

Wei-Sheng Lai

Curriculum Vitae

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Education

- Ph.D. **University of California, Merced, CA, USA**
- 2015 – 2019, Electrical Engineering and Computer Science
 - Advisor: Ming-Hsuan Yang
 - Thesis: Learning Spatial and Temporal Visual Enhancement
- M.S. **National Taiwan University, Taipei, Taiwan**
- 2012 – 2014, Communication Engineering
- B.S. **National Taiwan University, Taipei, Taiwan**
- 2008 – 2012, Electrical Engineering

Research and Work Experience

- Student Researcher **Google Could AI, Sunnyvale, CA, USA**
- Dec. 2018 – May 2019
 - Mentors: Yichang Shih, Chia-Kai Liang, and Ming-Hsuan Yang
 - Project: Distortion-Free Wide-Angle Portraits on Camera Phones
- Research Intern **Nvidia Research, Santa Clara, CA, USA**
- May 2018 – Nov. 2018
 - Mentors: Deqing Sun, Jinwei Gu, and Orazio Gallo
 - Project: Learning to Stitch Videos
- Research Intern **Nvidia Research, Santa Clara, CA, USA**
- Sep. 2017 – Nov. 2017
 - Mentors: Ming-Hsuan Yang and Jan Kautz
 - Project: Aliasing-Aware Image Super-Resolution
- Research Intern **Adobe Research, San Jose, CA, USA**
- May 2017 - Aug. 2017
 - Mentors: Ersin Yumer, Oliver Wang and Eli Shechtman
 - Project: Learning Blind Video Temporal Consistency
- Research Intern **Microsoft Research, Redmond, WA, USA**
- May 2016 - Aug. 2016
 - Mentors: Sing Bing Kang, Neel Joshi and Chris Buehler
 - Project: Semantic-Driven Hyperlapse Generation from **360°** Videos
- Research Assistant **CSIE, National Taiwan University, Taipei, Taiwan**
- Jul. 2014 – Jul. 2015
 - Advisor: Yung-Yu Chuang
 - Projects: Content-Aware Wide-angle Image Warping, Blind Image Deblurring
- Research Assistant **Academia Sinica, Taipei, Taiwan**
- Jul. 2014 – Jun. 2015
 - Mentor: Yen-Yu Lin
 - Projects: Convolutional Neural Network for Dimensionality Reduction

Journal Publications ([Google Scholar profile](#))

- IJCV 2019 **Blind Image Deblurring vis Deep Discriminative Priors**
Lerenhan Li, Jinshan Pan, [Wei-Sheng Lai](#), Changxin Gao, Nong Sang, and Ming-Hsuan Yang
International Journal of Computer Vision (IJCV), 2019
[paper](#) [website](#)
- TPAMI 2018 **Fast and Accurate Image Super-Resolution with Deep Laplacian Pyramid Networks**
[Wei-Sheng Lai](#), Jia-Bin Huang, Narendra Ahuja, and Ming-Hsuan Yang
IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
[paper](#) [website](#)
- TVCG 2017 **Semantic-driven Generation of Hyperlapse from 360° Video**
[Wei-Sheng Lai](#), Yujia Huang, Neel Joshi, Chris Buehler, Ming-Hsuan Yang and Sing Bing Kang
IEEE Transactions on Visualization and Computer Graphics (TVCG)
[paper](#) [website](#)

Conference Publications ([Google Scholar profile](#))

- SIGGRAPH 2019 **Distortion-Free Wide-Angle Portraits on Camera Phones**
YiChang Shih, [Wei-Sheng Lai](#), and Chia-Kai Liang
ACM Transactions on Graphics (Proceedings of SIGGRAPH), 2019
[paper](#) [website](#)
- CVPR 2019 **Depth-Aware Video Frame Interpolation**
Wenbo Bao, [Wei-Sheng Lai](#), Chao Ma, Xiaoyun Zhang, Zhiyong Gao, and Ming-Hsuan Yang
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2019
[paper](#) [website](#)
- ECCV 2018 **Learning Blind Video Temporal Consistency**
[Wei-Sheng Lai](#), Jia-Bin Huang, Oliver Wang, Eli Shechtman, Ersin Yumer, and Ming-Hsuan Yang
European Conference on Computer Vision (ECCV), 2018
[paper](#) [website](#)
- BMVC 2018 **Gated Fusion Network for Joint Image Deblurring and Super-Resolution**
Oral Xinyi Zhang, Hang Dong, Zhe Hu, [Wei-Sheng Lai](#), Fei Wang, and Ming-Hsuan Yang
British Machine Vision Conference (BMVC), 2018
[paper](#) [website](#)
- CVPR 2018 **Deep Semantic Face Deblurring**
Ziyi Shen, [Wei-Sheng Lai](#), Tingfa Xu, Jan Kautz, and Ming-Hsuan Yang
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2018
[paper](#) [website](#)
- CVPR 2018 **Learning a Discriminative Prior for Blind Image Deblurring**
Lerenhan Li, Jinshan Pan, [Wei-Sheng Lai](#), Changxin Gao, Nong Sang, and Ming-Hsuan Yang
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2018
[paper](#) [website](#)
- NIPS 2017 **Semi-Supervised Learning for Optical Flow with Generative Adversarial Networks**
[Wei-Sheng Lai](#), Jia-Bin Huang, and Ming-Hsuan Yang
Neural Information Processing Systems (NIPS), 2017
[paper](#) [website](#)
- CVPR 2017 **Deep Laplacian Pyramid Networks for Fast and Accurate Super-Resolution**
[Wei-Sheng Lai](#), Jia-Bin Huang, Narendra Ahuja, and Ming-Hsuan Yang
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017
[paper](#) [website](#)
- CVPR 2017 **Learning Fully Convolutional Networks for Iterative Non-blind Deconvolution**
Jiawei Zhang, Jinshan Pan, [Wei-Sheng Lai](#), Rynson Lau, Ming-Hsuan Yang
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017
[paper](#)

- CVPR 2016 **A Comparative Study for Single-Image Blind Deblurring**
Spotlight Wei-Sheng Lai, Jia-Bin Huang, Zhe Hu, and Ming-Hsuan Yang
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2016
[📄 paper](#) [🌐 website](#) [🗣️ Talk](#)
- CVPR 2015 **Blur Kernel Estimation using Normalized Color-Line Priors**
Wei-Sheng Lai, Jian-Jiun Ding, Yen-Yu Lin, and Yung-Yu Chuang
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2015
[📄 paper](#) [🌐 website](#)

Talks

- Invited Talk **Semi-Supervised Learning for Optical Flow with Generative Adversarial Networks**
CSIE, NTU, Taipei, Taiwan, Jan. 2018.
- Invited Talk **Fast and Accurate Image Super-Resolution with Laplacian Pyramid Networks**
Advanced Computer Vision Workshop, Academia Sinica, Taipei, Taiwan, Dec. 2017.
- Guest Lecture **Deep Laplacian Pyramid Networks for Fast and Accurate Super-Resolution**
EECS282, UC Merced, USA, Aug. 2017.
- Guest Lecture **Introduction to Single-Image Super Resolution**
EECS286, UC Merced, USA, Oct. 2016.
- Spotlight **A Comparative Study for Single-Image Blind Deblurring**
CVPR, Las Vegas, USA, Jun. 2016.

Professional Activities

- Organizer
 - 2nd 360° Perception and Interaction (**360PI**) Workshop, ICCV 2019 [📄 webpage](#)
 - 1st 360° Perception and Interaction (**360PI**) Workshop, ECCV 2018 [📄 webpage](#)
- Conference Reviewer
 - IEEE International Conference on Computer Vision (**ICCV**), 2017, 2019
 - IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2017, 2018, 2019
 - European Conference on Computer Vision (**ECCV**), 2016, 2018
 - Asian Conference on Computer Vision (**ACCV**), 2016, 2018
 - Neural Information Processing Systems (**NIPS**), 2016
 - Pacific Graphics (**PG**), 2016
- Journal Reviewer
 - International Journal of Computer Vision (**IJCV**)
 - IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**)
 - IEEE Transactions on Multimedia (**TMM**)
 - IEEE Transaction on Image Processing (**TIP**)
 - IEEE Transactions on Circuits and Systems for Video Technology (**TCVST**)
 - IEEE Transactions on Geoscience and Remote Sensing (**TGRS**)
 - Transactions on Computational Imaging (**TCI**)
 - Computer Vision and Image Understanding (**CVIU**)
 - Signal, Image and Video Processing (**SIVP**)
 - Digital Signal Processing (**DSP**)
 - The Visual Computer (**TVCI**)
 - Neurocomputing
 - Journal of Electronic Imaging

Honors and Awards

- Award **Doctoral Consortium Travel Award**, CVPR 2019
- Finalist **Facebook PhD Fellowship**, Facebook Inc, Jan. 2018

Honorable Mention **Snap Research Fellowship**, Snap Inc, Dec. 2017
Scholarship **Class A Scholarship**, National Taiwan University, Sep. 2013
Top 10% of students in one academic year
Award **Presidential Award**, National Taiwan University, Jan. 2009, Jun. 2009
Top 5% of students in one semester

Teaching Experience

Teaching Assistant **EECS, University of California**, Merced, CA, USA
◦ CSE 140: Computer Architecture (Spring 2018)
◦ CSE 165: Object Oriented Programming [C++ Programming] (Spring 2017)
◦ CSE 030: Data Structure [C++ Programming] (Fall 2016)
◦ CSE 185: Introduction to Computer Vision [MATLAB programming] (Spring 2016)
◦ CSE 020: Introduction to Computing [Java Programming] (Fall 2015)

Teaching Assistant **EE/CSIE, National Taiwan University**, Taipei, Taiwan
◦ CSIE 7694: Digital Visual Effects (Spring 2015)
◦ CSIE 5098: Digital Image Synthesis (Fall 2014)
◦ EE 5163: Advanced Digital Signal Processing (Spring 2014)
◦ CommE 5030: Time-Frequency Analysis and Wavelet Transform (Fall 2013)

Technical Skills

Programming C/C++, Python
Toolbox / Software MATLAB, OpenCV, MatConvNet, Caffe, PyTorch

References

Ph.D. Advisor **Ming-Hsuan Yang**, *Professor*, University of California, Merced
✉ mhyang@ucmerced.edu [📄 homepage](#)

Research Mentor **Jia-Bin Huang**, *Assistant Professor*, Virginia Tech, Virginia
✉ jbh Huang@vt.edu [📄 homepage](#)

Research Mentor **Deqing Sun**, *Senior Research Scientist*, Nvidia
✉ deqings@nvidia.com [📄 homepage](#)

Research Mentor **Jinwei Gu**, *Senior Research Scientist*, Nvidia
✉ jinweig@nvidia.com [📄 homepage](#)

Research Mentor **Sing Bing Kang**, *Principal Researcher*, Microsoft Research, Redmond
✉ sbkang@microsoft.com [📄 homepage](#)

Research Mentor **Yung-Yu Chuang**, *Professor*, National Taiwan University, Taiwan
✉ cyy@csie.ntu.edu.tw [📄 homepage](#)

Research Mentor **Yen-Yu Lin**, *Associate Research Fellow*, Academia Sinica, Taiwan
✉ yylin@citi.sinica.edu.tw [📄 homepage](#)