

Mira Welner

Computer Science and Machine Learning Researcher — Python Programmer

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EDUCATION

University of California, Davis

Computer Science Engineering, BS

Skills: | Python3 | ReactJS | C++ | Object Oriented Programming | MySQL | Unix/Linux | Git/GitHub

September 2018 — June 2022

Overall GPA: 3.4 — Major GPA: 3.5

PROGRAMMING ROLES

SignatureDX Assistant Researcher | Applied Machine Learning

July 2023 — Present

- I am currently working with Professor Paul Cohen at SignatureDX, an early stage biomedical sciences startup
- I am a member of the analytics team, and work with machine learning and data science to solve problems in the biomedical field

Specere Lab Programmer | Data Science

August 2022 — June 2023

- Collaborated with Professor Thomas Beechem on developing a data-lean algorithm to interpret spectroscopy data
- As the main programmer in a mechanical engineering lab, I maintained the lab's GitHub repository, teach my labmates Python and Jupyter Notebooks and provide guidance to other teams when they face programming challenges in their projects
- After the completion of the program, and I am still working with Professor Beechem bring the project to a publishable state and complete the manuscript.

CMU Image Science Labs Programmer | Computer Vision

June 2021 — September 2021

- Collaborated with Professor Aswin Sankaranarayanan at CMU Image Science Labs to develop a modified autoencoder for compressing hyperspectral images into material maps and spectra, utilizing hypersepectral and material properties.
- Worked with numpy based matrix manipulation to decode the hyperspectral image. Used Matplotlib to display the results.
- My python code can be found in the following repository:
<https://github.com/MiraWelner/Unsupervised-Identification-of-Materials-with-Hyperspectral-Images-code>

Schofield Lab Undergraduate Programmer | Robotics and Prosthetics

September 2019 — March 2022

- Designed a user study for young children utilizing a video game interface connected to a myoelectric detection system and Raspberry Pi 4. I programmed both the pi and the system using C++, and the video game using C#. The data was collected and stored using an SQL Database
- My research was included in a proposal which successfully earned the lab an NSF grant
- Received a Provost Undergraduate Fellowship Award and presented my work at the 33rd Annual UC Davis Undergraduate Research, Scholarship and Creative Activities Conference
- Co-authored a publication submitted to the IEEE ICORR conference, responsible for designing figures and describing my portion of the programming.

National Ignition Facility Summer Scholar | Software Engineering

June 2019 — September 2019

- Updated and refactored the six million-line Java codebase responsible for operating the National Ignition Facility at Lawrence Livermore National Laboratories.
- Developed and implemented unit tests for specific sections of the codebase that lacked adequate testing coverage as part of the lab's migration to test driven development for their legacy codebase
- Presented at the 2019 Lawrence Livermore Laboratory Summer Scholar Poster Symposium

LEADERSHIP ROLES

UC Davis HyperLoop Team President | OneLoop

September 2019 — March 2021

- Led the UC Davis OneLoop team in the research, design, and manufacturing of the Davis pod for the annual HyperLoop competition
- Developed the control system programming for the pod using Structured Text
- Successfully competed in the 2018 OneLoop college competition, earning a spot among the top 21 teams selected to attend the event in Hawthorne

UC Davis Cybersecurity Team Competition Leader | Cybersecurity

December 2018 - March 2019

- Led our five person team in participated in various cybersecurity competitions, including the Global Collegiate Penetration Testing Competition held at Stanford University
- Helped instruct new members during cybersecurity workshops