

Shih-Yang Su

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EDUCATION

- 2018.8 - **Ph.D. in Electrical and Computer Engineering**
Dept. of Electrical and Computer Engineering, Virginia Tech, Blacksburg, VA
- Optical Flow Estimation
 - Embodied Vision Learning
- Advisor: Prof. Jia-Bin Huang*
- 2013.9 - 2017.6 **B.S. in Computer Science**
Dept. of Computer Science, National Tsing Hua University, Hsinchu, Taiwan
- Rank: 3rd/120 (top 2.5%)
 - GPA: 4.16/4.30 (overall), 4.25/4.30 (major)

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 (NIPS), 2018 [ICLR workshop version: [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**
(* indicates 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), pp. 411-415. Mar. 2017 [[ieee](#)][[pdf](#)]

EXPERIENCES

- 2017 - 2018 **Research Assistant**
Dept. of Computer Science, National Tsing Hua University, Taiwan
- Developed algorithm for multi-agent collaborative/competitive scenarios [[pdf](#)]
 - Worked on methods to improve exploration for RL agent [[pdf](#)]
 - Worked on virtual-to-real learning for vision-based robot navigation [[pdf](#)]
- Advisor: Prof. Chun-Yi Lee*

Fall 2016 **Teaching Assistant** - Hardware Laboratory., Fall 2016
Dept. of Computer Science, National Tsing Hua University, Hsinchu, Taiwan
Advisor: Prof. Chun-Yi Lee

Research Assistant

Dept. of Computer Science, National Tsing Hua University, Hsinchu, Taiwan
• Deployed algorithms on embedded system for real-time object detection
Advisor: Prof. Shang-Hong Lai

Summer 2016 **Research Assistant**
Academia Sinica, Research Center for Information Technology Information, Taiwan
• Developed algorithms for converting pop music into 8-bit
Advisor: Prof. Yi-Hsuan Yang, Prof. Li Su

Summer 2015 **Internship** - Quality Assurance Team
Broadcom Corporation, Hsinchu, Taiwan
• Captured a bug in hardware driver

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
- **Best Project Award**
In course Introduction to Multimedia
- **Best Poster Presentation Award**
In course Social Computing Application Design

SELECTED PROJECTS

1. **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.
2. **Keras Image Captioning Model** [[github](#)]
S. Y. Su, Y. R. Lin, S. D. Yang, NTHU CS565500 project, CIDErD score: 0.765, Rank 1st in course.
3. **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 environment through inferring opponents'/collaborators' policies.