UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

JUMIO CORPORATION,
Petitioner

v.

FACETEC, INC.,
Patent Owner

Case IPR2025-00109

U.S. Patent No. 11,874,910

DECLARATION OF JOSH ROSE

FACETEC EXHIBIT 2059
JUMIO v. FACETEC
IPR2025-00109

I, Josh Rose, under penalty of perjury, declare as follows:

I. Introduction

1. I am of legal age and otherwise competent to make this declaration.

2. I am the Chief Technology Officer ("CTO") at FaceTec, Inc. ("FaceTec"). I have been asked to submit a declaration attesting to FaceTec's three-dimensional (3D) liveness detection technology (including its operation), FaceTec's Spoof Bounty Program, iProov's access to FaceTec's 3D liveness detection technology, and FaceTec's business model and performance in the marketplace.

3. I graduated from the University of California, San Diego in 2007 with a Bachelor of Science in Computer Engineering.

4. Following graduation, I worked at Microsoft as a software engineer until 2011.

5. In 2013, I co-founded FaceTec and have been employed by FaceTec as CTO since then.

II. FaceTec's 3D Liveness Detection Technology

6. Many online functions rely on biometric identity verification software. One shortcoming of such software is that it may be "spoofed" by, for example, a two-dimensional (2D) photo of a face or a prerecorded video of a face, allowing an unauthorized user to obtain improper online access. 3D liveness

detection technology seeks to ensure that a living 3D person is present in front of the camera at the time the biometric data is collected.

7. FaceTec, founded in 2013, is a leader in 3D liveness detection technology. FaceTec's technology analyzes numerous aspects of facial images collected by a camera, and one aspect analyzed is "perspective distortion." Perspective distortion refers to the apparent change in the shape or size of an object (e.g., the face) in an image due to the camera's relative position and angle. When appropriately present, perspective distortion verifies to a high degree of confidence that the face captured in the photos is 3D and not a 2D photo or video.

8. Typical cameras include a curved lens and a flat digital sensor, which results in some level of "fisheye" distortion in the images taken by the camera. The degree of the distortion is dependent on various factors, including the type of optics used in the camera's lens and internal camera measurements. In some instances, the amount of this distortion that is present in a photo may not be obvious to the human eye.

9. FaceTec's 3D liveness detection technology collects one or more facial images at a first distance from the camera, collects one or more facial images at a second distance from the camera, and then compares the images to confirm the presence of appropriate perspective distortion. Through this process, FaceTec's

3D liveness detection technology eliminates 2D photo/video impersonation attacks, which are the most common attacks.

10. Specifically, FaceTec's 3D liveness detection technology verifies or authenticates the three-dimensionality of a user's face using images of the user's face captured using a camera equipped computing device. The computing device includes a processor configured to execute machine executable code, a screen with a user interface, a camera, and one or more memories configured to store machine readable instructions.

11. The computing device captures at least one first image of the user taken with the camera at a first distance from the user and processes the first image(s) to obtain (e.g., receive or derive) first data from the image(s). Ex. 2067 at No. 2-3.

12. The computing device captures at least one second image of the user taken with the camera at a second distance from the user and processes the second image(s) to obtain (e.g., receive or derive) second data from the image(s). Ex. 2067 at No. 2-3.

13. To change the distance between the user and the camera, the user may move the camera in a relatively straight line closer to their face, the user may move their face in a relatively straight line closer to the camera, or both. Ex. 2067 at No. 2.

14. To guide the user to capture the first image(s) at the first distance and the second image(s) at the second distance, the computing device displays one or more prompts in the form of ovals within which the user aligns or places their face during the capture of the first image(s) and the second image(s). Ex. 2067 at No. 2.

15. The user's facial expressions and camera should be held steady and without significant movement during capture of the first image and, after the distance change, during the capture of the second image. Ex. 2067 at No. 2.

16. [redacted] Ex. 2067 at No. 2.

17. The FaceTec software compares the first data with the second data to determine whether the first data matches the second data and to determine whether differences between the first image(s) and the second image(s) have expected differences resulting from image capture at the first distance and image capture at the second distance. Ex. 2067 at No. 6.

18. The FaceTec software determines that the user's face is three-dimensional when the first data does not match the second data and the second data has the expected differences as compared to the first data that should be present as

the result of the change in distance between the user and the camera when capturing the first image(s) and the second image(s). Ex. 2067 at No. 7.

19. The expected differences include expected distortions, including fish-eye type distortions in at least one of the first image(s) or the second image(s) due to the three-dimensional nature of the human face and the change in distance between the camera and the user when the images are captured. *See* Ex. 2067.

20. The FaceTec software will optionally compare the first data, second data, or both to enrollment data and only authenticate the user when the first data, second data, or both match the enrollment data within a predetermined threshold. Ex. 2068 at 1.

21. The first data and the second data include biometric data. Ex. 2067 at No. 7.

22. [redacted] *See* Ex. 2067.

23. The computing device may be a hand-held device that the user holds at the first distance and the second distance to capture the first image(s) and the second image(s). *See* Ex. 2067.

24. The computing device may be a laptop or desktop computer, and the user may move from the first distance to the second distance to capture the first image(s) and the second image(s). Ex. 2067 at No. 2.

25. The images below depict expected changes in the appearance of a 3D face when the capture distance is changed. Among other subtle but detectable distortions, perspective distortion causes the user's nose to appear larger in proportion to the rest of the face in the second image as compared to the first image. FaceTec's technology can detect this perspective distortion and other expected differences by examining at least two images taken at different distances.



26. Others have attempted to use 2D images—either a single photo or a series of photos taken at the same distance—to detect the liveness of a user. 2D liveness, however, does not have as much data, is susceptible to threats, and is vulnerable to 2D photo and video presentation attacks because many people have uploaded high resolution 2D photos and videos to the internet that may be used as source material for spoofing.

27. Hardware-based 3D systems have also been used to confirm liveness, including Apple Inc.'s "Face ID." Apple's system, however, requires specialized infrared cameras that are built into the phone screen, and the vast majority of current computer and smart devices do not include these built-in infrared cameras.

28. FaceTec's software, which can be implemented on virtually any camera-equipped computing device, provided approximately 2.7 billion 3D liveness checks in 2024 on six continents and for all combinations of user age, gender, and ethnicity.

III. FaceTec's "Spoof Bounty Program"

29. FaceTec's software has undergone years of testing against tens of millions of digital and physical spoof attempts, including 2D paper photos and digital images; high resolution videos; paper masks with eye and mouth cutouts; "Hollywood" quality masks, wax figures, and lifelike dolls; photos or video frames animated into avatars; video projections on 3D heads; device emulators and virtual camera programs; and hardware video injection converters and adapters.

30. In October 2019, FaceTec publicly implemented a "Spoof Bounty Program" to further improve the security of its product. Ex. 2046 at 1. In exchange for agreeing to FaceTec's terms and conditions, participants are given access to FaceTec's Spoof Bounty Program to try to spoof or bypass FaceTec's 3D liveness detection technology. If the participant successfully spoofs or bypasses the system,

they are required to notify FaceTec of the details of the successful attack so that FaceTec can use this information to mitigate that threat vector and to make its software more secure. *Id.* at 2.

31. To encourage participation in the program, FaceTec offers participants a "bounty" (monetary reward) for any successful attack. The amount of this bounty is based on the type of attack and currently includes the following threat vectors and bounty payout amounts:

How to Participate in the Bounty Program

Read and agree to the Terms and Conditions outlined below, and then successfully Spoof or Bypass FaceTec's Liveness Detection with a method that qualifies as Level 1, 2, 3, 4 or 5 on the Liveness.com (http://www.liveness.com) Threat Vector Scale, reproduce it, and be paid a bounty as follows:

Threat	Description	Example	Bounty
Level 1	Hi-res paper & digital photos, hi-def videos exhibiting challenge/response and human-worn paper masks.		Browser, iOS, & Android: $30,000 $90,000 Total
Level 2	Commercially available lifelike dolls, and resin, latex & silicone 3D masks up to USD$300 in price.		Browser, iOS, & Android: $30,000 $90,000 Total
Level 3	Custom-made ultra-realistic 3D masks, sculptures, wax heads, etc. up to USD$3,000 in creation costs.		Browser, iOS, & Android: $40,000 $120,000 Total
Level 4	Successfully decrypt & edit the contents of a 3D FaceScan to contain synthetic data not collected from the session, have the FaceTec Server process it and respond with Liveness Success.	3D FaceScan Tampering (https://dev.facetec.com/security-best-practices#facemap-tampering)	Browser, iOS, & Android: $60,000 $180,000 Total
Level 5	Successfully take over the camera feed & inject previously captured frames that result in the FaceTec Server responding with Liveness Success.	ManyCam (https://manycam.com/) Vcam (https://www.e2esoft.com/vcam/) vlc2Cam (https://vlc2vcam.com/) FakeWebcam (https://www.fakewebcam.com/)	Browser, iOS, & Android: $40,000 $120,000 Total

Ex. 2046 at 1.

32. Given that participants are granted special access to FaceTec's 3D liveness detection technology through the Spoof Bounty Program, participation in the Spoof Bounty Program includes several restrictions. Without exception, participants are required to agree to use any information learned during participation in FaceTec's Spoof Bounty Program solely for that program. Ex. 2046 at 3. Participants cannot reverse engineer FaceTec's 3D liveness detection technology and use that information in any other liveness detection product or service, and participants are required to hold all information learned through the Spoof Bounty Program strictly confidential:

> Any information you receive or collect about FaceTec, its customers, technology, software, applications, performance, security methods and other related information through the Spoof Bounty Program ("Confidential Information") must be kept confidential and only used in connection with the Spoof Bounty Program. You may not use, disclose or distribute any such Confidential Information, including, but not limited to, any information regarding your Submissions and information you obtain when researching the FaceTec products and services, without FaceTec's prior written consent. You may not use any of the information, concepts, computer code, security techniques, sequencing or strategies that you may learn from attempting to reverse engineer FaceTec's technology during your participation in the Spoof Bounty Program or using the bounty.facetec.com (https://bounty.facetec.com/) page in any other Liveness Detection product or service offered by any other company. If you do use

information that you learn from interacting with FaceTec's technology in any other Liveness Detection Product or Service, you will be held liable for intellectual property theft and will be prosecuted to the fullest extent of the applicable laws.

Ex. 2046 at 3.

33. FaceTec maintains detailed records of all participants in its Spoof Bounty Program, as well as testers of its Demo Applications and Developer accounts.

IV. iProov's Access to FaceTec's 3D Liveness Detection Technology



[redacted]



[redacted]

[redacted].





[redacted]

[redacted]

[redacted]

[1] [redacted]







45. In late 2020, iProov released its competing biometric liveness detection technology called "Liveness Assurance." According to iProov's website, iProov's Liveness Assurance technology attempts to verify that an online user is "[a] real person – this person is a human being and not a photo, a mask, or other presentation attack." Ex. 2060 at 5.

46. iProov's technology includes at least two security features employed by FaceTec to enhance the security of its technology. The first is a user interface that requires users to provide images of their face from at least two different

distances, and the second is a security technique that FaceTec refers to as [redacted].

V. FaceTec's Business Model and Performance in the Marketplace

47. FaceTec's entire business is licensing its software. FaceTec was the first company in the industry to earn Level 1 certification in iBeta Quality Assurance's Presentation Attack Detection ("PAD") evaluation of its ZoOm® software. Ex. 2078 (conducted in accordance with ISO/IEC 30107-3); *see also* Ex. 2036. FaceTec was also the first company to earn Level 2 certification from iBeta's PAD evaluation of its ZoOm® software. Ex. 2037 (conducted in accordance with ISO/IEC 30107-3).

48. [redacted], the only feature customers paid for was the performance of 3D liveness checks. As shown below, all other features were optional and offered free of charge:

Requested Features

Biometric Features Required *	○ 3D Liveness Checks & 3D Face Matching (Note: All Face Matching is Free, Unlimited Usage)
	○ 3D Liveness Checks Only (No Face Matching, even though it's Free)
Optional Free Features	☐ Compare User's Face to their Photo ID Document
	☐ Audit Trail Image For Each Session
	☐ Match 3D User's Face to 2D Photo ID or Govt DB
	☐ OCR Text From Photo ID Documents
	☐ Scan Barcodes & NFC Chips from Photo ID Documents
	☐ OCR Text From Other Documents (Utility Bill, W2, etc.)
	☐ Cross Platform Support (Webcam, ATM, IoT, etc.)
	☐ 1:N Face Search for Deduplication & Fraud Detection
	☐ UR Code Encoder for Issuing Authorities
	☐ UR Code Matcher/Scanner for Relying Parties

Ex. 2068 at 1.

49. Many customers use FaceTec's software solely for the performance of 3D liveness checks and nothing else. Although the 3D liveness checks are multilayered, the first check confirms that a user is 3D by comparing images taken at different distances for expected differences in biometric data, such as the presence of appropriate perspective distortion and differences. This first layer eliminates 2D photo/video impersonation attacks, which are the most common attacks.

50. Jumio called FaceTec's software "a genius solution" publicly on stage at the Finovate EU 2019 conference and licensed FaceTec's software from [redacted]. Ex. 2057 at 11:10. During that time, Jumio

paid FaceTec over [redacted] for the performance of over [redacted] 3D liveness checks. *See* Ex. 2058. Jumio also had full access to FaceTec's software and digital documentation as well as deep access to FaceTec's developers for support. FaceTec had a multitude of emails, phone calls, and in-person meetings with Jumio and sent Jumio presentations, sales materials, and white papers.

51. Use of FaceTec's software has steadily increased since its launch in 2017.

52. FaceTec's annual revenues are shown below together with the number of 3D liveness checks per year:



53. Today, FaceTec has over 250 direct customers and partners globally. FaceTec's customers run FaceTec's software on their own servers, and FaceTec's partners sublicense FaceTec's software to their direct customers. FaceTec's customers/partners include PayPal, Experian, Match Group, the U.S. Department of Homeland Security, and Canadian Parliament.

54. FaceTec's software for 3D liveness detection was its first product.

55. FaceTec engages in very few marketing efforts. FaceTec's marketing budget is [redacted], and FaceTec primarily limits its marketing efforts to attending conferences and purchasing search engine keywords. What little marketing FaceTec does do touts the software's 3D liveness checks and simplicity of use with any camera-enabled device. *See* Ex. 2062.

VI. Evidence

56. Based on my role as the CTO of FaceTec, I have first-hand knowledge of FaceTec's records, including those related to licensing, security certifications, information appearing on FaceTec's website, and the use and operation of FaceTec's software.

A. Ex. 2078: iBeta Quality Assurance Letter Regarding Level 1 Testing

57. Exhibit 2078 is an iBeta Quality Assurance letter from Gail Audette regarding Level 1 testing dated August 20, 2018.

58. I hereby certify that the document marked as Exhibit 2078 is a true and correct copy of the iBeta Quality Assurance letter regarding Level 1 testing.

59. I hereby certify that the iBeta Quality Assurance letter regarding Level 1 testing (Ex. 2078):

a. was made or obtained at or near the time of occurrence of the matters set forth in the record, by, or from information transmitted by, a person with personal knowledge of those matters;

b. was kept in the course of regularly conducted business activity;

c. was created or obtained as a regular business practice; and

d. is the type of information created, obtained, and used in the ordinary course of business.

B. Ex. 2037: iBeta Quality Assurance Letter Regarding Level 2 Testing

60. Exhibit 2037 is an iBeta Quality Assurance letter from Gail Audette regarding Level 2 testing dated February 7, 2019.

61. I hereby certify that the document marked as Exhibit 2037 is a true and correct copy of the iBeta Quality Assurance letter regarding Level 2 testing.

62. I hereby certify that the iBeta Quality Assurance letter regarding Level 2 testing (Ex. 2037):

a. was made or obtained at or near the time of occurrence of the matters set forth in the record, by, or from information transmitted by, a person with personal knowledge of those matters;

b. was kept in the course of regularly conducted business activity;

c. was created or obtained as a regular business practice; and

d. is the type of information created, obtained, and used in the ordinary course of business.

C. Ex. 2038: BixeLab Letter of Confirmation of Level 2 Testing

63. Exhibit 2038 is a BixeLab Letter of Confirmation from Somya Singh and Ted Dunstone regarding Level 2 testing.

64. I hereby certify that the document marked as Exhibit 2038 is a true and correct copy of the BixeLab Letter of Confirmation regarding Level 2 testing.

65. I hereby certify that the BixeLab Letter of Confirmation regarding Level 2 testing (Ex. 2038):

a. was made or obtained at or near the time of occurrence of the matters set forth in the record, by, or from information transmitted by, a person with personal knowledge of those matters;

b. was kept in the course of regularly conducted business activity;

c. was created or obtained as a regular business practice; and

d. is the type of information created, obtained, and used in the ordinary course of business.

D. Ex. 2039: BixeLab Letter of Confirmation of 3D:2D Face Matching Test

66. Exhibit 2039 is a BixeLab Letter of Confirmation from Somya Singh and Ted Dunstone regarding 3D:2D face matching testing.

67. I hereby certify that the document marked as Exhibit 2039 is a true and correct copy of the BixeLab Letter of Confirmation regarding 3D:2D face matching testing.

68. I hereby certify that the BixeLab Letter of Confirmation regarding 3D:2D face matching testing (Ex. 2039):

a. was made or obtained at or near the time of occurrence of the matters set forth in the record, by, or from information transmitted by, a person with personal knowledge of those matters;

b. was kept in the course of regularly conducted business activity;

c. was created or obtained as a regular business practice; and

d. is the type of information created, obtained, and used in the ordinary course of business.

E. Ex. 2040: Praetorian Letter Regarding SDK Testing

69. Exhibit 2040 is a Praetorian letter from Jay Johnston regarding SDK testing dated April 15, 2024.

70. I hereby certify that the document marked as Exhibit 2040 is a true and correct copy of the Praetorian letter regarding SDK testing.

71. I hereby certify that the Praetorian letter regarding SDK testing (Ex. 2040):

a. was made or obtained at or near the time of occurrence of the matters set forth in the record, by, or from information transmitted by, a person with personal knowledge of those matters;

b. was kept in the course of regularly conducted business activity;

c. was created or obtained as a regular business practice; and

d. is the type of information created, obtained, and used in the ordinary course of business.

F. Ex. 2046: FaceTec's $600,000 Spoof Bounty Program Website Printout

72. Exhibit 2046 is a website printout describing FaceTec's $600,000 Spoof Bounty Program established October 24, 2019, and available at https://dev.facetec.com/spoof-bounty-program.

73. I hereby certify that the website printout marked as Exhibit 2046 is a true and correct copy of the website page describing FaceTec's $600,000 Spoof Bounty Program.

74. I hereby certify that the website page shown in the website printout describing FaceTec's $600,000 Spoof Bounty Program (Ex. 2046):

a. was made or obtained at or near the time of occurrence of the matters set forth in the record, by, or from information transmitted by, a person with personal knowledge of those matters;

b. was kept in the course of regularly conducted business activity;

c. was created or obtained as a regular business practice; and

d. is the type of information created, obtained, and used in the ordinary course of business.

[redacted]

[redacted]

[redacted]

a. were made or obtained at or near the time of occurrence of the matters set forth in the record, by, or from information transmitted by, a person with personal knowledge of those matters;

b. were kept in the course of regularly conducted business activity;

c. were created or obtained as a regular business practice; and

d. are the type of information created, obtained, and used in the ordinary course of business.

[redacted]

[redacted]

[redacted]

a. were made or obtained at or near the time of occurrence of the matters set forth in the record, by, or from information transmitted by, a person with personal knowledge of those matters;

b. were kept in the course of regularly conducted business activity;

c. were created or obtained as a regular business practice; and

d. are the type of information created, obtained, and used in the ordinary course of business.

[redacted]

a. were made or obtained at or near the time of occurrence of the matters set forth in the record, by, or from information transmitted by, a person with personal knowledge of those matters;

b. were kept in the course of regularly conducted business activity;

c. were created or obtained as a regular business practice; and

d. are the type of information created, obtained, and used in the ordinary course of business.

[redacted]

a. were made or obtained at or near the time of occurrence of the matters set forth in the record, by, or from information transmitted by, a person with personal knowledge of those matters;

b. were kept in the course of regularly conducted business activity;

c. were created or obtained as a regular business practice; and

d. are the type of information created, obtained, and used in the ordinary course of business.

[redacted]

a. were made or obtained at or near the time of occurrence of the matters set forth in the record, by, or from information transmitted by, a person with personal knowledge of those matters;

b. were kept in the course of regularly conducted business activity;

c. were created or obtained as a regular business practice; and

d. are the type of information created, obtained, and used in the ordinary course of business.

[redacted]

a. were made or obtained at or near the time of occurrence of the matters set forth in the record, by, or from information

transmitted by, a person with personal knowledge of those matters;

b. were kept in the course of regularly conducted business activity;

c. were created or obtained as a regular business practice; and

d. are the type of information created, obtained, and used in the ordinary course of business.

M. Ex. 2058: Jumio Sales Transactions

99. Exhibit 2058 is a summary of payments from Jumio to FaceTec from [redacted].

100. I hereby certify that the summary of payments shown in the document marked as Exhibit 2058 are true and correct records taken from FaceTec's CRM system.

101. I hereby certify that the records shown in the summary of payments from Jumio to FaceTec (Ex. 2058):

a. were made or obtained at or near the time of occurrence of the matters set forth in the record, by, or from information transmitted by, a person with personal knowledge of those matters;

b. were kept in the course of regularly conducted business activity;

c. were created or obtained as a regular business practice; and

d. are the type of information created, obtained, and used in the ordinary course of business.

N. Ex. 2062: FaceTec Explainer Video

102. Exhibit 2062 is a video explaining FaceTec's software and available at https://www.youtube.com/watch?v=uBrky5_g0-w.

103. I hereby certify that the video marked as Exhibit 2062 is a true and correct copy of the video explaining FaceTec's software.

104. I hereby certify that the video explaining FaceTec's software (Ex. 2062):

a. was made or obtained at or near the time of occurrence of the matters set forth in the record, by, or from information transmitted by, a person with personal knowledge of those matters;

b. was kept in the course of regularly conducted business activity;

c. was created or obtained as a regular business practice; and

d. is the type of information created, obtained, and used in the ordinary course of business.

O. Ex. 2063: FaceTec 3D:2D IDScan, Face Matching Accuracy Report

105. Exhibit 2063 is a report titled FaceTec 3D:2D IDScan, Face Matching Accuracy Report and updated June 28, 2023.

106. I hereby certify that the document marked as Exhibit 2063 is a true and correct copy of the FaceTec 3D:2D IDScan, Face Matching Accuracy Report.

107. I hereby certify that the FaceTec 3D:2D IDScan, Face Matching Accuracy Report (Ex. 2063):

a. was made or obtained at or near the time of occurrence of the matters set forth in the record, by, or from information transmitted by, a person with personal knowledge of those matters;

b. was kept in the course of regularly conducted business activity;

c. was created or obtained as a regular business practice; and

d. is the type of information created, obtained, and used in the ordinary course of business.

P. Ex. 2067: FaceTec Software Explanation

108. Exhibit 2067 is a document explaining FaceTec's software.

109. I hereby certify that the document marked as Exhibit 2067 is a true and correct copy of the document explaining FaceTec's software.

110. I hereby certify that the document explaining FaceTec's software (Ex. 2067):

a. was made or obtained at or near the time of occurrence of the matters set forth in the record, by, or from information transmitted by, a person with personal knowledge of those matters;

b. was kept in the course of regularly conducted business activity;

c. was created or obtained as a regular business practice; and

d. is the type of information created, obtained, and used in the ordinary course of business.

Q. Ex. 2068: FaceTec's Request a Pricing Quote Website Printout

111. Exhibit 2068 is a website printout showing FaceTec's website where potential customers can request a pricing quote and available at https://dev.facetec.com/quote.

112. I hereby certify that the website printout marked as Exhibit 2068 is a true and correct copy of the website page where potential customers can request a pricing quote.

113. I hereby certify that the website page shown in the website printout (Ex. 2068):

a. was made or obtained at or near the time of occurrence of the matters set forth in the record, by, or from information transmitted by, a person with personal knowledge of those matters;

b. was kept in the course of regularly conducted business activity;

c. was created or obtained as a regular business practice; and

d. is the type of information created, obtained, and used in the ordinary course of business.

R. Ex. 2069: IDV/KYC Software Suite Tour Video

114. Exhibit 2069 is a video explaining FaceTec's software and available at https://www.youtube.com/watch?v=IUOygMbhNO4.

115. I hereby certify that the video marked as Exhibit 2069 is a true and correct copy of the video explaining FaceTec's software.

116. I hereby certify that the video explaining FaceTec's software (Ex. 2069):

a. was made or obtained at or near the time of occurrence of the matters set forth in the record, by, or from information transmitted by, a person with personal knowledge of those matters;

b. was kept in the course of regularly conducted business activity;

c. was created or obtained as a regular business practice; and

d. is the type of information created, obtained, and used in the ordinary course of business.

S. Ex. 2072: Video Showing FaceTec and Jumio Software Operations

117. Exhibit 2072 is a video showing FaceTec's and Jumio's software operations.

118. I hereby certify that the video marked as Exhibit 2072 is a true and correct copy of the video showing FaceTec's and Jumio's software operations.

119. I hereby certify that the software operations shown in the video marked as Exhibit 2072 are true and correct demonstrations of FaceTec's and Jumio's software.

T. Ex. 2073: FaceTec Services Agreement and Amendments Nos. 1 and 2

120. Exhibit 2073 is a FaceTec Services Agreement with Jumio dated [redacted] together with Amendment Nos. 1 and 2 dated [redacted] and [redacted] respectively.

121. I hereby certify that the document marked as Exhibit 2073 is a true and correct copy of the FaceTec Services Agreement and Amendments Nos. 1 and 2.

122. I hereby certify that the FaceTec Services Agreement and Amendments Nos. 1 and 2 (Ex. 2073):

a. were made or obtained at or near the time of occurrence of the matters set forth in the records, by, or from information transmitted by, a person with personal knowledge of those matters;

b. were kept in the course of regularly conducted business activity;

c. were created or obtained as a regular business practice; and

d. are the type of information created, obtained, and used in the ordinary course of business.

U. Ex. 2075: FaceTec's Report Regarding Bias in 2D Face Matching vs. 3D Face Matching

123. Exhibit 2075 is a FaceTec report titled Bias in 2D Face Matching vs. 3D Face Matching.

124. I hereby certify that the document marked as Exhibit 2075 is a true and correct copy of the Bias in 2D Face Matching vs. 3D Face Matching report.

125. I hereby certify that the Bias in 2D Face Matching vs. 3D Face Matching report (Ex. 2075):

a. was made or obtained at or near the time of occurrence of the matters set forth in the record, by, or from information

transmitted by, a person with personal knowledge of those matters;

b. was kept in the course of regularly conducted business activity;

c. was created or obtained as a regular business practice; and

d. is the type of information created, obtained, and used in the ordinary course of business.

VII. Conclusion

126. In signing this declaration, I understand that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I acknowledge that I may be subject to cross-examination in this case and that cross-examination will take place within the United States. If cross-examination is required of me, I will appear for cross-examination within the United States during the time allotted for cross-examination.

127. I declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001.

Executed on: 10/15/2025 By: _____
Josh Rose