Huai-Jen (Aaron) Liang

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WORK EXPERIENCES

Google Inc., Mountain View, CA — May 2017 – Aug 2017

Software Engineering Intern, Geo Machine Perception Team

- Developed MapReduce jobs for processing over 10 million aerial images and mobile navigation data
- Utilized Deep Learning models for semantic segmentation to detect roads in large scale aerial images
- Enhanced model performance by 20% through training on new multi-channel data that contain color and mobile navigation information
- Counseled multiple business partners on integrating the newly-developed model and accelerated development process
- Established comprehensive documentations and robust test cases to facilitate future implementation of the model

University of Maryland, College Park, MD — Sep 2015 – May 2017, Aug 2017 – Dec 2017

Graduate Teaching Assistant

- Designed project assignments and instructed undergraduate Introduction of Machine Learning classes
- Supervised discussion sessions of undergraduate Discrete Signal Analysis classes of 70+ students

SKILLS

- **Programming Languages:** C++, Python, MATLAB, C
- **Tools:** Tensorflow, Keras, LightNet, OpenCV, NumPy, ROS, GTSAM, Github, LATEX

EDUCATION

University of Maryland, College Park, MD — Expected May 2018

M.S. in Electrical and Computer Engineering (GPA: 3.71/4.0)

- Related Courses: Reinforcement Learning, Deep Learning, Statistical Pattern Recognition, Computer Processing of Pictorial Information, Compilers and Optimization

National Taiwan University, Taipei, Taiwan — Jun 2014

Bachelor of Science in Electrical Engineering (Major GPA: 3.97/4.3)

- Related Courses: Artificial Intelligence, Data Mining, The Design and Analysis of Algorithm, Data Structure and Programming, Network and Multimedia Lab

PROJECTS

Simultaneous Localization and Mapping(SLAM) — Jan 2017 – present

- Designed a real-time SLAM system to map detected AR tags and localize camera's position
- Expedited nonlinear optimization by using factor graphs and Bayes networks as the underlying computing paradigm

Contour Motion Estimation — July 2016 – Jan 2017

- Revised a contour motion estimation algorithm that uses asynchronous event-based data to locate motion boundary and estimate normal flow
- Accelerated the algorithm by ten times

Conservative Policy Iteration(CPI) — Sep 2016 - Dec 2016

- Achieved in implementing CPI to resolve exponential time required for exploration in policy gradient in large state space environments
- Improved the policy monotonically at each iteration while policy gradient struggled to make any progress

Face and Handwritten Digits Recognition — Sep 2015 - Dec 2015

- Used Naïve Bayes, k-NN rule, SVM and CNN to compose face and handwritten digits recognition
- Applied PCA and LDA to reduce computational time and improve accuracy

Future Co-authorship Prediction between Scholars — Sep 2013 - Jan 2014

- Employed Naïve Bayes, Random Forests and SVM to formulate a framework of predicting future cooperation between scholars
- Improved the accuracy by 5% through including features that take collaborations in different time spans into account