DAVID FELDT

MECHATRONICS ENGINEERING

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SKILLS

LANGUAGES/ FRAMEWORKS: C, C++, Python, Arduino, VHDL, PLC, MATLAB, JavaScript, Git, Bash, SQL, AWS, NumPy, TensorFlow, SK-Learn, Jupyter Notebooks, Pandas, SciPy, SymPy

DESIGN: SolidWorks, AutoCAD, Fusion 360, Falstad Circuit Simulator

LAB EQUIPMENT: Oscilloscope, Digital Multimeter, Logic Analyzer, Soldering

PROJECTS

Air Hogs Racer | Custom IR Remote Control Car
September – November 2020
- Integrated IR sensor with recycled helicopter remote and Arduino to remotely control vehicle
- Reverse engineered IR communication protocol by systematically isolating each controller input
- Hand-soldered through hole components and H-Bridge IC on a prototype board to support DC motor and servo

Asteroid Simulator | 3D Asteroid Orbit Simulator
October 2020
- Developed Python web app for input of asteroid orbit data into a 3D vector graphic simulation of the solar system
- Integrated TensorFlow neural net into Python backend to predict asteroids likelihood of impact with earth

Mini Smart Home | IoT House Prototype
February 2020
- Integrated OLED display, LEDs, Servo and DC motor with Arduino; performed logic level conversion using MOSFETs
- Configured a miniature IoT smart home controlled remotely over WIFI through MQTT event broker

Delta Storage | AI Inventory Rover *(DeltaHacks6 Best Productivity Hack)*
January 2020
- Built rover capable of autonomously locating inventory using Arduino and USB camera
- Developed autonomous detection software using C++ and Google Cloud Vision API; achieved detection rate of 94.7%

EXPERIENCE

Lean Payments | Software Engineering Intern
January – April 2021
- Developed RESTful APIs to manage international payment orders using AWS, Node.js, and third-party APIs
- Utilized Serverless framework and AWS microservice architecture for a low cost, auto-scalable cloud infrastructure
- Integrated state management in React front-end using Redux to provide structure and advance scalability
- Implemented automated split stack deployments using AWS CloudFormation and Bitbucket Pipelines, increasing deployment speed by 300%

Thompson Flow Investigations | Engineering Intern
June – August 2020
- Serviced and installed flow monitors using compound weirs to measure flow data
- Qualified flow monitor and sensor inventory by conducting pressure, velocity, and technical readings tests
- Developed torontosmoketesting.ca to notify residents of sanitary sewer testing being conducted

UW Alternate Fuels Team | Mechanical Team Member
January – June 2020
- Devised testing procedure to verify leak free status of custom fuel tank
- Assembled components of hybrid electric vehicle, including body work and wiring harness

EDUCATION

University of Waterloo | BASc Honours, Mechatronics Engineering
May 2024
- Relevant courses: Real-Time Systems, Sensors and Instrumentation, Linear Systems and Signals, Microprocessors and Digital Logic, Data Structures and Algorithms

Udemy | Complete 2020 Data Science & ML Bootcamp
May 2021