Jun Hao

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Education

- **Washington State University** — Vancouver, WA
  Master of Science in Computer Science — *Expected May 2019*
- **University of Washington** — Seattle, WA
  Bachelor of Science in Electrical and Computer Engineering — *Sept. 2012 – Dec. 2016*

Experience

- **Washington State University** — Vancouver, WA
  Research Assistant/Teaching Assistant — *Aug. 2017 - Present*
  - **Graph Visualization**: Designed and implemented an algorithm, which was inspired by K-means, simulated annealing, and force-directed graph drawing algorithm, to assign each vertex in a graph to a geographic coordinate in a given coordinate plane by iteration in order to show vertices with shared edges be relatively closer.
- **El Cielo Technology** — Beijing, China
  Embedded Software Engineer Internship — *April 2017 June 2017*
  - **Embedded System on STM32**: Designed an embedded system on STM32 microprocessor that could read high sample rate incoming I2S data, process the signal, and output the data by SPI after DMA. Meanwhile, the processor would store the data into a SD card and show the data on a OLED screen.
- **DJI Technology Inc.** — Shenzhen, China
  Embedded Software Engineer Internship — *Summer 2016*
  - **Computer Vision**: Implemented a computer vision algorithm by ORB feature matching and mean shift tracking in OpenCV for object detection with Python
  - **Flight Control**: Designed and implemented an autonomous flight control system based on the feedback of a visual odometry and the computer vision algorithm by C++ and ROS.

Selected Projects

- **Toxic Comments Classification** — Vancouver, WA
  - **Machine Learning**: Applied 3 classifiers, which were NBSVM, LR, and MNB, to classify online comments into six toxic comment tags with scikit-learn
- **Rumor Source Detection** — Vancouver, WA
  - **Social Network Analysis**: Simulated rumor backward propagation in a social network and implemented an algorithm based on maximum likelihood estimation and greedy to select a set of K candidates that has the minimum total distance error.
  - **Spark**: Implemented the same algorithm in Spark for solving the scalability issue
- **Parking Monitoring System for Capitol Hill Community** — Seattle, WA
  - **Record the Number of Vehicles**: Wrote a Python script that used Sllurp to pull data from a RFID reader, and by the time tag that returned from the RFID tag, the program could track and record the number of cars entering and leaving the garage
  - **Recognize Available Lots**: Implemented a decision tree classifier by Scikit-learn to tell whether there is a car in each of the parking spot from pictures taken in the garage
- **Network-based Interactive Game** — Seattle, WA
  - **FPGA**: Built an asynchronous serial network system between two FPGA boards. Based on the communication mechanism, designed a 2-player Pokmon fighting game that run on Nios II Microprocessor with game logic written in C

Programming Skills

- **Languages**:Java, C, Python, C++, VerilogHDL **Tools**: YOLO, CPLEX, Tensorflow, scikit-learn, ROS

Publications

- S.Lim, **J.Hao** , Z.Lu, X.Zhang, and Z.Zhang. Approximating the K-Minimum Distance Rumor Source Detection in Online Social Networks. 27th International Conference on Computer Communications and Networks (ICCCN18)