Shih-Yang Su

Email: shihyang@vt.edu **Website**: lemonatsu.github.io **Phone**: +1(540) 808-9345

EDUCATION

2018.8 - **M.Sc. in Electrical and Computer Engineering**
Dept. of Electrical and Computer Engineering, Virginia Tech, Blacksburg, VA
- Visual Representation Learning
  - Common Sense Reasoning
- 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
- GPA: 4.16/4.30 (overall), 4.25/4.30 (major) Rank: 3rd/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**
  (* *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

Summer 2019 **Borealis AI -** Summer Intern
- Developed graph convolutional model for bank application

Spring 2019 **Virginia Tech -** Teaching Assistant
Advanced Machine Learning, Spring 2019
Advisor: Prof. Jia-Bin Huang

Fall 2018 **Virginia Tech -** Research Assistant
Dept. of Electrical and Computer Engineering, Virginia Tech, Blacksburg, VA
- Developed algorithm for optical flow estimation
- Visual representation for embodied agents

Advisor: Prof. Jia-Bin Huang

2017 - 2018 **National Tsing Hua University -** Research Assistant
- 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 **National Tsing Hua University -** Teaching Assistant
Hardware Laboratory, Fall 2016
Advisor: Prof. Chun-Yi Lee

National Tsing Hua University - Research Assistant
- Deployed algorithms on embedded system for real-time object detection

Advisor: Prof. Shang-Hong Lai

Summer 2016 **Academia Sinica -** Research Assistant
- Developed algorithms for converting pop music into 8-bit

Advisor: Prof. Yi-Hsuan Yang, Prof. Li Su

Summer 2015 **Broadcom Corporation -** Summer Intern
Hsinchu, Taiwan

AWARDS

- **NeurIPS 2018 Student Volunteer**
- **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.