Zijian Liu

liu.zijian@outlook.com
Waterloo, ON, Canada

EDUCATION

University of Waterloo — Waterloo, ON, Canada
Master of Engineering in Electrical and Computer Engineering, 92% — *May 2019 – Aug 2020*

Beihang University — Beijing, China
Master of Engineering in Computer Technology, 85% — *Sep 2016 – Jan 2019*

Beihang University — Beijing, China
Bachelor of Engineering in Computer Science and Technology, 80% — *Sep 2012 – Jul 2016*

EXPERIENCE

TrunkTech Co. Ltd. — Beijing, China
Software Engineer Intern — *Sep 2017 - May 2018*

- Built convolutional neural network models for real-time vehicle detection and pedestrian detection in autonomous driving scenario with TensorFlow and Caffe.
- Implemented a visual localization system for autonomous vehicles, in case that GPS signals are weak or absent, based on AprilTag, a visual fiducial system.
- Developed a simulator to trace and replay vehicle status in HD maps using the RViz tool of ROS (Robot Operating System). This simulator is used to test the planning and decision-making system of autonomous vehicles offline.

PROJECTS

- **Campus News Aggregator (Back End)**: Back end development for a campus news aggregator using Flask with MySQL. Responsible for RESTful APIs, database design, and the implementation of web crawlers that fetch data from the campus website.

- **Spotify Charts Generator**: A full stack Node.js app to create and keep updating playlists of daily top songs for Spotify users. Built with React, Koa and Redis.

- **3D Object Detector (Master's Thesis)**: Built a real-time 3D object detector with deep learning techniques, which utilized feature fusion on RGB images and point clouds.

- **mEDC (Android Application)**: Designed and developed a mobile version of an electronic data capture (EDC) system to collect clinical data in clinical trials.

- **MIPS CPU Implementation**: Implemented a multi-cycle 32-bit MIPS CPU in Verilog, supporting instructions for ALU, shifting, data loading/storing, jump and branch.

- **C0 Compiler**: Implemented a compiler in C. The compiler supports C0 language with basic functions of grammar analysis, error processing, stack management and code optimization.

RELEVANT SKILLS

- **Programming Languages**: Python, JavaScript, C/C++, Java

- **Techniques**: Web Development (Node.js, React, Koa, Flask), Database (MySQL, Redis), Deep Learning (TensorFlow), Computer Vision (OpenCV, Object Detection), ROS, Data Analysis (Machine Learning, Data Visualization), Android Development, Linux, Git