

Mira Welner

Machine Learning and Computer Vision Researcher — Computer Scientist — Software Engineer

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EDUCATION

Purdue University,

Mechanical Engineering, PhD

August 2022 — Present

University of California, Davis

Computer Science Engineering, BS

September 2018 — June 2022

Overall GPA: 3.45 — Major GPA: 3.57

Skills: Python3 | Tensorflow | Keras | Scikit-learn | Matplotlib | HTML3 and CSS3 | C++ | Java | MATLAB | Wireshark

CONFERENCES AND PRESENTATIONS

Characterizing Pediatric Hand Grasps During Activities of Daily Living to Inform Robotic Rehabilitation and Assistive Technologies

Marcus Battraw, Peyton Young, Mira Welner, Wilsaan Joiner, Jonathon Schofield

International Conference on Rehabilitation Robotics (ICORR 2022)

A video game system to assess advanced control interfaces for pediatric prostheses [Poster]

Mira Welner, Jonathon Schofield

33rd Annual UC Davis Undergraduate Research, Scholarship and Creative Activities Conference (URSCA 2022)

Unsupervised Identification of Materials with Hyperspectral Images [Abstract]

Mira Welner

Thirty-Sixth AAAI Conference on Artificial Intelligence (AAAI 2021)

Identification of Materials in Hyperspectral Images Using an Autoencoder and Relu Activation [Talk] [Poster]

Mira Welner, Aswin Sankaranarayanan

2021 Virtual Ken Kennedy AI and Data Science Conference

Identification of Materials in Hyperspectral Images Using a Convolutional Neural Network based Autoencoder [Poster]

Mira Welner, Aswin Sankaranarayanan

2021 Purdue Virtual Undergraduate Showcase

Updating the National Ignition Facility Codebase from Java 8 to Java 11

Mira Welner, Lyle Beaulac, Mikhail Fedorov

2019 Lawrence Livermore Laboratory Summer Scholar Poster Symposium

RESEARCH ROLES

Specere Lab PhD Student | Applied Machine Learning

August 2022 — Present

- Utilizing my background in deep learning to support research in the fields of optics and materials engineering
- Designing algorithm to determine the ideal location of sensors when observing the spectra of an object.

Schofield Lab Undergraduate Researcher | Robotics and Prosthetics

September 2019 — March 2022

- Programmed a myoelectric signal detection band to interpret new gestures, allowing the MyoBand to control a robotic hand connected to a Raspberry Pi 4
- Designing methods to analyze children's gestures to obtain data for the prosthetic arm by creating a pipeline from a myoelectric armband to a MatLab analysis program
- Received a Provost Undergraduate Fellowship Award for my work in designing user studies

Sankaranarayanan Undergraduate Researcher | Computer Vision

June 2021 — September 2021

- Designed modified autoencoder to compress hyperspectral images into their respective material maps and spectra using hypersepectral and material properties
- Collaborated with graduate students and Professor Aswin Sankaranarayanan at CMU Image Science Labs as part of a fully funded REU Funding was provided by an NSF Expeditions in Computing Award

National Ignition Facility Summer Scholar | Software Engineering

June 2019 — September 2019

- Updated and refactored the the six million line Java codebase that runs the National Ignition Facility at Lawrence Livermore National Laboratories
- Designed unit tests for certain portions of the codebase that did not have unit testing

LEADERSHIP ROLES

UC Davis HyperLoop Team President | OneLoop

September 2019 — March 2021

- Led UC Davis OneLoop team in researching, designing, and manufacturing the Davis pod to be raced the annual HyperLoop competition
- Programmed the pod's control system in Structured Text
- Participated in the 2018 OneLoop college competition as one of the top 21 teams selected to attend the competition in Hawthorne

NASA L'Space Academy Deputy Leader | NASA

December 2018 - March 2018

- Served as deputy leader in a ten person programming team in designing a NASA style mission proposal
- Learned about the state of space exploration from NASA executives

UC Davis Cybersecurity Team Competition Leader | Cybersecurity December 2018 - March 2019

- Participated in cybersecurity competitions including the Global Collegiate Penetration Testing Competition at Stanford University
- Led the five person team in breaking into the targeted system for competitions

Lead Orbital Propagator Designer | Space and Satellite Society September 2018 - March 2018

- Led a ten person undergraduate programming team in designing and implementing an orbital propagation system
- The orbital propagator will be integrated into in a 2U Cubesat launched by UC Davis to photograph and observe the effects of climate change
- The launch and cubesat are sponsored by the NASA Big Idea Project

AWARDS AND FELLOWSHIPS

- Thirty-Sixth AAAI Conference on Artificial Intelligence Undergraduate Consortium Fellow | 2022
- CRA Outstanding Undergraduate Research Nomination | 2021
- NSF Expeditions in Computing Award 1730147 | 2021
- MERGE Fellow at the University of Illinois Urbana-Champaign | 2021
- UC Davis Provost Undergraduate Fellow | 2020