Dominic K. Olson

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EDUCATION

University of California, Los Angeles (UCLA) B. S. Electrical Engineering, GPA 4.0 *10/2020 - 06/2024*

Relevant Coursework: Systems and Signals, Digital Signal Processing, Circuit Theory & Lab, Digital Logic Design, Electromagnetics, Intro to EE, Intro Data Structures, Intro to CS, Intro to IoT Design

SKILLS

PCB Design | Breadboarding | Microcontrollers (STM32, ESP32, Arduino) | C | C++ | Python | SystemVerilog

ENGINEERING PROJECTS/EXPERIENCE

Treasure Tracker | Compass that points to coordinates set by the user, first place at IdeaHacks 2022 *01/2022*

- Wrote code to control servo motors and interface a Teensy MCU with a GPS module and 9-DoF IMU
- Designed and soldered the circuit and collaborated with an interdisciplinary team

IEEE at UCLA - Micromouse Lead | Teaching and mentoring 70+ Micromouse students *05/2021 - Present*

- Taught topics including PCB design, control algorithms, motor control, sensors, C, SMD soldering
- Designed a PCB for use while learning with voltage regulation, motor control, and IR sensing
- Reviewed schematics and board layouts for 20 Micromouse PCBs, ordered parts for them

IEEE at UCLA - Digital Audio Visualizer Project | Digital design project using an Altera FPGA *10/2021 - Present*

- Completed several projects in SystemVerilog: stopwatch, calculator, buzzer “piano”

Budgie | BLE connected rhythm game for Music Ed., Honorable Mention at Bruinlabs 2021 *06/2021 - 08/2021*

- Designed circuit to control vibration motors and LEDs and connect different components
- Wrote C++ code for ESP32 Microcontroller to interpret gyro readings and send to phone using BLE
- Collaborated remotely with a team and assembled and tested physical prototype

IEEE at UCLA - Micromouse | Remote collaboration to create a small maze-solving robot *10/2020 - 05/2021*

- Designed, manufactured, and soldered breakout PCBs for motor control and IR sensing
- Implemented PID Control and the Floodfill maze solving algorithm in C on an STM32 microcontroller
- Improved the Micromouse by adding a gyroscope and bluetooth module
- Won first place at UCLA’s All America Micromouse Competition in May 2021

Line Following Car | Completed path fastest out of 107 Intro to EE students *05/2021 - 06/2021*

- Implemented IR sensor fusion and PID control to program the small robot car to follow a curved path
- Wrote a C++ library to use quadrature encoders to distinguish forward and backward motor rotation

Handwriting Recognition with EmbeddedML | Internet of Things Design Final Project *02/2021 - 03/2021*

- Used machine learning to identify six different handwriting motions on a STM SensorTile

IDEAHacks 2021 | Made a WiFi connected checklist that reminds the user to take breaks *01/2021*

- Prototyped using ESP32 microcontroller with IR sensors, OLED and 7 segment displays, piezo buzzer

Digital Effects Pedal | Embedded DSP with Faust workshop at Stanford’s CCRMA *07/2019*

- Wrote code to process audio signals and control effects with four knob potentiometers and a button

UCLA ACM TeachLA | **Instructor and Curriculum Developer** *10/2020 - 06/2021*

- Created curriculum and taught Python at middle schools in Los Angeles

WORK EXPERIENCE

Mathnasium of Redwood City | **Lead Instructor**, *08/2019 - 01/2021;* **Instructor**, *06/2018 - 08/2019*

- Instructed students and developed customized learning plans tailored to each student’s needs
- Led training on math concepts for instructor team and planned social events
- Received the Instructor of the Month award for November 2019