

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROSOFT CORPORATION,
Petitioner,

v.

REALD SPARK, LLC,
Patent Owner.

Case No. IPR2023-01046

Patent No. 10,740,985

Before JEAN R. HOMERE, CHARLES J. BOUDREAU, and
CHRISTOPHER L. OGDEN, *Administrative Patent Judges*.

PETITIONER’S UPDATED EXHIBIT LIST

EXHIBIT LIST (NEW EXHIBITS IN ITALICS)

EXHIBITS FILED BY PETITIONER	
EX-1001	U.S. Patent No. 10,740,985 to Eric Sommerlade and Alexandros Neophytou (“’985 Patent”)
EX-1002	Patent Prosecution History of U.S. Patent No. 10,740,985
EX-1003	Declaration of L. Karam Regarding Invalidity of U.S. Patent No. 10,740,985
EX-1004	Curriculum Vitae of Lina Karam
EX-1005	U.S. Patent No. 10,664,949 to Edmond Chalom and Or Shimshi (“Chalom”)
EX-1006 (corrected 3/4/24)	Ganin <i>et al.</i> “Deepwarp: Photorealistic image resynthesis for gaze manipulation.” In <i>ECCV 2016: 14th European Conference on Computer Vision, Amsterdam, The Netherlands, October 11-14, 2016</i> . Archived at https://web.archive.org/web/20170329084730/http://sites.skoltech.ru/compvision/projects/deepwarp/files/deepwarp_eccv2016.pdf (“Ganin”)
EX-1007	U.S. Patent Application Publication No. 2017/0132528 A1 to Aslan <i>et al.</i> (“Aslan”)
EX-1008	Webpage printout at https://link.springer.com/chapter/10.1007/978-3-319-46475-6_20 (DeepWarp: Photorealistic Image Resynthesis for Gaze Manipulation)

EX-1009	U.S. Patent Application Publication No. 2018/0158246 A1 to Oliver Grau and Daniel Pohl (“Grau”)
EX-1010	U.S. Patent No. 8,942,283 to Charles P. Pace (“Pace”)
EX-1011	U.S. Provisional Application No. 62/542,661 filed August 8, 2017 (“’661 Prov. Appl.”)
EX-1012	U.S. Provisional Application No. 62/543,587 filed August 10, 2017 (“’587 Prov. Appl.”)
EX-1013	Prosecution of European Patent Application No. 18844651
EX-1014	[Reserved]
EX-1015	[Reserved]
EX-1016	Liu <i>et al.</i> “Optical flow and principal component analysis-based motion detection in outdoor videos.” <i>Eurasip Journal on Advances in Signal Processing</i> , volume 2010, article id 680623, 6 pages, 2010. Hindawi Publishing Corporation. (“Liu”)
EX-1017	Webpage printout at https://www.reald.com/privacypolicy (RealD Privacy Policy)
EX-1018	Webpage printout at https://web.archive.org/web/20161231162955/https://www.skoltech.ru/en/2016/11/ckoltech-litsenziroval-tehnologiyu-obespecheniya-zritelnogo-kontakta-v-videokonferentsiyah-v-

	kompaniyu-reald/ (Skoltech Licenses Eye Contact Videoconferencing Technology to RealD)
EX-1019	Kononenko, Daniil. “Learnable Warping-Based Approach To Image Re-Synthesis With Application to Gaze Redirection.” (2017): 1-131. (Kononenko Doctoral Thesis)
EX-1020	Sotera Stipulation
EX-1021	Yang <i>et al.</i> “Eye gaze correction with stereovision for video-teleconferencing.” <i>ECCV 2002: 7th European Conference on Computer Vision, Copenhagen, Denmark, May 28–31, 2002, Proceedings, Part II</i> (pp. 479-494). Springer Berlin Heidelberg, 2002. (“Yang”)
EX-1022	Cham <i>et al.</i> “Analogous view transfer for gaze correction in video sequences.” <i>7th International Conference on Control, Automation, Robotics and Vision, Singapore, December 2-5, 2002, Proceedings</i> (pp. 1415-1420). IEEE Xplore. (“Cham”)
EX-1023	Webpage printout at: https://ieeexplore.ieee.org/abstract/document/1234980 (Analogous view transfer for gaze correction in video sequences)
EX-1024	Wood <i>et al.</i> “Gazedirector: Fully articulated eye gaze redirection in video.” <i>arXiv: 1704.08763v1 [cs.CV]</i> , 27 April 2017.
EX-1025	Zitnick <i>et al.</i> “Manipulation of video eye gaze and head orientation for video teleconferencing.” <i>Technical Report MSR-TR-99-46, Microsoft Research, 16 June 1999.</i>

EX-1026	Webpage printout at: https://www.microsoft.com/en-us/research/publication/manipulation-of-video-eye-gaze-and-head-orientation-for-video-teleconferencing/ (Manipulation of Video Eye Gaze and Head Orientation for Video Teleconferencing – Microsoft Research)
EX-1027	Gemmell <i>et al.</i> “Gaze awareness for video-conferencing: A software approach.” <i>IEEE Multimedia</i> , volume 7, issue 4, October-December 2000 (pp. 26-35). (“Gemmell”)
EX-1028	Kononenko <i>et al.</i> “Learning to look up: Realtime monocular gaze correction using machine learning.” <i>CVPR 2015: IEEE/CVF Conference on Computer Vision and Pattern Recognition</i> , Boston, MA, USA, 7-12 June 2015 (pp. 4667-4675). (“Kononenko”)
EX-1029	Webpage printout at: https://github.com/BlueWinters/DeepWarp (GitHub - BlueWinters_DeepWarp_ Tensorflow implement for DeepWarp)
EX-1030	Aleš Hladnik, “Image Compression and Face Recognition: Two Image Processing Applications of Principal Component Analysis.” <i>International Circular of Graphic Education and Research</i> , No. 6, January 2013 (pp. 56-61).
EX-1031	Complaint: <i>RealD Spark, LLC v. Microsoft Corporation</i> , WDWA-2-22-cv-00942, Dkt. 1.
EX-1032	Hinton <i>et al.</i> Distilling the Knowledge in a Neural Network, arXiv:1503.02531v1 [stat.ML], March 2015. (“Hinton”)
EX-1033	C. Bucilua, R. Caruana, and A. Niculescu-Mizil. “Model Compression.” <i>KDD 2006: In Proceedings of the 12th ACM SIGKDD International Conference on Knowledge</i>

	<i>Discovery and Data Mining, (KDD), Philadelphia, PA, USA, August 20-23, pages 535–541, 2006 (pp. 535–541). (“Bucilua”)</i>
EX-1034	[Reserved]
EX-1035	Fleet <i>et al.</i> , “Design and Use of Linear Models for Image Motion Analysis.” <i>International Journal of Computer Vision</i> , volume 36, issue 3, 2000 (pp. 171-193). Kluwer Academic Publishers. (“Fleet”)
EX-1036	Wulff <i>et al.</i> “Efficient Sparse-to-Dense Optical Flow Estimation using a Learned Basis and Layers.” <i>CVPR 2015: IEEE/CVF Conference on Computer Vision and Pattern Recognition, Boston, MA, USA, 7-12 June 2015 (pp. 120-130). (“Wulff”)</i>
EX-1037	Burt <i>et al.</i> “A Multiresolution Spline With Application to Image Mosaics.” <i>ACM Transactions on Graphics</i> , volume 2, issue 4, October 1983 (pp. 217-236). (“Burt”)
EX-1038	Giger <i>et al.</i> , “Gaze correction with a single webcam.” <i>ICME 2014: IEEE International Conference on Multimedia and Expo, Chengdu, China, July 14-18, 2014. (“Giger”)</i>
EX-1039	Ho <i>et al.</i> “Gaze correction using 3D video processing for videoconferencing.” <i>ChinaSIP 2015: China Summit and International Conference on Signal and Information Processing, Chengdu, China, July 12-15, 2015 (pp. 496-499). (“Ho”)</i>
EX-1040	Jain. <i>Fundamentals of Digital Image Processing</i> . Prentice-Hall, Inc., 1989 (excerpted). (“Jain”)

EX-1041	Vetterli <i>et al.</i> Wavelets and Subband Coding. Prentice-Hall, Inc., 1995 (excerpted). (“Vetterli”)
EX-1042	Dodge and Karam. Introduction to Machine Learning and Deep Learning: A Hands-On Starter’s Guide, 2017; revised 2019. Available online at https://deeplearningtextbook.org/ . (“Dodge”)
EX-1043	Goodfellow <i>et al.</i> Deep Learning, MIT Press, 2016. Available online at https://www.deeplearningbook.org/ (excerpted). (“Goodfellow”)
EX-1044	Murphy. Machine Learning: A Probabilistic Perspective, MIT Press, 2012. (“Murphy”)
EX-1045	Sonka <i>et al.</i> Image Processing, Analysis, and Machine Vision, 4 th edition, Cengage Learning, 2015.
EX-1046	U.S. Patent No. 10,043,088 (“Odry”)
EX-1047	Microsoft Computer Dictionary, fourth edition, 1999 (excerpted)
EX-1048	Internet Archive affidavit w exhibits
EX-1049	[Reserved]
EX-1050	Webpage printout at: https://link.springer.com/book/10.1007/978-3-319-46475-6 (Webpage Computer Vision – ECCV 2016)

EX-1051	Webpage printout at: https://asp-urasipjournals.springeropen.com/articles/10.1155/2010/680623 (SpringerOpen, Liu)
EX-1052	Webpage printout at: https://dl.acm.org/doi/abs/10.1155/2010/680623# (ACM, Liu)
EX-1053	U.S. Patent No. 9,338,449 to Joel Sole Rojals, Rajan Laxman Joshi, and Marta Karczewicz (“Rojals”)
EX-1054	U.S. Patent Application Publication No. 2008/0043833 A1 to Jane Perera and Joseph D. Young (“Perera”)
EX-1055	Joint Claim Construction and Prehearing Statement: <i>RealD Spark, LLC v. Microsoft Corporation</i> , WDWA-2-22-cv-00942, Dkt. 59.
EX-1056	George Wolberg, Digital Image Warping, IEEE Computer Society Press, 1990.
EX-1057	Webpage printout at: https://ieeexplore.ieee.org/document/7299098 (Learning to look up: Realtime monocular gaze correction using machine learning)
EX-1058	Webpage printout at: https://ieeexplore.ieee.org/document/6890306 (Gaze correction with a single webcam)
EX-1059	U.S. Patent No. 11,523,004 to Darrel Cherry, Renee Jessome, Richard Maggard, Daniel Siddall, Yeshwanth Raja, and Eli Saber

EX-1060	Sharma et al. Convolutional Neural Network Compression via Dynamic Parameter Rank Pruning, arXiv:2401.08014v1 [cs.CV], January 2024.
EX-1061	Deposition Transcript of Dr. Eli Saber dated June 5, 2024
EX-1062	Continued Deposition Transcript of Dr. Eli Saber dated June 7, 2024 (continuation of the Deposition Transcript on June 5, 2024)
<i>EX-1063</i>	<i>Petitioner's Demonstratives</i>

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. 42.6(4), lead counsel for Petitioner hereby certifies that a complete and entire copy of **PETITIONER'S UPDATED EXHIBIT LIST** and **Exhibit 1063** were sent on September 11, 2024, via email on Patent Owner's counsel of record in this proceeding:

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Respectfully Submitted,

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