SHUO HAN

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EDUCATION

Cornell University, Ithaca, New York, USA Dec 2018

Master of Engineering, Environmental and Water Resource System, GPA: 3.95

Advisor: Dr. Monroe Weber-Shirk

- Related Courses: *Machine Learning for Intelligent Systems, Statistical Data Mining, Objected-Oriented Programming and Data Structures, Time Series Data Analysis, Engineering Management Methods*

Tongji University, Shanghai, China June 2017

Bachelor of Engineering, Environmental Engineering, GPA: 87.1/100

- Academic Scholarship: Tongji Scholarship of Excellence, three times (2014, 2015, 2016)
- Related Courses: *VB.NET Programming, Database Technology and Applications, Fundamentals of Computers*

PROFESSIONAL EXPERIENCE

Research Assistant, Prof. Kilian Q. Weinberger's Group, Cornell University Mar 2019 – Present

Advisors: Prof. Kilian Q. Weinberger and Prof. Wei-Lun (Harry) Chao

- Conducted researches at Cornell Autonomous Driving Group. Modified state-of-the-art stereo depth estimation models (e.g., PSMNet, GANet) to boost performance on 3D object detection on KITTI.
- Designed a multi-camera stereo-matching depth estimation approach on CARLA virtual dataset, which reduced the median depth error compared to the traditional stereo approach.
- Assisted with data processing and model evaluation in papers accepted by IROS2019.

Grader, *AguaClara* Cornell, Cornell University Aug 2018 – Dec 2018

- Responsible for grading and commenting code and reports submissions in the AguaClara program, which helps to provide safe drinking water in developing countries with gravity-powered water treatment technologies.
- Advised subteams in Apps and Algorithms Division.

SELECTED PROJECTS

Floc App for Sustainable Water Supply Project Jan 2018 – May 2018

- Directed a team of four in the AguaClara program. Created an open-source object detection app using Python that can detect, count, and measure the floc particles in the water after flocculation. The app is able to assess the efficiency of the flocculation and thus can be used to adjust the coagulant dose.
- Implemented Gaussian thresholding, feature detection, and other techniques with *OpenCV* and *scikit-image* to detect in-focus flocs from the background, given the raw images of water in real time.

Flight Delays Predictions for Domestic Airlines Sep 2018 – Dec 2018

- Created a statistical Boosting Tree model to predict the delay rate of domestic airlines in America. The original dataset was highly unbalanced, with 98,732 flights (Baseline = 77%). But with oversampling, ensemble datasets, and other feature engineering methods, the model achieved a test accuracy of 87%.

SKILLS

Programming Languages: Python (NumPy, PyTorch, TensorFlow, Keras), Java, R, C#, VB.NET, SQL

Languages: Mandarin, English

ACTIVITIES

Core Member, Basketball Team of Tongji University Sep 2014 – Jan 2016

- Participated in the 18th CUBA (Chinese University Basketball Association) tournament.