Wei-Sheng (Jason) Lai

Email | Homepage | Google Scholar | GitHub | Linkedin

Experience

Google LLC — *Mountain View, CA, USA*

Staff Software Engineer — *May 2024 - Present*

Senoir Software Engineer — *Nov. 2021 - April 2024*

Software Engineer — *Aug. 2019 - Oct. 2021*

Enhance mobile camera imaging quality by computational photography, computer vision, and on-device ML optimization.

- Super Res Zoom (since Pixel 7) [Pixel 7 Luanch]
- Face Unblur (since Pixel 6, SIGGRAPH 2022) [Pixel 6 Luanch]
- Post-ISP Image/Video Denoising (since Pixel 6)
- Face Distortion Correction (SIGGRAPH 2019, TIP 2021)

Nvidia — *Santa Clara, CA, USA*

Research Intern — *Sep 2017 - Nov. 2017, May 2018 - Nov. 2018*

- Wide-baseline video stitching for linear camera arrays (BMVC 2019)

Adobe — *San Jose, CA, USA*

Research Intern — *May 2017 - Aug. 2017*

- Blind video temporal consistency (ECCV 2018)

Microsoft — *Redmond, WA, USA*

Research Intern — *May 2016 - Aug. 2016*

- Hyperlapse generation from 360° video (TVCG 2018)

Education

Ph.D	**University of California, Merced,** Electrical Engineering and Computer Science, *California, USA*	*2015 - 2019*
M.S	**National Taiwan University,** Communication Engineering, *Taipei, Taiwan*	*2012 - 2014*
B.S	**National Taiwan University,** Electrical Engineering, *Taipei, Taiwan*	*2008 - 2012*

Selected Publications

Conferences

Efficient Hybrid Zoom using Camera Fusion on Mobile Phones — *SIGGRAPH Asia, 2023*

Xiaotong Wu, Wei-Sheng Lai, YiChang Shih, Charles Herrmann, Michael Krainin, Deqing Sun, and Chia-Kai Liang

Vision Transformer for NeRF-Based View Synthesis from a Single Input Image — *WACV 2023*

Kai-En Lin, Lin Yen-Chen, Wei-Sheng Lai, Tsung-Yi Lin, YiChang Shih, and Ravi Ramamoorthi

Face Deblurring using Dual Camera Fusion on Mobile Phones — *SIGGRAPH, 2022*

Wei-Sheng Lai, YiChang Shih, Lun-Cheng Chu, Xiaotong Wu, Sung-Fang Tsai, Michael Krainin, Deqing Sun, and Chia-Kai Liang

Stylizing 3D Scene via Implicit Representation and HyperNetwork — *WACV, 2022*

Pei-Ze Chiang, Meng-Shiun Tsai, Hung-Yu Tseng, Wei-Sheng Lai, and Wei-Chen Chiu

Deep Online Fused Video Stabilization — *WACV, 2022*

Zhenmei Shi, Fuhao Shi, Wei-Sheng Lai, Chia-Kai Liang and Yingyu Liang

Hybrid Neural Fusion for Full-frame Video Stabilization — *ICCV, 2021*

Yu-Lun Liu, Wei-Sheng Lai, Ming-Hsuan Yang, Yung-Yu Chuang, and Jia-Bin Huang

Real-time Localized Photorealistic Video Style Transfer — *WACV, 2021*

Xide Xia, Tianfan Xue, Wei-Sheng Lai, Zheng Sun, Abby Chang, Brian Kulis and Jiawen Chen

Dual-Stream Fusion Network for Spatiotemporal Video Super-Resolution — *WACV, 2021*

Min-Yuan Tseng, Yen-Chung Chen, Yi-Lun Lee, Wei-Sheng Lai, Yi-Hsuan Tsai and Wei-Chen Chiu

Single-Image HDR Reconstruction by Learning to Reverse the Camera Pipeline — *CVPR, 2020*

Yu-Lun Liu, Wei-Sheng Lai*, Yu-Sheng Chen, Yi-Lung Kao, Ming-Hsuan Yang, Yung-Yu Chuang, and Jia-Bin Huang*

Learning to See Through Obstructions — *CVPR, 2020*

Yu-Lun Liu, Wei-Sheng Lai*, Ming-Hsuan Yang, Yung-Yu Chuang, and Jia-Bin Huang*

Visual Question Answering on 360° Images — *WACV, 2020*

Shih-Han Chou, Wei-Lun Chao, Wei-Sheng Lai, Min Sun, and Ming-Hsuan Yang

Video Stitching for Linear Camera Arrays *BMVC, 2019*
Wei-Sheng Lai, Deqing Sun, Jinwei Gu, Orazio Gallo, Ming-Hsuan Yang, and Jan Kautz

Distortion-Free Wide-Angle Portraits on Camera Phones *SIGGRAPH, 2019*
YiChang Shih, Wei-Sheng Lai, and Chia-Kai Liang

Depth-Aware Video Frame Interpolation *CVPR, 2019*
Wenbo Bao, Wei-Sheng Lai, Chao Ma, Xiaoyun Zhang, Zhiyong Gao, and Ming-Hsuan Yang

Learning Blind Video Temporal Consistency *ECCV, 2018*
Wei-Sheng Lai, Jia-Bin Huang, Oliver Wang, Eli Shechtman, Ersin Yumer, and Ming-Hsuan Yang

Gated Fusion Network for Joint Image Deblurring and Super-Resolution *BMVC, 2018*
Xinyi Zhang, Hang Dong, Zhe Hu, Wei-Sheng Lai, Fei Wang, and Ming-Hsuan Yang

Deep Semantic Face Deblurring *CVPR, 2018*
Ziyi Shen, Wei-Sheng Lai, Tingfa Xu, Jan Kautz, and Ming-Hsuan Yang

Learning a Discriminative Prior for Blind Image Deblurring *CVPR, 2018*
Lerenhan Li, Jinshan Pan, Wei-Sheng Lai, Changxin Gao, Nong Sang, and Ming-Hsuan Yang

Generating a Perspective Image from a Panoramic Image by the Swung-to-Cylinder Projection *ICIP, 2018*
Che-Han Chang, Wei-Sheng Lai, and Yung-Yu Chuang

Semi-Supervised Learning for Optical Flow with Generative Adversarial Networks *NIPS, 2017*
Wei-Sheng Lai, Jia-Bin Huang, and Ming-Hsuan Yang

Deep Laplacian Pyramid Networks for Fast and Accurate Super-Resolution *CVPR, 2017*
Wei-Sheng Lai, Jia-Bin Huang, Narendra Ahuja, and Ming-Hsuan Yang

Learning Fully Convolutional Networks for Iterative Non-blind Deconvolution *CVPR, 2017*
Jiawei Zhang, Jinshan Pan, Wei-Sheng Lai, Rynson Lau, Ming-Hsuan Yang

A Comparative Study for Single-Image Blind Deblurring *CVPR, 2016*
Wei-Sheng Lai, Jia-Bin Huang, Zhe Hu, and Ming-Hsuan Yang

Blur Kernel Estimation using Normalized Color-Line Priors *CVPR, 2015*
Wei-Sheng Lai, Jian-Jiun Ding, Yen-Yu Lin, and Yung-Yu Chuang

Journals

Deep Image Deblurring: A Survey *IJCV 2022*
Kaihao Zhang, Wenqi Ren, Wenhan Luo, Wei-Sheng Lai, Björn Stenger, Ming-Hsuan Yang and Hongdong Li

Correcting Face Distortion in Wide-Angle Videos *TIP 2021*
Wei-Sheng Lai, YiChang Shih, Chia-Kai Liang, and Ming-Hsuan Yang

Learning to See Through Obstructions with Layered Decomposition *TPAMI 2021*
Yu-Lun Liu, Wei-Sheng Lai*, Ming-Hsuan Yang, Yung-Yu Chuang, and Jia-Bin Huang*

Toward Real-World Super-Resolution via Adaptive Downsampling Models *TPAMI 2021*
Sanghyun Son, Jaeha Kim*, Wei-Sheng Lai, Ming-Hsuan Yang, and Kyoung Mu Lee*

Exploiting Semantics for Face Image Deblurring *IJCV 2020*
Ziyi Shen, Wei-Sheng Lai, Tingfa Xu, Jan Kautz, and Ming-Hsuan Yang

Gated Fusion Network for Degraded Image Super-Resolution *IJCV 2020*
Xinyi Zhang, Hang Dong, Zhe Hu, Wei-Sheng Lai, Fei Wang, and Ming-Hsuan Yang

Dynamic Scene Deblurring by Depth Guided Model *TIP 2020*
Lerenhan Li, Jinshan Pan, Wei-Sheng Lai, Changxin Gao, Nong Sang, and Ming-Hsuan Yang

MEMC-Net: Motion Estimation and Motion Compensation Driven Neural Network for Video Interpolation and Enhancement *TPAMI 2019*
Wenbo Bao, Wei-Sheng Lai, Xiaoyun Zhang, Zhiyong Gao, Ming-Hsuan Yang

Blind Image Deblurring vis Deep Discriminative Priors *IJCV 2019*
Lerenhan Li, Jinshan Pan, Wei-Sheng Lai, Changxin Gao, Nong Sang, and Ming-Hsuan Yang

Fast and Accurate Image Super-Resolution with Deep Laplacian Pyramid Networks *TPAMI 2019*
Wei-Sheng Lai, Jia-Bin Huang, Narendra Ahuja, and Ming-Hsuan Yang

Semantic-driven Generation of Hyperlapse from 360° Video *TVCG 2018*
Wei-Sheng Lai, Yujia Huang, Neel Joshi, Chris Buehler, Ming-Hsuan Yang and Sing Bing Kang

Preprints

Portrait Neural Radiance Fields from a Single Image *arXiv 2021*
Chen Gao, YiChang Shih, Wei-Sheng Lai, Chia-Kai Liang and Jia-Bin Huang

Academic Services

1^{st} and 2^{nd} 360° Perception and Interaction (360PI) Workshops	*Organizer*
SIGGRAPH, SIGGRAPH Asia, NeurIPS, CVPR, ICCV, ECCV, ACCV, WACV, AAAI	*Conference reviewer*
IJCV, TPAMI, TIP, TCVST, TMM, CVIU, DSP, PR, TCI, TVCJ	*Journal reviewer*

Honors & Awards

CVPR Doctoral Consortium Award	*2019*
Facebook PhD Fellowship Finalist	*2018*
Snap Research Fellowship Honorable Mention	*2017*
National Taiwan University Class A Scholarship	*2013*
National Taiwan University Presidential Award	*2009*