Shao-Yuan Lo

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Education

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

National Chiao Tung University (NCTU) — Hsinchu, Taiwan
M.S. in Electronics Engineering — Sep. 2017 –Jun. 2019
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

Experiences

Vision and Image Understanding Lab, JHU — Baltimore, MD
Graduate Research Assistant, with Prof. Vishal M. Patel (Ph.D. advisor) — Aug. 2019 –Present

- Adversarial robustness: [1 - 5]

Amazon Lab126 — Bellevue, WA
Applied Scientist Intern, with Wei Wang and Jim Thomas — May 2021 –Aug. 2021

- Domain adaptive monocular depth estimation

Communication Electronics and Signal Processing Lab, NCTU — Hsinchu, Taiwan
Graduate Research Assistant, with Prof. Hsueh-Ming Hang (M.S. advisor) — Sep. 2017 –Jun. 2019

- Real-time semantic segmentation: [6, 9]
- Compressed-domain semantic segmentation: [7]
- Deep learning-based lane detection: [8, 10]

Publications

[1] **Shao-Yuan Lo**, Poojan Oza, and Vishal M. Patel. "Adversarially Robust One-class Novelty Detection." *arXiv:2108.11168*, 2021.

[2] **Shao-Yuan Lo** and Vishal M. Patel. "Defending Against Multiple and Unforeseen Adversarial Videos." *arXiv:2009.05244*, 2020.

[3] **Shao-Yuan Lo** and Vishal M. Patel. "MultAV: Multiplicative Adversarial Videos." *arXiv:2009.08058*, 2020.

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

[5] **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.

[6] **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]**

[7] **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]

[8] **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]

[9] 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]

[10] 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

- June 19, 2021: "Adversarial Attacks and Defenses in Videos." In CVPR 2021 Tutorial on Adversarial Machine Learning in Computer Vision, Virtual.

Academic Services

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

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