Jun Hao

Email : jun.hao@wsu.edu
Mobile : 206-643-7281

Master student in Computer Science, actively looking for a full-time software engineer position

Education

- **Washington State University** — Vancouver, WA
  Master of Science in Computer Science — *Expected Sep 2020*
- **University of Washington** — Seattle, WA
  Bachelor of Science in Electrical Engineering — *Sep 2012 - Dec 2016*

Experience

- **Washington State University** — Vancouver, WA
  Research Assistant/Teaching Assistant — *Aug 2017 - May 2019*
  - **Network Visualization:** Designed a network visualization algorithm based on Force-Directed Graph Layout by adding auxiliary community information as force weights in *matplotlib* and *D3.js.*
  - Improved edge crossing and node distribution with simulated annealing for better interpretability of layout.
  - **Diffusion Analysis and Visualization:** Developed a Twitter network analysis web app with network-based diffusion analysis with *React*, *Neo4j*, and *Node.js*, which is capable of visualizing sentiment and topic contagion in static or evolving networks.
- **El Cielo Technology** — Beijing, China
  Embedded Software Engineer Intern — *Apr 2017 - Jun 2017*
  - **Embedded Systems on STM32:** Designed the printed circuit boards with *STM32* F2 and F4 chips and implemented embedded systems for controlling movement of antenna array, pre-processing and storing high-frequency incoming signals from antenna.
  - Implemented APIs for upper level applications to access data in batches with Fourier transformation.
  - Developed a web app as an internal supply chain data query platform in *PHP and CSS* with *Bootstrap.*
- **DJI Technology Inc.** — Shenzhen, China
  Embedded Software Engineer Intern — *Summer 2016*
  - **Computer Vision:** Implemented a computer vision algorithm with ORB feature matching and mean shift tracking for object classification and viewpoint estimation in *OpenCV-Python.*
  - **Flight Control for Drone Delivery:** Designed and implemented an autonomous flight control system based on real-time feedback of a visual odometry and distance calibration with computer vision algorithm in *C++* and *Robot Operating System (ROS).*

Projects

- **Multi-players Computer Game** — Vancouver, WA
  - **Hollywood Hacker Game:** Participated in the full Agile software development cycle of a real-time computer game for users to play mini-games in multiple threads from either hacker or security side.
  - Designed the multi-player game in an object-oriented application framework using *Java* Slick2D.
  - Architectured the communication protocol based on TCP connection between multiple computers on LAN.
- **Minimum Distance Rumor Source Detection** — Vancouver, WA
  - **Social Network Analysis:** Simulated rumor backward propagation in a social network with SNAP library; implemented an algorithm based on maximum likelihood estimation and greedy search to select K candidates as rumor sources with the minimum total distance error in *C++*
  - Published on the 27th International Conference on Computer Communications and Networks (ICCCN'18).
  - **Spark:** Designed and built data storage and processing with *Scala* for high performance and scalability.
- **Parking Monitoring System for Capitol Hill Community** — Seattle, WA
  - **Monitor Available Parking Space:** Designed and developed a Python program to calculate the parking space in a garage; achieved 2% error by monitoring cars in and out signals with data interrogating from RFID tags.
  - Implemented a decision tree classifier to estimate occupation of individual parking spots with pictures from a low-resolution camera.
  - Published data pipeline for API and visualization; deployed a web app with GoogleMaps iFrame on *AWS.*
- **Network-based Interactive Game** — Seattle, WA
  - Built an asynchronous serial network system between two *FPGA* boards by *Verilog*; designed and implemented a 2-player Pokemon game in C under RS232 protocol on Nios II Microprocessor.

Skills

- **Languages**: Java, C, Python, C++, JavaScript, PHP, CSS, Scala, Shell
- **Tools**: Linux, OpenCV, Node.js, React.js, Tensorflow, scikit-learn, ROS, AWS, MySQL, Neo4j, Spark, Hadoop