Shao-Yuan Lo

Email: sylo@jhu.edu
Phone: 1-443-808-7270
https://shaoyuanlo.github.io

EDUCATION

Johns Hopkins University (JHU) — Baltimore, MD
Ph.D. in Electrical and Computer Engineering — Aug. 2019 –Present
  – Advisor: Vishal M. Patel

National Chiao Tung University (NCTU) — Hsinchu, Taiwan
M.S. in Electronics Engineering — Sep. 2017 –Jun. 2019
  – Advisor: Hsueh-Ming Hang
B.S. in EECS Undergraduate Honors Program — Sep. 2013 –Jun. 2017

University of Illinois at Urbana-Champaign (UIUC) — Champaign, IL
Exchange Program in Electrical and Computer Engineering — Aug. 2016 –Dec. 2016

INDUSTRY EXPERIENCE

Amazon Lab126 — Bellevue, WA
Applied Scientist Intern — May 2021 –Aug. 2021
  – Mentors: Wei Wang, Jim Thomas, Jingjing Zheng, and Cheng-Hao Kuo

RESEARCH AREAS

Adversarial machine learning [1 - 7]; Domain adaptation [1, 2]; Semantic segmentation [8 - 12]; Monocular depth estimation [2]; Novelty detection [3]; Lane detection [10, 12]; Frequency domain computer vision [9]

PUBLICATIONS

[1] **Shao-Yuan Lo** and Vishal M. Patel. "Exploring Adversarially Robust Training for Unsupervised Domain Adaptation." (Under review)

[2] **Shao-Yuan Lo**, Wei Wang, Jim Thomas, Jingjing Zheng, Vishal M. Patel, and Cheng-Hao Kuo. "Learning Feature Decomposition for Domain Adaptive Monocular Depth Estimation." (Under review)

[3] **Shao-Yuan Lo**, Poojan Oza, and Vishal M. Patel. "Adversarially Robust One-class Novelty Detection." (Under review)

[4] **Shao-Yuan Lo** and Vishal M. Patel. "Defending Against Multiple and Unforeseen Adversarial Videos." In *IEEE Transactions on Image Processing (TIP)*, 2021.

[5] **Shao-Yuan Lo** and Vishal M. Patel. "Error Diffusion Halftoning Against Adversarial Examples." In *IEEE International Conference on Image Processing (ICIP)*, 2021.

[6] **Shao-Yuan Lo**, Jeya Maria Jose Valanarasu, and Vishal M. Patel. "Overcomplete Representations Against Adversarial Videos." In *IEEE International Conference on Image Processing (ICIP)*, 2021.

[7] **Shao-Yuan Lo** and Vishal M. Patel. "MultAV: Multiplicative Adversarial Videos." In *IEEE International Conference on Advanced Video and Signal-based Surveillance (AVSS)*, 2021.

[8] **Shao-Yuan Lo**, Hsueh-Ming Hang, Sheng-Wei Chan, and Jing-Jhih Lin. "Efficient Dense Modules of Asymmetric Convolution for Real-Time Semantic Segmentation." In *ACM International Conference on Multimedia in Asia (MMAsia)*, 2019. [**Best Paper Award**]

[9] **Shao-Yuan Lo** and Hsueh-Ming Hang. "Exploring Semantic Segmentation on the DCT Representation." In *ACM International Conference on Multimedia in Asia (MMAsia)*, 2019. [Oral]

[10] **Shao-Yuan Lo**, Hsueh-Ming Hang, Sheng-Wei Chan, and Jing-Jhih Lin. "Multi-Class Lane Semantic Segmentation using Efficient Convolutional Networks." In *IEEE International Workshop on Multimedia Signal Processing (MMSP)*, 2019. [Oral]

[11] Shang-Wei Hung, **Shao-Yuan Lo**, and Hsueh-Ming Hang. "Incorporating Luminance, Depth and Color Information by a Fusion-based Network for Semantic Segmentation." In *IEEE International Conference on Image Processing (ICIP)*, 2019. [Oral]

[12] Ping-Rong Chen*, **Shao-Yuan Lo***, Hsueh-Ming Hang, Sheng-Wei Chan, and Jing-Jhih Lin. "Efficient Road Lane Marking Detection with Deep Learning." In *IEEE International Conference on Digital Signal Processing (DSP)*, 2018. [Oral]

Awards

- **Government Scholarship to Study Abroad**, Ministry of Education, Taiwan — 2020
- **Best Paper Award**, ACM MMAsia 2019 — 2019
- **Best Master Thesis Award**, Chinese Image Processing and Pattern Recognition Society — 2019
- **Students' Outstanding Contribution Award** (highest honor of graduation), NCTU — 2019
- **Dean's List**, EECS Honors Program, NCTU — 2017
- **Scholarship for Outbound Exchange**, NCTU — 2016
- **WINTEK Outstanding Freshman Scholarship**, WINTEK Corp. and NCTU — 2013

Invited Talks

- Jan 10, 2022: "Defending Against Multiple and Unforeseen Adversarial Videos." At National Yang Ming Chiao Tung University, Taiwan. Host: Wen-Hsiao Peng.
- Jan 5, 2022: "Defending Against Multiple and Unforeseen Adversarial Videos." At Academia Sinica, Taiwan. Host: Jun-Cheng Chen.
- Jun 19, 2021: "Adversarial Attacks and Defenses in Videos." At CVPR 2021 Tutorial on Adversarial Machine Learning in Computer Vision, Virtual. Host: Cihang Xie.

Academic Services

- **Journal Reviewer:** IEEE T-PAMI, IEEE T-CSVT, IEEE T-SMC, Pattern Recognition
- **Conference Reviewer:** CVPR (2022), ICCV (2021), WACV (2021, 2022), AVSS (2021)
- **Teaching Assistant:** Deep Learning (EN.520.638), JHU, Spring (2021, 2022)

Programming Skills

- **Programming Languages:** Python, MATLAB, C/C++
- **Deep Learning Libraries:** PyTorch, TensorFlow, Caffe
- **Hardware Design Tools:** Verilog, HSPICE, Cadense Virtuoso

Leadership

- Vice President, JHU Taiwanese Student Association — 2020 –Present
- Secretary, NCTU EECS Student Association — 2015 –2016
- Treasurer, NCTU Chinese Chess Club — 2014 –2015
- Arts Chair, NCTU EECS Summer Camp for High School Students — 2014 –2015