Tsung-Yu Lin

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EDUCATION

PhD in Computer Science, College of Information and Computer Science
University of Massachusetts Amherst — Aug. 2014 ∼ Feb. 2020
Thesis: Higher-Order Representations for Visual Recognition

Master in Computer Science, Department of Computer Science
National Tsing Hua University, Hsinchu, Taiwan — Sep. 2008 ∼ Jun. 2010
Thesis: Combining Shape Prior with Non-Rigid SfM for Recovering Specific 3D Deformable Surface

Bachelor of Science, Department of Computer Science
National Tsing Hua University, Hsinchu, Taiwan — Sep. 2004 ∼ Jun. 2008
Major: Computer Science
Minor: Mathematics

WORKING EXPERIENCE

AI Research Scientist — Mar. 2020 ∼ present
Meta AI

Graduate Research Assistant — Sep. 2014 ∼ Feb. 2020
College of Information and Computer Science, University of Massachusetts Amherst
Supervisor: Prof. Subhransu Maji

Intern — June 2019 ∼ Aug. 2019
Facebook Applied Machine Learning
Supervisor: Prof. Alex Berg and Prof. Tamara Berg

Intern — June 2017 ∼ Nov. 2017
Amazon AWS Deep Learning
Supervisor: Prof. R. Manmatha and Prof. Deva. Ramanam

Research Assistant — Oct. 2011 ∼ May. 2014
Institute of Information Science, Academia Sinica, Taiwan
Supervisor: Dr. Tyng-Luh Liu

Political Warfare Officer — Mar. 2011 ∼ Sep. 2011
Second Lieutenant, mandatory military service at ROC Army.

Intern — Jul. 2011 ∼ Aug. 2011
Advanced Technology Development Div., MediaTek Incorporation

Graduate Research Assistant — Sep. 2008 ∼ Jun. 2010
Computer Science Department, National Tsing Hua University, Taiwan
Supervisor: Prof. Shang-Hong Lai

TEACHING EXPERIENCE

Teaching Assistant CMPSCI 370 Intorduction to Computer Vision
College of Information and Computer Sciences, UMass Amherst 2019 Spring

Teaching Assistant CMPSCI 670 Computer Vision
College of Information and Computer Sciences, UMass Amherst 2016 Fall

Teaching Assistant CS 3332 Probability and Statistics
Department of Computer Science, National Tsing Hua University 2009 Fall

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HONORS

Dissertation writing fellowship from UMass CICS
Selected to attend CVPR doctoral consortium CVPR2019
Nominated as outstanding reviewers CVPR 2018, ECCV 2022
Student Travel Grant to ICCV
The Robin Popplestone Memorial Fellowship

PUBLICATIONS

Journal

1. **Phenology of nocturnal avian migration has shifted at the continental scale**
   Kyle G Horton, Frank A La Sorte, Daniel Sheldon, Tsung-Yu Lin, Kevin Winner, Garrett Bernstein, Subhransu Maji, Wesley M Hochachka, and Andrew Farnsworth
   Nature Climate Change, December 2019
2. **MistNet: Measuring Historical Bird Migration in the US Using Archived Weather Radar Data and Convolutional Neural Networks**
   Tsung-Yu Lin, Kevin Winner, Garrett Bernstein, Abhay Mittal, Adriaan M. Dokter, Kyle G. Horton, Cecilia Nilsson, Benjamin M. Van Doren, Andrew Farnsworth, Frank A. La Sorte, Subhransu Maji, and Daniel Sheldon
   Methods in Ecology and Evolution, August 2019 *(2019 Robert May Early Career Research Prize Shortlist)*
3. **Bilinear Convolutional Neural Networks for Fine-grained Visual Recognition**
   Tsung-Yu Lin, Aruni RoyChowdhury, and Subhransu Maji
   PAMI 2017

Conference

1. **Learning to Localize Objects Improves Spatial Reasoning in Visual-LLMs**
   Kanchana Ranasinghe, Satya Narayan Shukla, Omid Poursaeed, Michael S Ryoo and Tsung-Yu Lin
   CVPR 2024, Seattle, Washington
2. **Open Vocabulary Semantic Segmentation with Patch Aligned Contrastive Learning**
   Jishnu Mukhoti, Tsung-Yu Lin, Omid Poursaeed, Rui Wang, Philip H.S. Torr, and Ser-Nam Lim
   CVPR 2023, Vancouver Canada (highlight paper)
3. **Few-shot fast-adaptive anomaly detection**
   Ze Wang, Yipin Zhou, Rui Wang, Tsung-Yu Lin, Ashish Shah, and Ser-Nam

Lim
NeurIPS 2022, New Orleans, Louisiana

4. **Second-order Democratic Aggregation**
Tsung-Yu Lin, Subhransu Maji, and Piotr Koniusz
ECCV 2018, Munich, Germany
5. **Improved Bilinear Pooling with CNNs**
Tsung-Yu Lin, and Subhransu Maji
BMVC 2017, London, United Kindom (oral presentation)
6. **Visualizing and Understanding Deep Texture Representations**
Tsung-Yu Lin, and Subhransu Maji
CVPR 2016, Las Vegas, Nevada
7. **One-to-many Face Recognition with Bilinear CNNs**
Aruni RoyChowdhury, Tsung-Yu Lin, Subhransu Maji, and Erik Learned-Miller
WACV 2016, Lake Placid, New York
8. **Bilinear CNN Models for Fine-grained Visual Recognition**
Tsung-Yu Lin, Aruni RoyChowdhury, and Subhransu Maji
ICCV 2015, Santiago, Chile (oral presentation)
9. **Efficient Binary Codes for Extremely High-dimensional Data**
Tsung-Yu Lin and Tyng-Lug Liu
ICIP 2014, Paris, France
10. **People Localization in A Camera Network Combining Background Subtraction and Scene-aware Human Detection**
Tung-Ying Lee, Tsung-Yu Lin, Szu-Hao Huang, Shang-Hong Lai, and Shang-Chih Hung
MMM 2011, Taipei, Taiwan

Technical reports and preprints (non peer-reviewed)

1. **Raising the Bar on the Evaluation of Out-of-Distribution Detection**
Jishnu Mukhoti, Tsung-Yu Lin, Bor-Chun Chen, Ashish Shah, Philip H.S. Torr, Puneet K. Dokania, and Ser-Nam Lim
arXiv:2209.11960, 2022
2. **Implicit Sparse Code Hashing**
Tsung-Yu Lin, Tsung-Wei Ke and Tyng-Luh Liu
arXiv:1512.00130, 2015

PROFESSIONAL SERVICE

Conference and Journal Reviewing

- Computer Vision and Pattern Recognition (CVPR 2018 $\sim$ 2024)
- European Conference on Computer Vision (ECCV, 2020, 2022)
- International Conference on Computer Vision (ICCV 2017, 2019, 2021, 2023)
- Neural Information Processing System (NeurIPS 2022, 2023)
- British Machine Vision Conference (BMVC 2019)
- IEEE Transactions on Pattern Analysis and Machine Intelligence
- International Journal of Computer Vision