Yuan-Hong Liao

+8869 3532 7692 • ✉ andrewliao11@gmail.com
🌐 https://andrewliao11.github.io

Research Interests

Main topics: Representation Learning, Computer Vision, Reinforcement Learning.
My research interests include *learning robust representation* that make robots[1] can do human-like adaptation, and *reinforcement learning that are orthogonal to capability* such as "How to encourage to agent to act as the designer want?", "How to devise improve the sample efficiency?", and "What kind of reinforcement signal can make the agent learn efficiently?"

Education

University of Southern California   **CA, USA**
Visiting Student of Computer Science Department   *October 2017–February 2018*
Advised by Prof. Joseph Lim.

National Tsing Hua University   **Hsinchu, Taiwan**
B.S. Degree of Electrical Engineering   *September 2013–June 2017*
Advised by Prof. Min Sun. My total GPA: 3.99/4.3, rank: 14/102

Publication

Show, Adapt, and Tell of Cross-Domain Image Captioner, ICCV17, [link]
Tseng-Hung Chen, Yuan-Hong Liao, Ching-Yao Chuang, Wan-Ting Hsu, Jianlong Fu, Min Sun

Tactics of Adversarial Attacks on Deep Reinforcement Learning Agents, IJCAI17, [link]
Yen-Chen Lin, Zhang-Wei Hong, Yuan-Hong Liao, Meng-Li Shih, Ming-Yu Liu, Min Sun

Leveraging Video Descriptions to Learn Video Question Answering, AAAI17, [link]
Kuo-Hao Zeng, Tseng-Hung Chen, Ching-Yao Chuang, Yuan-Hong Liao, Juan Carlos Niebles, Min Sun

Research Experiences

University of Southern California   **CA, USA**
Visiting Student   *November 2017–present*
Advised by Prof. Joseph J Lim.
Conduct research on novel view image synthesis and modular reinforcement learning.

Vision Science Laboratory at National Tsing Hua University   **Hsinchu, Taiwan**
Research Assistant   *December 2015–present*
Advised by Prof. Min Sun.
Focus on the combination of computer vision and natural language processing.
Conduct zero-shot reinforcement learning for various environmental changes.
Papers accepted to AAAI17, IJCAI17, ICCV17

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[1]The robots here are referred to general agents deployed to virtual/real environments

○ **Industrial Technology Research Institute**   **Hsinchu, Taiwan**
Research Intern   *March 2016–May 2017*

Work at Computational Intelligence Technology Center in ITRI under the supervision of Dr. Dung-Chan Tsai. Survey on deep reinforcement learning, and I also maintain a *Github repository* for this. Implement reinforcement learning algorithms in various continuous control tasks.

○ **Umbo Computer Vision Inc.**   **Hsinchu, Taiwan**
CV/ML Intern   *June 2016–September 2016*

Work on grounding via natural language with my advisor, Dr. Ting-fan Wu.. Focus on combing vision and language, and do the data analysis.

Teaching

○ Fall 2017, TA for The Cutting-Edge of Deep Learning at National Tsing Hua University.

○ Spring 2017, TA for Signals and System at National Tsing Hua University

Honors & Awards

○ **Oversea Study Scholarship at NTHU**   **Hsinchu, Taiwan**
Award to 10 people every year (<10%).   *June 2015*

○ **Excellent student scholarship of EECS college at NTHU**   **Hsinchu, Taiwan**
Around 8 people are granted every year (<10%).   *May 2016*

Skills

○ C/C++, Python, Lua, Matlab.

○ Machine learning framework: Caffe, Torch, Tensorflow, PyTorch

Side Projects

○ **andrewliao11/gail-tf**
Implementation of Generative Adversarial Imitation Learning.
The extension of this repository is merged into *@openai/baselines*

○ **andrewliao11/Deep-Reinforcement-Learning-Survey**
[320+ stars, 90+ forks] I share my comments/thoughts on deep reinforcement learning.

○ **andrewliao11/py-faster-rcnn-imagenet**
[100+ stars] I provide a tutorial for people to use faster-rcnn on their own dataset. Related blog post

○ **andrewliao11/CoGAN-tensorflow**
Tensorflow implementation of Coupled Generative Adversarial Networks.

○ **andrewliao11/dni.pytorch**
PyTorch implementation of Decoupled Neural Interfaces using Synthetic Gradients.

Language

○ Chinese (native speaker).

○ English: TOEFL: R27, L27, W25, S23; GRE: V156, Q170, AW3.0