# Jonathan Low

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## Education

### University of California, Irvine
*Irvine, CA*

B.S. in Computer Science and Engineering , GPA: **3.47** *June 2022*

- **Dean's Honors List:** Winter 2018
- **Relevant Courses:** Structures of Programs (A) , Programming in C++ (A) , Digital Systems (A), Physics E & M (A)

## Relevent Experience

### Micromouse UCI
*Irvine, CA*

**Co-Director**, (https://github.com/lowj/fish-mouse) *Dec. 2019 - PRESENT*

- A micromouse is a hand-sized robot that uses distance sensors and motors to navigate a 10ft x 10ft maze.
- Facilitating lectures for **35** students each week on Microcontroller programming, circuit design, power systems, MOSFETS, and motor drivers.
- Writing software in **C++** to communicate with distance sensors, motors, and encoders.
- Developing a PCB to expedite building process for students.

### CanSat UCI
*Irvine, CA*

**Software and Electrical engineer**, (https://sites.google.com/a/uci.edu/cansat/) *Oct. 2019 - PRESENT*

- Senior design project to create a can-sized satellite that transmits temperature, pressure, air quality, and speed data to a ground station.
- Programming **STM32** in **C++** to communicate with 6 different sensors (**I2C/SPI**) and a radio transmitter.
- Collaborating on a overall team of 10 members and a software/electrical sub-team of 3 members.
- Researched and Implemented 4 different sensors into the electrical system.

## Projects

### Pirate Rover
Devpost (https://devpost.com/software/the-pirate-rover) *Jan. 2019*

- Collaborated with 4 teammates on building a autonomous vehicle using Arduino and Raspberry pi.
- Implemented distance sensors and a motor controller.
- Won **3rd** place for **Northrop Grumman's challenge at UCSD HARD Hacks 2020**

### Macropad
Github, Hackster.io, (https://github.com/lowj/lazy-board) *Dec. 2018 - June 2019*

- Created a 4x4 keypad that uses mechanical keyboard switches and sends key presses through USB.
- Designed circuit and created the **PCB** in KiCAD.
- Programmed in **C++** to read the switch states in the keyboard matrix, controls the LED driver, and customizes keys.
- Applied design techniques found in consumer grade keyboards, such as a keyboard matrix, switch de-bouncing, and diodes to prevent unintended key presses.
- Wrote comprehensive project page on Hackster.io that has over **5,500** views.

### Reddit Bot
Github (https://github.com/lowj/reddit-bot) *Aug. 2017 - Feb. 2018*

- Created a Discord bot with **Node.js** to retrieve posts from Reddit.
- Capable of getting posts on subreddits, listing posts on a page, and going to next/previous pages.
- Utilizes Reddit's **REST api**.

## Activities

### Information and Computer Science Department
*Irvine, CA*

Lab Tutor *Jan. 2020 - PRESENT*

- Tutoring 4 hours a week, in labs of **30** students.
- Assist an average of **20** different students a week with **Python** problems.

### IEEE UCI
*Irvine, CA*

Lab Manager *Aug. 2019 - PRESENT*

- Collaborate with **10** other board members to organize workshops and events.
- Hosted a two hour **PCB** Design workshop for over 40 students

## Skills

**Languages** *Proficent:* Python, C++ *Familiar:* Scheme, VHDL

**Tools** KiCAD, soldering, Photoshop, AutoCAD, OpenCV

**Electrical** *Familiar:* I2C, SPI, CAN, OBD2, Raspberry PI, STM32