

SHIH-YANG SU

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EDUCATION

Master of Science, Computer Engineering

Virginia Tech, Blacksburg VA, United States

Advisor: Jia-Bin Huang

- Visual Representation Learning, Embodied Vision Learning

Aug 2018 - Present

GPA: 3.92/4.00

Bachelor of Science, Computer Science

National Tsing Hua University, Hsinchu, Taiwan

Advisor: Shang-Hong Lai, Chun-Yi Lee

- Object Detection on Embedded System, Multi-agent Reinforcement Learning

Sep 2013 - Jun 2017

GPA: 4.16/4.30, Rank: 3/120 (top 2.5%)

PUBLICATIONS

- **Diversity-driven exploration strategy for deep reinforcement learning**

Z.-W. Hong, T.-Y. Shann, **S.-Y. Su**, Y.-H. Chang, C.-Y. Lee

Neural Information Processing Systems (**NeurIPS**), 2018 [pdf]

- **Virtual-to-real: Learning to control in visual semantic segmentation**

Z.-W. Hong, Y.-M. Chen, **S.-Y. Su**, T.-Y. Shann, Y.-H. Chang, H.-K. Yang, B. Ho, C.-C. Tu, Y.-C. Chang, T.-C. Hsiao, H.-W. Hsiao, S.-P. Lai, C.-Y. Lee

International Joint Conference on Artificial Intelligence (**IJCAI**), 2018 [video][pdf]

- **A deep policy inference Q-network for multi-agent systems**

S.-Y. Su*, Z.-W. Hong*, Y.-S. Chang*, T.-Y. Shann*, and C.-Y. Lee* (*: equal contribution)

International Conference on Autonomous Agents and Multiagent Systems (**AAMAS**), 2018 [pdf]

- **Automatic conversion of pop music into chiptunes for 8-bit pixel art**

S.-Y. Su, C.-K. Chiu, L. Su, and Y.-H. Yang

International Conference on Acoustics, Speech and Signal Processing (**ICASSP**), 2018 [pdf]

EXPERIENCE

Research Intern - Borealis AI

Mentor: Hossein Hajimirsadeghi

- Worked on graph structure generation with variational inference
- Worked on graph convolutional network for banking application

May 2019 - Aug 2019

Teaching Assistant - Virginia Tech

ECE5424 / CS5824: Advanced Machine Learning

Spring 2019

Research Assistant - Virginia Tech

Advisor: Jia-Bin Huang

- Developed compact optical flow estimation model with implicit occlusion reasoning
- Worked on visual navigation algorithm in Habitat environment

Fall 2018

Research Assistant - National Tsing Hua University

Advisor: Chun-Yi Lee

- Developed algorithm for multi-agent collaborative/competitive scenarios [pdf]
- Proposed ways to improve exploration for RL agent [pdf]
- Worked on virtual-to-real learning for vision-based robot navigation [pdf]

Jan 2017 - April 2018

Teaching Assistant - National Tsing Hua University
Hardware Laboratory

Fall 2016

Research Assistant - National Tsing Hua University
Advisor: Shang-Hong Lai

Fall 2016

- Deployed algorithms on embedded system for real-time object detection

Research Assistant - Academia Sinica
Advisor: Shang-Hong Lai

Summer 2016

- Developed algorithms for converting pop music into 8-bit song [[pdf](#)]

Quality Assurance Team Intern - Broadcom

Summer 2015

PROFESSIONAL ACTIVITIES

Conference Reviewer: NeurIPS 2019

Student Volunteer: NeurIPS 2018

AWARDS

ZyXEL Outstanding Student Scholarship

Awarded to outstanding student in college of Electrical Engineering and Computer Science

Excellent Graduation Project Award

Awarded to top 5 graduation projects in Dept. of Computer Science

Academic Achievement Awards (5 times, 2013-2017)

Awarded to top 5% students in Dept. of Computer Science

SELECTED PROJECTS

Pop-to-8bit [[github](#)]

S.-Y. Su, C.-K. Chiu, L. Su, and Y.-H. Yang

A pipeline that combine both machine learning and signal processing techniques to convert pop musics into chiptune songs.

Keras Image Captioning Model [[github](#)]

S.-Y. Su, Y.-R. Lin, S.-D. Yang

NTHU CS565500 course project, CIDErD score: 0.765, Rank 1st in the class

A deep policy inference Q-network for multi-agent systems [[github](#)]

S.-Y. Su, Z.-W. Hong, Y.-S. Chang, T.-Y. Shann, and C.-Y. Lee

Tackling non-stationarity problem in multi-agent RL settings through inferring opponents/collaborators policies.

RELEVANT COURSES

Large-scale Machine Learning

Linear System Theory

Statistical Inference

Parallel Programming

Computer Vision

Information Theory

Software Engineering

Calculus & Linear Algebra