

Jiawen Chen

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San Jose, CA 95110

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Experience

Adobe Inc., *Emerging Products Group*, San Jose, CA
Computational Photography Group (Nextcam)
Senior Computer Scientist II (September 2020 - Present)

Google LLC., *Google Research*, Mountain View, CA
Computational Photography Group (Gcam)
Staff Software Engineer (June 2015 - September 2020)

Google LLC., *Google X*, Mountain View, CA
Computational Photography Group (Gcam)
Software Engineer (June 2013 - June 2015)

Microsoft Corporation, *Microsoft Research*, Cambridge, UK
Computer Mediated Living Group, Interactive 3D Technologies Group
Postdoctoral Researcher (September 2011 - June 2013)
Supervisor: Shahram Izadi

Massachusetts Institute of Technology, Cambridge, MA
Computer Science and Artificial Intelligence Laboratory, Graphics Group
Graduate Research Assistant (September 2004 - June 2011)
Teaching Assistant: *6.837 - Computer Graphics* (Fall 2010)
Undergraduate Research Assistant (May–December 2002, Fall 2003)
Media Laboratory, Sociable Media Group
Undergraduate Research Assistant (Spring 2002)

NVIDIA Corporation, *NVIDIA Research*, Santa Clara, CA
Computer Graphics Research Intern (Summer 2010)

Microsoft Corporation, *Microsoft Research*, Redmond, WA
Interactive Visual Media Research Intern (Summer 2009)

Adobe Systems, Inc., *Advanced Technology Lab*, Newton, MA
Graphics and Vision Research Intern (Summer 2008)

Adobe Systems, Inc., *Graphics Research Group*, Newton, MA
Graphics and Vision Research Intern (Summer 2007)

Apple Computer, Inc., *Graphics and Imaging Group*, Cupertino, CA
Software Engineering Intern (Summer 2005)

Google, Inc., *Google Desktop*, Mountain View, CA
Software Engineering Intern (Summer 2004)

Microsoft Corporation, *Netgen Group*, Redmond, WA
Software Design Engineer Intern (Summer 2003)

National High Magnetic Field Laboratory,
Electron Paramagnetic Resonance Group, Tallahassee, FL
Undergraduate Research Assistant (Summer 2001)

Education **Massachusetts Institute of Technology**, Cambridge, MA
Doctor of Philosophy: Electrical Engineering and Computer Science (2011)
Advisor: Frédo Durand
Thesis: *Efficient Data Structures for Piecewise-smooth Video Processing*

Massachusetts Institute of Technology, Cambridge, MA
Master of Engineering: Electrical Engineering and Computer Science (2005)
Advisor: Frédo Durand
Thesis: *Load-balanced Rendering on a General-Purpose Tiled Architecture*

Massachusetts Institute of Technology, Cambridge, MA
Bachelor of Science: Electrical Engineering and Computer Science (2004)
Bachelor of Science: Physics (2004)
Minor: Mathematics

Stuyvesant High School, Class of 2000, New York, NY

Publications *Splatting-based Synthesis for Video Frame Interpolation*
Simon Niklaus, Ping Hu, Jiawen Chen
IEEE Winter Conference on Applications of Computer Vision (WACV 2023)

Neural Photo-Finishing
Ethan Tseng, Yuxuan Zhang, Lars Jebe, Cecilia Zhang, Zhihao Xia,
Yifei Fan, Felix Heide, Jiawen Chen
ACM Transactions on Graphics (SIGGRAPH Asia 2022)

*The Implicit Values of A Good Hand Shake:
Handheld Multi-Frame Neural Depth Refinement*
Ilya Chugunov, Yuxuan Zhang, Zhihao Xia, Xuaner (Cecilia) Zhang,
Jiawen Chen, Felix Heide
IEEE Computer Vision and Pattern Recognition (CVPR 2022, Oral)

Defocus Map Estimation and Deblurring from a Single Dual-Pixel Image
Shumian Xin, Neal Wadhwa, Tianfan Xue, Jonathan T. Barron,
Pratul P. Srinivasan, Jiawen Chen, Ioannis Gkioulekas, Rahul Garg
International Conference on Computer Vision (ICCV 2021)

How to Train Neural Networks for Flare Removal
Yicheng Wu, Qiurui He, Tianfan Xue, Rahul Garg, Jiawen Chen,
Ashok Veeraraghavan, Jonathan T. Barron
International Conference on Computer Vision (ICCV 2021)

Real-time Localized Photorealistic Video Style Transfer
Xide Xia, Tianfan Xue, Wei-sheng Lai, Zheng Sun, Abby Chang,
Brian Kulis, Jiawen Chen
IEEE Winter Conference on Applications of Computer Vision (WACV 2021)
Joint Bilateral Learning for Real-time Universal Photorealistic Style Transfer
Xide Xia, Meng Zhang, Tianfan Xue, Zheng Sun, Hui Fang,
Brian Kulis, Jiawen Chen
European Conference on Computer Vision (ECCV 2020)

Stereoscopic Dark Flash for Low-light Photography
Jian Wang, Tianfan Xue, Jonathan T. Barron, Jiawen Chen
IEEE International Conference on Computational Photography (ICCP 2019)

Wireless Software Synchronization of Multiple Distributed Cameras
Sameer Ansari, Neal Wadhwa, Rahul Garg, Jiawen Chen
IEEE International Conference on Computational Photography (ICCP 2019)

Unprocessing Images for Learned Raw Denoising
Tim Brooks, Ben Mildenhall, Tianfan Xue, Jiawen Chen,
Dillon Sharlet, Jonathan T. Barron
IEEE Computer Vision and Pattern Recognition (CVPR 2019)

Burst Denoising with Kernel Prediction Networks
Ben Mildenhall, Jonathan T. Barron, Jiawen Chen, Dillon Sharlet,
Ren Ng, Robert Carroll
IEEE Computer Vision and Pattern Recognition (CVPR 2018)

Deep Bilateral Learning for Real-Time Image Enhancement
Michaël Gharbi, Jiawen Chen, Jonathan T. Barron, Samuel W. Hasinoff,
Frédo Durand
ACM Transactions on Graphics (SIGGRAPH 2017)

Bilateral Guided Upsampling
Jiawen Chen, Andrew Adams, Neal Wadhwa, Samuel W. Hasinoff
ACM Transactions on Graphics (SIGGRAPH Asia 2016)

Burst Photography for High Dynamic Range and Low-light Imaging
textiton Mobile Cameras

Samuel W. Hasinoff, Dillon Sharlet, Ryan Geiss, Andrew Adams,
Jonathan T. Barron, Florian Kainz, Jiawen Chen, Marc Levoy
ACM Transactions on Graphics (SIGGRAPH Asia 2016)

Do-It-Yourself Lighting Design for Product Videography
IEEE International Conference on Computational Photography (ICCP 2016)

Scalable Real-time Volumetric Surface Reconstruction
Jiawen Chen, Dennis Bautembach, Shahram Izadi
ACM Transactions on Graphics (SIGGRAPH 2013)

KinÊtre: Animating the World with the Human Body
Jiawen Chen, Shahram Izadi, Andrew Fitzgibbon
ACM Symposium on User Interface Software and Technology (UIST 2012)

*Digits: Freehand 3D Interactions Anywhere Using a Wrist-Worn
Gloveless Sensor*
David Kim, Otmar Hilliges, Shahram Izadi, Alex Butler, Jiawen Chen,
Iason Oikonomidis, Patrick Olivier
ACM Symposium on User Interface Software and Technology (UIST 2012)

Temporal Light Field Reconstruction for Rendering Distribution Effects
Jaakko Lehtinen, Timo Aila, Jiawen Chen, Samuli Laine, Frédo Durand
ACM Transactions on Graphics (SIGGRAPH 2011)

Decoupled Sampling for Real-Time Graphics Pipelines
Jonathan Ragan-Kelley, Jaakko Lehtinen, Jiawen Chen, Michael Doggett,
Frédo Durand
ACM Transactions on Graphics (TOG 2011, presented at SIGGRAPH)

*The Video Mesh: A Data Structure for Image-based Three-dimensional
Video Editing*
Jiawen Chen, Sylvain Paris, Jue Wang, Wojciech Matusik, Michael Cohen,
Frédo Durand
IEEE International Conference on Computational Photography (ICCP 2011)

Real-Time Volumetric Shadows using 1D Min-Max Mipmaps
Jiawen Chen, Ilya Baran, Frédo Durand, Wojciech Jarosz
ACM Symposium on Interactive 3D Graphics and Games (I3D 2011)
Best paper presentation award

A Hierarchical Volumetric Shadow Algorithm for Single Scattering

Ilya Baran, Jiawen Chen, Jonathan Ragan-Kelley, Frédo Durand,
Jaakko Lehtinen
ACM Transactions on Graphics (SIGGRAPH Asia 2010)

Real-time Edge-Aware Image Processing with the Bilateral Grid
Jiawen Chen, Sylvain Paris, Frédo Durand
ACM Transactions on Graphics (SIGGRAPH 2007)

Texture Transfer Using Geometry Correlation
Tom Mertens, Jan Kautz, Jiawen Chen, Philippe Bekaert, Frédo Durand
Eurographics Symposium on Rendering (EGSR 2006)

A Reconfigurable Architecture for Load-Balanced Rendering
Jiawen Chen, Michael I. Gordon, William Thies, Matthias Zwicker,
Kari Pulli, Frédo Durand
ACM SIGGRAPH / Eurographics Graphics Hardware 2005 (GH 2005)

Pervasive Pose-Aware Applications and Infrastructure
Seth Teller, Jiawen Chen, Hari Balakrishnan
IEEE Computer Graphics and Applications, Vol. 23, No. 4. (CG&A 2003)

Teaching TA for MIT 6.837: Introduction to Computer Graphics (2010)
Guest lecturer for MIT 6.839: Advanced Computer Graphics Course (2006)

Invited Talks Industrial Light and Magic (2012)
Pixar Animation Studios (2012)
University College London (2011)
Dartmouth College (2014)

Honors Intel Corporation Ph.D. Fellowship (2009)
National Science Foundation Graduate Research Fellowship (2005-2007)
NVIDIA Fellowship (2005)

Professional Activities Program Committee: SIGGRAPH 2023, SIGGRAPH 2022,
3DIMPVT 2012, ICCV 2011
Reviewer: SIGGRAPH, SIGGRAPH Asia, Eurographics, HPG, I3D, CVPR
ICCV, ECCV, PAMI, ICCP, TCVG, TVCJ, TIP, Applied Optics

Service MIT Student Information Processing Board (2009-Present)
MIT IS&T Residential Computing Consultant (2003-2006)
Sidney-Pacific Graduate Residence: IT Chair (2006)
Sidney-Pacific Graduate Residence: Webmaster (2005)

Personal Citizenship: United States
Languages Spoken: English (fluent), Mandarin Chinese (proficient)