Changil Kim | Curriculum Vitæ

changilkim.com
changil@csail.mit.edu
Google Scholar | IMDb | LinkedIn

EXPERIENCE

Aug. 2022 – *present* **Staff Research Scientist** — *Seattle, WA, USA*
Meta

Sept. 2019 – Aug. 2022 **Senior Research Scientist** — *Seattle, WA, USA*
Facebook ▸ Meta

Apr. 2018 – July 2019 **Postdoctoral Associate** — *Cambridge, MA, USA*
Massachusetts Institute of Technology (MIT)

Oct. 2016 – Mar. 2018 **Postdoctoral Fellow** — *Cambridge, MA, USA*
Massachusetts Institute of Technology (MIT)

Sept. 2015 – Aug. 2016 **Postdoctoral Researcher** — *Zurich, Switzerland*
Eidgnössische Technische Hochschule Zürich (ETH Zurich)

Dec. 2010 – Aug. 2015 **Research Assistant** — *Zurich, Switzerland*
Disney Research

June 2009 – Jan. 2010 **Research Intern** — *Zurich, Switzerland*
Disney Research

Jan. 2005 – Aug. 2008 **Research Engineer** — *Seoul, Korea*
SK Telecom

Feb. 2000 – Mar. 2003 **Software Engineer** — *Seoul, Korea*
Insung Information

Feb. 1999 – Dec. 1999 **Software Engineer** — *Seoul, Korea*
Cyberbank

EDUCATION

Aug. 2015 **Doctor of Sciences** — *Zurich, Switzerland*
Eidgnössische Technische Hochschule Zürich (ETH Zurich)
- Advisors: Markus Gross and Alexander Sorkine-Hornung

Nov. 2010 **Master of Science in Computer Science** — *Zurich, Switzerland*
Eidgnössische Technische Hochschule Zürich (ETH Zurich)
- Advisors: Markus Gross, Wojciech Matusik, and Simon Heinzle

Feb. 2005 **Bachelor of Science in Computer Science** — *Daejeon, Korea*
Korea Advanced Institute of Science and Technology (KAIST)
- Advisors: Kilnam Chon and Chin-Wan Chung

HONORS AND AWARDS

June 2019 **Sony Focused Research Award** — *New York, NY, USA*
Sony Corporation; *USD 150,000*

Oct. 2016 **Postdoctoral Fellowship** — *Bern, Switzerland*
Swiss National Science Foundation (SNSF); *CHF 101,700*

Oct. 2016 **Best Paper Award** — *Stanford, CA, USA*
International Conference on 3D Vision

Sept. 2015 **Recognition as Top 10% Paper** — *Québec City, QC, Canada*
IEEE International Conference on Image Processing

Dec. 2011 **Back Cover Image** — *New York, NY, USA*
ACM Transactions on Graphics (Proceedings of ACM SIGGRAPH Asia)

Apr. 2007 **IR52 Jang Young Shil Award** *Seoul, Korea*
Ministry of Science and Technology of the Republic of Korea

Dec. 2006 **Korea Internet Award** *Seoul, Korea*
Ministry of Information and Communication of the Republic of Korea; *Presidential Prize*

Nov. 2006 **New Radio Technology Award** *Seoul, Korea*
Korea Radio Promotion Association; *Minister of Information and Communication Prize*

PRODUCT IMPACT AND MOVIE CREDITS

2025 – 2026 **"Hyperscape,"** Meta
Production 3DGS capture, reconstruction, and on-device VR rendering for immersive experience

2025 **"Future of Media Experience,"** Meta
Volumetric immersive 3D videos demo to Meta leadership (inlcuding CEO & CTO) and media industry executives

2015 **"Cinderella,"** Walt Disney Pictures, Visual Effects
3D set and prop scanning

2014 **"Maleficent,"** Walt Disney Pictures, Visual Effects
3D set scanning

2012 – 2016 **"Maru Set Scanning,"** Disney Enterprises, Inc.
A complete 3D reconstruction hardware/software package used for various movie productions in Disney studios

PUBLICATIONS

June 2025 Brian Chao, Hung-Yu Tseng, Lorenzo Porzi, Chen Gao, Tuotuo Li, Qinbo Li, Ayush Saraf, Jia-Bin Huang, Johannes Kopf, Gordon Wetzstein, **Changil Kim.**
"Textured Gaussians for Enhanced 3D Scene Appearance Modeling."
Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

June 2025 Zhi-Hao Lin, Jia-Bin Huang, Zhengqin Li, Zhao Dong, Christian Richardt, Tuotuo Li, Michael Zollhöfer, Johannes Kopf, Shenlong Wang, **Changil Kim.**
"IRIS: Inverse Rendering of Indoor Scenes from Low Dynamic Range Images."
Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

June 2025 Hyunho Ha, Lei Xiao, Christian Richardt, Thu Nguyen-Phuoc, **Changil Kim,** Min H. Kim, Douglas Lanman, Numair Khan.
"Geometry-guided Online 3D Video Synthesis with Multi-View Temporal Consistency."
Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

Dec. 2024 Chen Gao, Yipeng Wang, **Changil Kim,** Jia-Bin Huang, Johannes Kopf.
"Planar Reflection-Aware Neural Radiance Fields."
Proceedings of ACM SIGGRAPH Asia

Sept. 2024 Chieh Hubert Lin, **Changil Kim,** Jia-Bin Huang, Qinbo Li, Chih-Yao Ma, Johannes Kopf, Ming-Hsuan Yang, Hung-Yu Tseng.
"Taming Latent Diffusion Model for Neural Radiance Field Inpainting."
Proceedings of European Conference on Computer Vision (ECCV)

July 2024 Meng-Li Shih, Jia-Bin Huang, **Changil Kim,** Rajvi Shah, Johannes Kopf, Chen Gao.
"Modeling Ambient Scene Dynamics for Free-view Synthesis."
Proceedings of ACM SIGGRAPH

June 2024 Jaehoon Choi, Rajvi Shah, Qinbo Li, Yipeng Wang, Ayush Saraf, **Changil Kim,** Jia-Bin Huang, Dinesh Manocha, Suhib Alsisan, Johannes Kopf.
"LTM: Lightweight Textured Mesh Extraction and Refinement of Large Unbounded Scenes for Efficient Storage and Real-time Rendering."
Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

June 2024 Yu-Ying Yeh, Jia-Bin Huang, **Changil Kim,** Lei Xiao, Thu Nguyen-Phuoc, Numair Khan, Cheng Zhang, Manmohan Chandraker, Carl S. Marshall, Zhao Dong, Zhengqin Li.
"TextureDreamer: Image-guided Texture Synthesis through Geometry-aware Diffusion."
Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

June 2024 Li Ma, Vasu Agrawal, Haithem Turki, **Changil Kim,** Chen Gao, Pedro V. Sander, Michael Zollhöfer, Christian Richardt.
"SpecNeRF: Gaussian Directional Encoding for Specular Reflections."
Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

Dec. 2023 Badour AlBahar, Shunsuke Saito, Hung-Yu Tseng, **Changil Kim,** Johannes Kopf, Jia-Bin Huang.
"Single-Image 3D Human Digitization with Shape-Guided Diffusion."
Proceedings of ACM SIGGRAPH Asia

Dec. 2023 Linning Xu, Vasu Agrawal, William Laney, Tony Garcia, Aayush Bansal, **Changil Kim,** Samuel Rota Bulò, Lorenzo Porzi, Peter Kontschieder, Aljaž Božič, Dahua Lin, Michael Zollhöfer, Christian Richardt.
"VR-NeRF: High-Fidelity Virtualized Walkable Spaces."
Proceedings of ACM SIGGRAPH Asia

Oct. 2023 Geng Lin, Chen Gao, Jia-Bin Huang, **Changil Kim,** Yipeng Wang, Matthias Zwicker, Ayush Saraf.
"OmnimatteRF: Robust Omnimatte with 3D Background Modeling."
Proceedings of IEEE/CVF International Conference on Computer Vision (ICCV)

June 2023 Benjamin Attal, Jia-Bin Huang, Christian Richardt, Michael Zollhöfer, Johannes Kopf, Matthew O'Toole, **Changil Kim.**
"HyperReel: High-Fidelity 6-DoF Video with Ray-Conditioned Sampling."
Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), ***highlight***

June 2023 Andreas Meuleman, Yu-Lun Liu, Chen Gao, Jia-Bin Huang, **Changil Kim,** Min H. Kim, Johannes Kopf.
"Progressively Optimized Local Radiance Fields for Robust View Synthesis."
Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

June 2023 Yu-Lun Liu, Chen Gao, Andreas Meuleman, Hung-Yu Tseng, Ayush Saraf, **Changil Kim,** Yung-Yu Chuang, Johannes Kopf, Jia-Bin Huang.
"Robust Dynamic Radiance Fields."
Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

June 2023 Hung-Yu Tseng, Qinbo Li, **Changil Kim,** Suhib Alsisan, Jia-Bin Huang, Johannes Kopf.
"Consistent View Synthesis with Pose-Guided Diffusion Models."
Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

Nov. 2022 Liang Shi, Richard Webb, Lei Xiao, **Changil Kim,** Changwon Jang.
"Neural Compression for Hologram Images and Videos."
Optics Letters, 47(22)

June 2022 Benjamin Attal, Jia-Bin Huang, Michael Zollhöfer, Johannes Kopf, **Changil Kim.**
"Learning Neural Light Fields with Ray-Space Embedding."
Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

June 2022 Xuejian Rong, Jia-Bin Huang, Ayush Saraf, **Changil Kim,** Johannes Kopf.
"Boosting View Synthesis with Residual Transfer."
Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

June 2022 Tianye Li, Mira Slavcheva, Michael Zollhöfer, Simon Green, Christoph Lassner, **Changil Kim,** Tanner Schmidt, Steven Lovegrove, Michael Goesele, Richard Newcombe, Zhaoyang Lv.
"Neural 3D Video Synthesis from Multi-view Video."
Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), ***oral presentation***

Dec. 2021 Benjamin Attal, Eliot Laidlaw, Aaron Gokaslan, **Changil Kim,** Christian Richardt, James Tompkin, Matthew O'Toole.
"TöRF: Time-of-Flight Radiance Fields for Dynamic Scene View Synthesis."
Advances in Neural Information Processing Systems (NeurIPS)

Nov. 2021 Peiye Zhuang, Jia-Bin Huang, Ayush Saraf, Xuejian Rong, **Changil Kim,** Denis Demandolx.
"AMICO: Amodal Instance Composition."
Proceedings of British Machine Vision Conference (BMVC)

June 2021 Wenqi Xian, Jia-Bin Huang, Johannes Kopf, **Changil Kim.**
"Space-time Neural Irradiance Fields for Free-Viewpoint Video."
Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

Mar. 2021 Liang Shi, Beichen Li, **Changil Kim,** Petr Kellnhofer, Wojciech Matusik.
"Towards Real-time Photorealistic 3D Holography with Deep Neural Networks."
Nature, 591(7849)

June 2019 Tae-Hyun Oh*, Tali Dekel*, **Changil Kim*,** Inbar Mosseri, William T. Freeman, Michael Rubinstein, Wojciech Matusik.
"Speech2Face: Learning the Face Behind a Voice."
*Proceedings of IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), *equal contributions*

Dec. 2018 **Changil Kim,** Hijung Valentina Shin, Tae-Hyun Oh, Alexandre Kaspar, Mohamed Elgharib, Wojciech Matusik.
"On Learning Associations of Faces and Voices."
Proceedings of Asian Conference on Computer Vision (ACCV)

Dec. 2018 Liang Shi, Vahid Babaei, **Changil Kim,** Michael Foshey, Yuanming Hu, Pitchaya Sitthi-amorn, Szymon Rusinkiewicz, Wojciech Matusik.
"Deep Multispectral Painting Reproduction via Multi-Layer, Custom-Ink Printing."
ACM Transactions on Graphics, 37(6); Proceedings of ACM SIGGRAPH Asia

Sept. 2018 Tae-Hyun Oh*, Ronnachai Jaroensri*, **Changil Kim,** Mohamed Elgharib, Frédo Durand, William T. Freeman, Wojciech Matusik.
"Learning-based Video Motion Magnification."
*Proceedings of European Conference on Computer Vision (ECCV), *equal contributions,* ***oral presentation***

Sept. 2018 Yağız Aksoy, **Changil Kim,** Petr Kellnhofer, Sylvain Paris, Mohamed Elgharib, Marc Pollefeys, Wojciech Matusik.
"A Dataset of Flash and Ambient Illumination Pairs from the Crowd."
Proceedings of European Conference on Computer Vision (ECCV)

Apr. 2018 Alexandre Kaspar, Geneviève Patterson, **Changil Kim,** Yağız Aksoy, Wojciech Matusik, Mohamed Elgharib.
"Crowd-Guided Ensembles: How Can We Choreograph Crowd Workers for Video Segmentation?"
Proceedings of ACM CHI Conference on Human Factors in Computing Systems (CHI)

Oct. 2017 Ajay Nandoriya*, Mohamed Elgharib*, **Changil Kim,** Mohamed Hefeeda, Wojciech Matusik.
"Video Reflection Removal Through Spatio-Temporal Optimization."
*Proceedings of IEEE International Conference on Computer Vision (ICCV), *equal contributions*

Oct. 2016 Kaan Yücer, **Changil Kim,** Alexander Sorkine-Hornung, Olga Sorkine-Hornung.
"Depth from Gradients in Dense Light Fields for Object Reconstruction."
Proceedings of International Conference on 3D Vision (3DV), ***oral presentation, best paper award***

Oct. 2016 Katja Wolff, **Changil Kim,** Henning Zimmer, Christopher Schroers, Mario Botsch, Olga Sorkine-Hornung, Alexander Sorkine-Hornung.
"Point Cloud Noise and Outlier Removal for Image-Based 3D Reconstruction."
Proceedings of International Conference on 3D Vision (3DV)

Sept. 2015 **Changil Kim,** Kartic Subr, Kenny Mitchell, Alexander Sorkine-Hornung, Markus Gross.
"Online View Sampling for Estimating Depth from Light Fields."
Proceedings of IEEE International Conference on Image Processing (ICIP), ***oral presentation, top 10%***

Dec. 2014 **Changil Kim,** Ulrich Müller, Henning Zimmer, Yael Pritch, Alexander Sorkine-Hornung, Markus Gross.
"Memory Efficient Stereoscopy from Light Fields."
Proceedings of International Conference on 3D Vision (3DV), ***oral presentation***

July 2013 **Changil Kim,** Henning Zimmer, Yael Pritch, Alexander Sorkine-Hornung, Markus Gross.
"Scene Reconstruction from High Spatio-Angular Resolution Light Fields."
ACM Transactions on Graphics, 32(4); Proceedings of ACM SIGGRAPH

May 2013 Simon Wenner, Jean-Charles Bazin, Alaxander Sorkine-Hornung, **Changil Kim,** Markus Gross.
"Scalable Music: Automatic Music Retargeting and Synthesis."
Computer Graphics Forum, 32(2); Proceedings of Eurographics

Dec. 2011 **Changil Kim,** Alexander Hornung, Simon Heinzle, Wojciech Matusik, Markus Gross.
"Multi-Perspective Stereoscopy from Light Fields."
ACM Transactions on Graphics, 30(6); Proceedings of ACM SIGGRAPH Asia, ***featured on the ACM TOG back cover***

THESES

Aug. 2015 Changil Kim. "3D Reconstruction and Rendering from High Resolution Light Fields." PhD Thesis, ETH Zurich

Sept. 2010 Changil Kim. "Scene Reconstruction from a Light Field." Master's Thesis, ETH Zurich

Dec. 2004 Changil Kim. "Streaming High-Definition Television over the Wired Network." Bachelor's Thesis, KAIST

U.S. PATENTS

2025 "Learning neural light fields with ray-space embedding networks." **US 12,327,308**

2025 "Neural 3D video synthesis." **US 12,243,273**

2023 "Systems and methods for computer-generated hologram image and video compression." **US 2023/0305489,** pending

2023 "Space-time representation of dynamic scenes." **US 11,748,940**

2021 "Object reconstruction from dense light fields via depth from gradients." **US 10,887,581**

2019 "Point cloud noise and outlier removal for image-based 3D reconstruction (continuation)." **US 10,319,080**

2018 "Object reconstruction from dense light fields via depth from gradients (continuation)." **US 10,122,994**

2018 "Point cloud noise and outlier removal for image-based 3D reconstruction." **US 10,074,160**

2017 "Scene reconstruction from high spatio-angular resolution light fields." **US 9,786,062**

2017 "Multi-perspective stereoscopy from light fields (division)." **US 9,843,776**

2015 "Multi-perspective stereoscopy from light fields (continuation-in-part)." **US 9,165,401**

2015 "Multi-perspective stereoscopy from light fields." **US 9,113,043**

2012 "System for maintaining the broadcasting information in USIM unlock environment and method thereof." **US 8,311,516**

PROGRAM COMMITTEE

2025 ACM SIGGRAPH Asia Courses *Hong Kong, China*

2016 IEEE International Workshop on Computational Cameras and Displays *Las Vegas, NV, USA*

REFEREE SERVICE

ACM SIGGRAPH
ACM SIGGRAPH Asia
Computer Graphics Forum
Computers
Computers & Graphics
Eurographics
European Conference on Computer Vision
High Performance Graphics
IEEE Journal of Selected Topics in Signal Processing
IEEE Transactions on Circuits and Systems for Video Technology
IEEE Transactions on Computational Imaging
IEEE Transactions on Image Processing
IEEE Transactions on Visualization and Computer Graphics
IEEE/CVF Conference on Computer Vision and Pattern Recognition
International Conference on 3D Vision
Journal of Electronic Imaging
Mobile Information Systems
Sensors

TALKS

June 2024	**CVPR Neural Volumetric Video Workshop** High-Fidelity 6-DoF 3D Videos in VR	*Seattle, WA, USA*
May 2019	**KAIST** Data-Driven Visual Computing	*Daejeon, Korea*
Apr. 2019	**Facebook Research** Data-Driven Visual Computing	*Seattle, WA, USA*
Apr. 2019	**Adobe Research** Data-Driven Visual Computing	*San Jose, CA, USA*
Mar. 2019	**Boston University** Data-Driven Visual Computing	*Boston, MA, USA*
Mar. 2019	**University of Victoria** Data-Driven Visual Computing	*Victoria, BC, Canada*
Oct. 2018	**Pigment and Color Science Forum** Deep Multispectral Painting Reproduction via Multi-Layer, Custom-Ink Printing	*Cambridge, MA, USA*
Aug. 2017	**Google Daydream Tech Talk** Plenoptics for Computer Graphics and Vision	*Mountain View, CA, USA*
Sept. 2015	**IEEE International Conference on Image Processing** Online View Sampling for Estimating Depth from Light Fields	*Québec City, QC, Canada*
Dec. 2014	**International Conference on 3D Vision** Memory Efficient Stereoscopy from Light Fields	*Tokyo, Japan*
July 2013	**ACM SIGGRAPH** Scene Reconstruction from High Spatio-Angular Resolution Light Fields	*Anaheim, CA, USA*
Dec. 2011	**ACM SIGGRAPH Asia** Multi-Perspective Stereoscopy from Light Fields	*Hong Kong, China*

TEACHING

Autumn 2018	**Co-instructor** Advanced Computer Graphics, MIT	*Cambridge, MA, USA*
Autumn 2015	**Co-instructor** Computer Graphics, ETH Zurich	*Zurich, Switzerland*
Autumn 2015	**Co-instructor** Advanced Topics in Computer Graphics and Vision, ETH Zurich	*Zurich, Switzerland*
Autumns 2011 – 2014	**Teaching Assistant** Computer Graphics, ETH Zurich	*Zurich, Switzerland*
Springs 2012 – 2014	**Teaching Assistant** Informatik I, ETH Zurich	*Zurich, Switzerland*
Spring 2011	**Teaching Assistant** Design of Digital Circuits, ETH Zurich	*Zurich, Switzerland*

STUDENT MENTORING

2025	Yen-Chi Cheng *Research Intern at Meta*	*Bellevue, WA, USA*
2025	Sally (Chuhan) Chen *Research Intern at Meta*	*Seattle, WA, USA*
2024	Hyunho Ha *Research Intern at Meta*	*Redmond, WA, USA*
2024	Brian Chao *Research Intern at Meta*	*Seattle, WA, USA*

2023	Yu-Ying Yeh *Research Intern at Meta*	*Redmond, WA, USA*
2023	Zhiwen Fan *Research Intern at Meta*	*Redmond, WA, USA*
2023	Li Ma *Research Intern at Meta*	*Pittsburgh, PA, USA*
2023	Linning Xu *Research Intern at Meta*	*Pittsburgh, PA, USA*
2023	Chieh Hubert Lin *Research Intern at Meta*	*Seattle, WA, USA*
2023	Jaehoon Choi *Research Intern at Meta*	*Seattle, WA, USA*
2023	Meng-Li Shih *Research Intern at Meta*	*Seattle, WA, USA*
2023	Zhi-Hao Lin *Research Intern at Meta*	*Seattle, WA, USA*
2022	Andreas Meuleman *Research Intern at Meta*	*Seattle, WA, USA*
2022	Xiaoming Zhao *Research Intern at Meta*	*Seattle, WA, USA*
2022	Yu-Lun Liu *Research Intern at Meta*	*Seattle, WA, USA*
2022	Chris Rockwell *Research Intern at Meta*	*Seattle, WA, USA*
2022	Geng Lin *Research Intern at Meta*	*Seattle, WA, USA*
2022	Ishit Mehta *Research Intern at Meta*	*Seattle, WA, USA*
2022	Badour AlBahar *Research Intern at Meta*	*Remote*
2021	Liang Shi *Research Intern at Meta*	*Remote*
2021, 2022	Benjamin Attal *Research Intern at Meta*	*Remote*
2020	Xiaolu Guo *Engineering Intern at Meta*	*Remote*
2020	Peiye Zhuang *Research Intern at Meta*	*Remote*
2020	Tianye Li *Research Intern at Meta*	*Remote*
2020, 2021	Wenqi Xian *Research Intern at Meta*	*Remote*
2018	Andy Wang *MEng student at MIT*	*Cambridge, MA, USA*
2018	Liang Shi *PhD student at MIT*	*Cambridge, MA, USA*
2016	Hui Qiao *Visiting PhD student from Tsinghua University at MIT*	*Cambridge, MA, USA*
2016	Jonathan Forman *Master student at ETH Zurich*	*Zurich, Switzerland*
2015	Kaan Yücer *PhD student at ETH Zurich*	*Zurich, Switzerland*

2015	Katja Wolff *Intern at Disney Research*	*Zurich, Switzerland*
2013	Matan Zohar *Intern at Disney Research*	*Zurich, Switzerland*
2013	Guo Qi *Visiting bachelor student from Tsinghua University at ETH Zurich*	*Zurich, Switzerland*
2012	Werner Randelshofer *Master student at ETH Zurich*	*Zurich, Switzerland*
2012	Ulrich Müller *Master student at ETH Zurich*	*Zurich, Switzerland*
2012	Christian Reiter *Bachelor student at ETH Zurich*	*Zurich, Switzerland*

Seattle, July 2026