Kiran Surendran

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SKILLS

Languages: C | C++ | Python | Go | JavaScript (ES5, ES6)/HTML/CSS | MATLAB
Software Tools: Mbed OS | ROS | PyTorch | React | Node.js/Express.js | AWS | Docker | MongoDB | SQL | Apache Kafka
Hardware Tools: Altium Designer | MultisimLive | Solidworks | AutoCAD | KiCad | Arduino | Soldering

EXPERIENCE

Enzuzo Inc. | Software Developer, Special Projects — Jan 2021 - Present

- Spearheaded development of a general purpose, rules-driven website scanning engine using Node.js and Puppeteer
- Worked jointly with CEO and marketing team by conducting product demos and competitive analysis presentations
- Created solution architecture and deployed scan engine infrastructure on Amazon Web Services (Lambda, EC2 containers, DocumentDB, API Gateway)
- Designed responsive, interactive UI/UX for website frontend and browser extension using ReactJS and TailwindCSS
- Optimized production applications with significant code refactoring, reducing build sizes by 40%
- Developed a Material-UI compatible custom theme generation tool for engineering team

UW Orbital | Firmware Lead — Apr 2021 - Present

- Designing software stack and general system architecture for CubeSat's firmware
- Conducted research in satellite development, focusing on designing resilient hardware components, developing fault-tolerant embedded systems and selecting robust serial communication protocols
- Collaborated with team leads in recruiting members, establishing sponsorships, planning team roadmap and compiling requirements for competition

Waterloo Aerial Robotics Group | Electrical Team Member — Mar 2021 - Present

- Currently overhauling the electrical system of a UAV, including redesigning a custom autopilot board
- Designed schematic and board layout on Altium of a brushless DC motor reversal circuit
- Performed circuit simulations to ensure design feasibility using Multisim Live
- Sourced cost-effective, space-saving components and organized information into a Bill of Materials

Waterloo Robotics Team | Firmware/Software Team Member — Jun 2020 - Apr 2021

- Wrote a driver for the DS-25 Netzer Encoder using C++ and Mbed OS, implementing SPI communication and enabling direct memory access for asynchronous reads
- Developed a custom plugin on Ubuntu Linux to handle GPS data conversion and dispatching using C++ and rqt
- Implemented nodes, messages, topics and services using Robot Operating System (ROS)

PROJECTS

GoGrep — Apr 2021 | Go

- Developed a cross-platform command line utility for searching text files/folders for lines that match a given expression
- Implemented an efficient string-search algorithm based on Boyer-Moore, similar to what is used in GNU's grep

LiveLaunch (Hack the Northeast) — Jul 2020 | Dart, Flutter, Unity

- Led AR development by designing the scene in Unity and integrating it with the echoAR platform and mobile application
- Built application back-end to handle launch data API requests

EDUCATION

University of Waterloo | BASc in Mechatronics Engineering September 2020 - Present

AWARDS
Fall 2020 Dean's Honours List (4.00 GPA) • The Governor General's Academic Medal • President's Scholarship of Distinction