mentions, among other things, 14 that these can be trained on -- I think the 15 term was a "simple neural network." And with 16 that disclosure, it's consistent in that 17 "trained" means that the difference between 18 the summary statistics output by the neural 19 network and summary statistics calculated 20 from the responses of the human observers is 21 minimized and which is from the patent, by 22 the way, the '046 Patent. 23 But, basically, this is just like 24 Cox's training approach and which I mention, 25 again, at the bottom of Paragraph 81, and I	Page 177 1 classifications for the training images using 2 the model, right? 3 A. Correct. 4 Q. Is it your opinion that predicting 5 classifications amounts to predicting summary 6 statistics in Element 1[c]? 7 MR. BARAZESH: Objection. Form. 8 A. The predicting classifications for 9 the training images, you have the annotators 10 that are classifying the data, and the 11 central tendency, for lack of a better word, 12 would be the label. And that data is 13 basically part of your psychometric and 14 classification dataset. 15 BY MR. GINNINGS: 16 Q. So, Dr. Janet, is it your opinion 17 that predicting classifications for the 18 training images using the model meets the 19 requirement in Element 1[c] of predicting 20 summary statistics? 21 A. Yes. 22 MR. BARAZESH: Objection. Form. 23 Asked and answered. 24 A. Sorry, Counsel. 25 Yes.

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1 BY MR. GINNINGS: 2 Q. Now, when you refer to "predicting 3 classifications," what is a classification? 4 A. Well, I believe that we covered 5 this, but the classification in Cox would be 6 the actual labels applied either by the 7 expert or whatever defined the central 8 tendency and then the annotators, one or 9 both. 10 I might add that that central 11 tendency I'm referring to, that initial label 12 from the -- from the expert on the images 13 can and most often is a result of a 14 statistical process also; surveys, that sort 15 of thing. But then there's like a survey on 16 the survey. Just -- in practical terms. 17 Q. And when you say "the expert," 18 what's the expert that you're referring to? 19 A. Well, these images have a label to 20 begin with, and that label is what 21 is -- I should say that label isn't really 22 supplied to the annotators necessarily. The 23 image is, and the annotators will express 24 their emotional response or something -- some 25 other response to the drive stimuli or the	1 error is pushed back to the weight so that 2 they are adjusted to tune the performance so 3 that the output ultimately represents, 4 performs like the group of annotators, 5 including the original ones, though, that put 6 the label on it, the original label, would 7 have responded to that stimuli. 8 Instead of crunching those numbers 9 every single time you run into a situation 10 like what would be represented by an image or 11 something, you know, close to it, you don't 12 have to crunch all those numbers. You can 13 just hike that image through the neural 14 network and get the salient responses that 15 would have -- that are the same at the output 16 as the crowd of annotators would have 17 described their responses to that stimuli or 18 that stimulus. But now I can do it in a much 19 more computationally compact, smaller data 20 requirement, smaller footprint function. And 21 I can interpolate and I can extrapolate. 22 That's the beauty of neural networks. 23 Q. What are the classifications that 24 Cox predicts for the training images? 25 A. Generally speaking, just looking
Page 179	Page 181
1 stimuli. And the data that's compiled is 2 what are the -- what's the -- what are the 3 statistics that represent the agreement 4 basically between the annotators and the 5 original label. 6 So you have different layers of 7 statistics and summaries thereof. You can 8 train purely on the original classification 9 data and still end up with the -- which is to 10 say that central tendency and still end up 11 with a statistical summary or summary 12 statistics. You can train on the central 13 tendency or that original label and the 14 distribution of responses from the annotators 15 and still end up with summary statistics. 16 Bear in mind that these 17 statistics -- you know, the image is going 18 into the neural network. The summary 19 statistics are basically what's compared to 20 the output of the neural network. And as I 21 mentioned before, the difference between 22 those two is run through some sort of a loss 23 function like mean squared error with a 24 learning rate and this human-weighted 25 component, and that explains how much of that	1 to Cox, various paragraphs like 32, 27, I 2 think 44, but basically -- and I believe we 3 covered this before, but you would get the 4 same kind of summary statistics that are 5 described in the '046 Patent. So you would 6 have the aggregated statistical descriptors 7 like what I described. 8 You would have -- as part of that, 9 you would have the central tendency which 10 could be the mean, could be the mode, could 11 be the median. You would have the IRT 12 parameters that we had talked about. These 13 difficulty values, response times. I talked 14 about consistency. Let me find a place for 15 that. 16 Potentially Paragraph 37, but 17 consistency is a measure as well. But that's 18 how Cox -- those are the summary statistics 19 that are predicted. 20 Q. So I'm looking at Paragraph 37 21 that you just mentioned of Cox? 22 A. Uh-huh. 23 Q. And you mentioned consistency, 24 right? 25 A. I did. Let me look at that just

Page 182	Page 184
1 to be sure. 2 Oh, that's actually more 3 consistency with a human model, but 4 consistency is a measure oftentimes. It's a 5 psychometric measure. 6 Q. Is it your opinion that Cox 7 teaches predicting consistency? 8 MR. BARAZESH: Objection. Form 9 scope. 10 A. Cox teaches collecting 11 psychometric data, and included in 12 psychometric data would be things like mean 13 accuracy, difficulty, consistency, other 14 factors, response times, reaction times, that 15 sort of thing. 16 BY MR. GINNINGS: 17 Q. So let's take the -- you mentioned 18 response times as an example there. Does Cox 19 teach predicting response times? 20 MR. BARAZESH: Objection. Form. 21 Scope. 22 A. Just a simple search, 23 Paragraph 36, talks about the statistics of 24 accuracy, response time, and 25 preservation -- I'm sorry -- presentation	1 MR. BARAZESH: Objection. Form. 2 A. As I mentioned, the psychometric 3 data are data points describing the 4 annotations and labels. And so is the 5 classification dataset. Those are -- they 6 can be taught or they can be used just to 7 form a human-weighted loss function. But by 8 virtue of utilizing the human-weighted loss 9 function, it is learning to a certain 10 extent -- to a reasonable extent, it is 11 learning the psychometric data because the 12 neural network is forced to focus on certain 13 inputs to make sure that it doesn't miss 14 important details. 15 BY MR. GINNINGS: 16 Q. And we talked a few minutes ago 17 about how it's your opinion that Cox is 18 teaching a predicting classifications for the 19 training images is what meets the requirement 20 in 1[c] of Claim 1 of predicting summary 21 statistics, right? 22 MR. BARAZESH: Objection. 23 Objection. Form. That's misstating 24 testimony. 25 A. Are you referring to Paragraph 81?
Page 183	Page 185
1 time over a sampling of images. Response 2 time is in here quite a bit. 3 BY MR. GINNINGS: 4 Q. Does -- 5 (Simultaneous unreportable crosstalk 6 occurs among parties.) 7 BY MR. GINNINGS: 8 Q. Sorry. Go ahead. 9 A. Well, I'm just going to reiterate 10 that the generic use of Cox with respect to 11 psychometric data includes metrics like 12 response time. 13 Q. Does Cox teach predicting any 14 psychometric data? 15 MR. BARAZESH: Objection. Form. 16 Scope. 17 A. Well, Cox teaches predicting the 18 summary statistics describing the state of 19 mind of the user. So the summary statistics 20 are of the classification and the 21 psychometric data as annotated and/or 22 previously labeled. 23 BY MR. GINNINGS: 24 Q. So it's your testimony here that 25 Cox teaches predicting psychometric data?	1 BY MR. GINNINGS: 2 Q. Or -- 3 A. Pardon me? 4 Q. Yes. 5 A. And what was your question again? 6 Q. It's your opinion, am I right, 7 that Cox's predicting classifications for the 8 training images using the model meets 9 Element 1[c]'s requirement of predicting 10 summary statistics; is that correct? 11 MR. BARAZESH: Same objections. 12 A. Well, I think it's described at 13 the beginning of Paragraph 81. In my opinion 14 Cox teaches Element 1[c], and that it 15 discloses that its model is trained by, 16 first, receiving annotated training images 17 showing emotional states; second, predicting 18 classifications for the training images using 19 the model; and third, optimizing the model 20 such that the differences between the 21 predicted classifications and annotated 22 training images are minimized. 23 BY MR. GINNINGS: 24 Q. Correct. And so it's your opinion 25 that the Element 1[c]'s requirement of

Page 186 1 predicting summary statistics is met by Cox 2 disclosing predicting classifications for the 3 training images, right? 4 MR. BARAZESH: Objection. Form. 5 And mischaracterizes testimony. 6 A. So I listed three things, not just 7 one. It's the receiving annotated training 8 images showing the emotional states, 9 predicting the classifications for the 10 training images using the model, and 11 optimizing the model such that the 12 differences between the predicted 13 classifications and annotated training images 14 are minimized, basically minimizing the 15 error. 16 BY MR. GINNINGS: 17 Q. So all three of those things are 18 what constitutes predicting summary 19 statistics. Is it your opinion? 20 A. I'm saying that what Cox is doing 21 in those three things constitutes -- it meets 22 the limitation of the training model using 23 the training data. The model configured to 24 receive an input image, showing a user and 25 predict summary statistics, describing a	Page 188 1 optimizing the model to minimize the error. 2 Q. Okay. Now, of those three things 3 that you just mentioned in that sentence in 4 Paragraph 81 of your declaration, the only 5 thing you identified, you would agree with 6 me, as any kind of predicting is predicting 7 classifications for the training images; is 8 that correct? 9 MR. BARAZESH: Objection. Form. 10 A. No. I also think I answered this 11 question before. The -- it sounds to me like 12 you're trying to exclude the impact of 13 psychometric data from that second step, and 14 Cox is very clear about the use of 15 psychometric data in a variety of ways. 16 One, it describes the mean 17 accuracy. It describes a couple of other 18 aspects of what would constitute difficulty 19 or agreement. So the classification is in 20 and of itself a statistic. 21 The difficulty, the mean accuracy, 22 the variance, those sort of things overlap, 23 but they are -- they also fit neatly under 24 the umbrella of psychometric data. That's 25 one thing.
Page 187 1 state of mind of the user in the input image. 2 Q. What part of that meets the phrase 3 "predict summary statistics"? 4 A. Well, it is learning on the 5 classification and psychometric data and 6 the -- there are a variety of ways of setting 7 up a neural network, but you got to remember, 8 I mean, Cox is trying to characterize the 9 state of mind basically or -- it can 10 identify, you know -- it can classify, it can 11 identify, and then predict the state of mind 12 of a subject in an image. 13 And this is the case with '046 as 14 well. The '046 is describing the state of 15 mind of the user in the input image. I don't 16 think Cox is pulling any punches here or 17 doing a bait and switch. 18 I think it's very clear that it's 19 trying to classify, maybe identify, but also 20 determine the state of mind. And it's doing 21 so, as we have discussed here, by, again, 22 receiving these annotated training images and 23 predicting the classifications for the 24 training images with, for example, the 25 learning model or the neural network and then	Page 189 1 The other thing is the 2 psychometric data produces a human-weighted 3 loss function that drives the learning rates 4 or the magnitude of error that is propagated 5 back to adjust weights within the model, and 6 so it is -- it is also forced, basically, to 7 predict the psychometric data in parallel 8 with the classification or, you know, in part 9 with the classification data. 10 Q. Where in Paragraph 81 do you 11 explain that Cox predicts psychometric data? 12 A. It receives the annotated training 13 images showing the emotional states, the 14 predicted classifications for the training 15 images using the model, and then it 16 optimizes. 17 So by its optimization, you're 18 optimizing on the basis of a human-weighted 19 loss function. That is inherently part of 20 the -- or representative of the psychometric 21 data. 22 Q. So which of these three things in 23 this sentence here in Paragraph 81 involves 24 predicting psychometric data, (1), (2), or 25 (3)?

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1 MR. BARAZESH: Objection. Form. 2 Asked and answered. 3 A. Let me start out by saying that 4 (1), (2), and (3) -- (1), (2), or (3) do not 5 exclude psychometric data. The psychometric 6 data, as explained by Cox, is in conjunction 7 with the classification process, all the 8 annotators relative to the central tendency 9 (i.e., the initial label). 10 The psychometric data also drives 11 the optimization function which is described 12 in (3). So at a minimum, (2) and (3) still 13 include psychometric prediction, I should 14 say, of the psychometric effects. 15 So it's predicting classification, 16 but it's predicting classification as a 17 result of the psychometric data being 18 factored in at least two ways. 19 Q. So Cox factors the psychometric 20 data into the classification prediction, but 21 it does not in fact predict psychometric 22 data; is that correct? 23 MR. BARAZESH: Objection. Form. 24 A. The neural network is learning, 25 and it's learning anything that is influenced	1 overfit. It forces it to regularize. So it 2 is predicting what is expected of it as a 3 result of the psychometric data, which is 4 described in the human-weighted loss 5 function. 6 MR. GINNINGS: Why don't we go 7 ahead and take another short break 8 here, and let me take a look over my 9 notes. I believe we may be -- I'm 10 either finished or close to it. We'll 11 just take a short break here. 12 We can go off the record. 13 (A brief recess was held from 14 4:56 p.m. to 5:08 p.m.) 15 BY MR. GINNINGS: 16 Q. Welcome back, again, Dr. Janet. 17 A. Thank you. 18 Q. Same question as after each break, 19 do you have any additions or corrections to 20 make to your testimony so far today? 21 A. No. 22 MR. GINNINGS: Dr. Janet, thank 23 you very much for your time today. 24 Subject to anything that Tesla's 25 counsel may have for you, I don't have
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1 by, among other things, the psychometric data 2 as well. And it's learning it, at least, two 3 different ways. 4 One of them is how psychometric 5 data plays a role in the classification, 6 which is to say what's this person's, you 7 know, state of mind. And then it does it in 8 another way in that the human-weighted loss 9 function is part of the optimization. 10 BY MR. GINNINGS: 11 Q. Does Cox predict psychometric 12 data, yes or no, Dr. Janet? 13 MR. BARAZESH: Objection. Form. 14 Asked and answered. 15 A. Yeah, I have -- I've answered this 16 a good half a dozen times. 17 BY MR. GINNINGS: 18 Q. Okay. Then give me a yes-or-no 19 answer, please. 20 A. The simple answer, which I've told 21 you, is that yes, it predicts it because it's 22 part of the classification data, and it's 23 part of the optimization function. The 24 optimization function forces the neural 25 network to behave in a particular way, not to	1 any further questions. I just wanted 2 to thank you for your time that you 3 put in today and in your preparation, 4 and I will say you're certainly more 5 versed in this technology that I am, 6 and if any of my questions or lack of 7 understanding or anything today 8 stemmed from something that I wasn't 9 following that may have been obvious, 10 pun intended, to you, then I apologize 11 for that. 12 But it's -- I do feel like I 13 learn more every time I -- I learn 14 something from every expert deposition 15 I take, I think. And so thank you for 16 that. 17 THE WITNESS: Well, I appreciate 18 your compliment and I appreciate your 19 gratitude. I also appreciate the 20 professional way in which you handled 21 this. 22 MR. GINNINGS: Likewise. 23 Likewise. And with that, subject to 24 anything that Tesla's counsel may have 25 for you, I pass the witness.

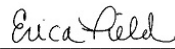
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1 MR. BARAZESH: Thank you. So we
2 can go off the record. I think we'll
3 just need like another five minutes
4 just to have a little more discussion
5 on what we are going to do, and then
6 we should be back. Could we do like
7 4:15? Would that work?
8 MR. GINNINGS: Yeah, sure.
9 (A brief recess was held from
10 5:09 p.m. to 5:13 p.m.)
11 CROSS-EXAMINATION
12 BY MR. BARAZESH:
13 Q. So, Dr. Janet, just a couple of
14 quick questions. So counsel for Perceptive
15 asked you questions on the plain meaning of
16 the term "summary statistics."
17 Do you recall that?
18 A. Yes.
19 Q. You're not offering a specific
20 definition of the term "summary statistics,"
21 right?
22 MR. GINNINGS: Objection to
23 form.
24 BY MR. BARAZESH:
25 Q. I can ask it in a different way.

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1 Are you offering a specific definition of the
2 term "summary statistics"?
3 A. No, I don't believe I am. I'm
4 just saying that I'm using the plain and
5 ordinary meaning.
6 MR. BARAZESH: No further
7 questions.
8 MR. GINNINGS: I don't have
9 anything further. Thank you, again,
10 Dr. Janet.
11 THE WITNESS: Thank you.
12 (Thereupon, the proceedings
13 concluded at 5:14 p.m.)
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1 CERTIFICATE OF REPORTER
2
3 UNITED STATES PATENT AND TRADEMARK OFFICE)
4 PATENT TRIAL AND APPEAL BOARD)
5
6 I, ERICA FIELD, RDR, CRR, certify that I
7 was authorized to and did stenographically
8 report the deposition of JASON JANET, PH.D.,
9 pages 1 through 196; that a review of the
10 transcript was requested; and that the
11 transcript is a true and complete record of
12 my stenographic notes.
13 I further certify that I am not a
14 relative, employee, attorney, or counsel of
15 any of the parties, nor am I a relative or
16 employee of any of the parties' attorney or
17 counsel connected with the action, nor am I
18 financially interested in the action.
19
20 DATED this 7th day of June, 2026.
21 
22 Erica Field, RDR, CRR
23
24
25

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1 ERRATA SHEET
2 DO NOT WRITE ON TRANSCRIPT -
3 ENTER CHANGES HERE
4 IN RE: Tesla v. Perceptive Automata
5 CASE NO. IPR2025-01573
6 WITNESS: JASON JANET, PH.D.
7 TAKEN: 06/04/2026
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21
22 Under penalties of perjury, I declare
23 that I have read the foregoing document and
24 that the facts stated in it are true.
25
Date Jason Janet, Ph.D.

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