

Zijian Liu



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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 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. Responsible for providing RESTful APIs, database design, and the implementation of web crawlers that fetch data from the campus website.
- Spotify Charts Generator:** A web app to generate Spotify playlists of daily top songs. Built with React and Spotify Web API. It also utilizes Github Actions to update playlists periodically.
- 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 (React, Node.js, Flask, Web Crawler), Relational Database (MySQL), Deep Learning (TensorFlow), Computer Vision (OpenCV, Object Detection), ROS, Data Analysis (Machine Learning, Data Visualization), Android Development, Linux, Git