

Zehao (Jasper) Xu

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EDUCATION

University of California, San Diego *M.S. in Computer Science* Grad Date: Dec. 2020

Zhejiang University *B.E. in Automation* Sep. 2015 – June 2019

- Overall GPA: 3.9/4.0 • Ranking: 3/121
- Relevant Coursework: Data Structure, Object-Oriented Programming, Algorithms, Computer Networks, Database.

TECHNICAL SKILLS

- **Languages:** Java, C/C++, Python, JavaScript, HTML/CSS, Shell
- **Tools/Frameworks:** React.js, D3.js, Redux, Node.js, Express, Flask, Bootstrap, Sass, QT, Git, GTest/GMock, Keras
- **Databases:** MongoDB, Cassandra, MySQL

WORK EXPERIENCE

Full-Stack Engineer Intern, Hikvision Digit Technology Co., Ltd (C++ & React.js & Node.js) Hangzhou, China
Mobile Robot Department, Point Cloud Team Oct.2018 - Jan. 2019

- Developed a point cloud visualization dashboard web application for rendering point cloud data and parameters to provide data-driven references for upper management, which was used by **10+** teams.
- Created the front-end interface using **D3.js** and **React.js** with Context API for comprehensive data visualization.
- Built backend service using **Node.js**, **Express** framework, with **MongoDB**, and built authentication API with JWT.
- Designed a data preprocessing pipeline that performs denoising of input signals using C++ and Point Cloud Library.

Research Intern, University of California, Los Angeles (C++ & Python & GTest/GMock) Los Angeles, USA
Center for Vision, Cognition, Learning and Autonomy July 2018 – Sep. 2018

- Built a model-based trajectory optimization library using physical engine Mujoco and optimizer IPOPT.
- Designed a data visualization module that can interactively render 3D trajectory animations using OpenGL.
- Employed **C++ best practices** to keep the system's maintainability and scalability during iterative development.
- Optimized the calculation of Jacobian matrix based on profiling data and improve cache performance by **40%**.
- Wrote unit tests using **GTest/GMock** framework in C++ with rigorous practice to maintain test coverage over **90%**.

Full-Stack Engineer Intern, Hansheng Trading Company (AJAX & Python & Flask) July 2016 - Sep. 2016

- Built a single-page company web application with **Flask** framework and designed the interface with Bootstrap.
- Integrated HTML components with AJAX in pure JS and reduced the average page loading time to **0.1** second.

SELECTED PROJECTS

Project Management and Collaboration Web Application (React.js & Redux) July 2019 - Aug. 2019

- Designed responsive layout structure with Flexbox and beautified UI with **React Bootstrap** components.
- Built the user interface using React Bootstrap and **React.js**, and managed the states of the application using **Redux**.
- Created a mock back-end using Json-Server to get fake REST APIs and server responses for front-end developing.

Book Management System Using Distributed Database (C++ & QT & Cassandra) Nov. 2017 - Jan. 2018

- Implemented a graphical user interface for authorized librarians and members using C++ and **QT** programming.
- Connected QT with **Cassandra DB** using libQtCassandra and constructed a distributed book management system.

Real-Time Embedded Flight Control System Development (C++ & Python) Oct. 2017 - Sep. 2018

- Developed real-time embedded control system based on cascade PID control algorithm on a drone using C++.
- Built an embedded multiscale object detection system based on YOLO model and improved FPS from **5.4** to **11.8**.

Leadership Experience

Vice Minister of PAPIC - One of the Four Biggest Student Organizations Sep.2016 - Sep.2017

- Operated the biggest public welfare platform of part-time jobs and served over **1000** students during the tenure.