

Mira Welner UC Davis Undergraduate Researcher — Computer Engineer — Programmer

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EDUCATION

University of California Davis, Junior
3.79 Engineering GPA

Computer Science and Engineering Major
3.58 Cumulative GPA

PROGRAMMING SKILLS

Programming Languages: Python, C++, Java
Scripting/Markup Languages: HTML, CSS, JavaScript

CURRENT PROJECTS AND ACTIVITIES

Integrative Biology and Predictive Analysis Laboratories Researcher (Summer of 2020)

I am conducting research at the Integrative Biology and Predictive Analysis laboratory at UC Davis led by Professor Tagkopoulos. I am working with cutting edge natural language processing systems such as BERT to create AI systems for studying biological sciences.

Bear Laboratories Researcher (2020-present)

I am an undergraduate researcher for Professor Schofield and BEAR Laboratories at UC Davis, where I am programming a myoelectric signal detection band to understand new gestures that were not previously programmed into the band. I will be training a model to understand the raw data given by the MyoBand, so that the MyoBand will be able to control a robotic hand connected to a raspberry pi. The code will ultimately be part of a project to allow astronauts to control a third arm on their space suit, and allow people with muscular degeneracy disorders to use robotic exoskeletons.

President of UC Davis Hyperloop (2019-present)

I am the president of Onelooop, a team at UC Davis that competes in SpaceX's annual hyperloop competition. I lead the team in researching, designing, and manufacturing the pod that we will race in a vacuum tube at Hawthorne. Our current pod uses cutting edge technologies such as linear induction motors and eddy current braking. In the most recent competition we were ranked in the top twenty-one teams internationally.

PAST PROJECTS AND ACTIVITIES

MITHacks (September 11-13 2020)

At the MIT (virtual) Hackathon my team developed a 'platonic tinder' web app for finding friends during the COVID pandemic. I focused on the HTML5 and CSS, but also worked a bit in the backend and helped setup flask on the server.

PennApps Hackathon (September 11-13 2020)

My PennApps hackathon my team developed a program for detecting whether an individual is wearing a mask based on surveillance footage. The AI was developed using a vgg19 model in Google Colab which was then transferred to a tkinter python script.

UC Davis Cybersecurity Team CTF coordinator (2018-2019)

The UC Davis Cybersecurity Team regularly competes in cybersecurity competitions such as the Collegiate Penetration Testing Competition, the US Department of Energy CyberForce Contest, and many more. I lead our team while competing in these events, determining and executing our 'plan of attack' during the competition.

Lawrence Livermore National Laboratories Programmer (Summer of 2019)

I participated in Lawrence Livermore National Laboratories Summer Scholar program. I programmed for the computing division and I updated, refactored, and designed unit tests for the six million line Java codebase that runs the National Ignition Facility. I presented my research at the Student Poster Symposium.

Gem5 Web Application Developer (Spring of 2019)

I developed a web application to be used by professor Lowe-Power at UC Davis. This application will interact with and display the results of the Gem5 simulator, a virtual machine used by Google and other companies for studying computer architecture. This allowed his team to conduct their research on Gem5 more efficiently.

Researcher for Professor Matthew Bishop (2018-2019)

I participated in a cybersecurity research team led by Professor Matthew Bishop. I studied the security vulnerabilities of the Python language, and analyzed vulnerabilities in the Yolo County voting machines.

NASA L'Space Academy (2018-2019)

I participated in the NASA L'Space Virtual Academy program where my team of ten engineers and I worked to develop a preliminary design review modeled after what NASA engineers and scientists create when proposing missions. I functioned as the team's deputy leader.

Orbital Propagator Designer (2018-2019)

I led a programming team in designing an orbital propagator, which is a program that takes in data involving a satellite's position and uses orbital mechanics to predict where it will be in the future. The orbital propagator will be used in a 2U Cubesat that will be launched by UC Davis to observe and record the effects of climate change on the Earth using photography.