Yuan-Hong Liao

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Research Interests

My research focuses on combining the different modality(including language and control signal) with visual representation via machine learning. I'm also interested in reinforcement learning, and aspire to utilize the knowledge of vision to build a better control and planning agent.

Education

National Tsing Hua University   *Hsinchu, Taiwan*
B.S. Degree of Electrical Engineering • Sep. 2013 – Present

- Advised by Prof. Min Sun

- Academic performance: Total GPA: 4.01/4.3, Last 60 GPA: 4.04/4.3, Rank: 10/116

Publication

- **Tactics of Adversarial Attacks on Deep Reinforcement Learning Agents [under review]**
Yen-Chen Lin, Zhang-Wei Hong, **<u>Yuan-Hong Liao</u>**, Meng-Li Shih, Ming-Yu Liu, Min Sun
International Conference on Learning Representations(ICLR workshop), 2017
- **Leveraging Video Descriptions to Learn Video Question Answering** [arXiv] [dataset]
Kuo-Hao Zeng, Tseng-Hung Chen, Ching-Yao Chuang, **<u>Yuan-Hong Liao</u>**, Juan Carlos Niebles, Min Sun
Association for the Advancement of Artificial Intelligence(AAAI), 2017

Research Experiences

Vision Science Laboratory   *Hsinchu, Taiwan*
Research Assistant • Dev. 2015 – Present

- Conducting research on computer vision and machine learning, advised by Prof, Min Sun
- Proficient in image/video captioning and image/video question answering

Industrial Technology Research Institute   *Hsinchu, Taiwan*

Research Intern • Mar. 2016 – Present

- Work in Computational Intelligence Technology Center in ITRI, advised by Dr. Dung-Chan Tsai
- Present and survey on deep reinforcement learning, and I maintain a Github repo for this.
- Implement reinforcement learning algorithms in various tasks.

Umbo Computer Vision Inc.   *Taipei, Taiwan*

CV/ML Intern • Jun. 2016 – Sept. 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.

Skills

- C/C++, Python, Lua, Matlab, Java, and Javascript
- Machine learning framework: Caffe, Torch, Tensorflow

Honors & Awards

Excellent student scholarship of EECS college, NTHU • May. 2016
- Around 8 people are granted every year (<10%)

Undergraduate research project supported by Ministry of Science and Technology, R.O.C.
- Topic: Semantic Video Highlight Detection by Exploiting LSTMs

Runner-up of Digital Drift Best Paper on Deep Learning for Visual Analysis, CVGIP 2016
- Paper name: *BRAIN4VQA: Video Question Answering via Deep Networks*

Side Project

- ***Deep Reinforcement Learning Survey, over 150 stars and 50 forks*** [github]
- ***CoGAN-tensorflow,*** [github]
- ***py-faster-rcnn-imagenet,*** [github]