

Kainoa Woessner

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Education

University of California, San Diego, BS in Computer Engineering

Sept 2022 – December 2025

- GPA: 3.96, Provost Honors recipient
- **Related Coursework:** Software Engineering, Machine Learning, DBMS, Computer Architecture, Signals & Systems, Data Structures, Image Processing, Parallel Computing, Operating Systems

Technologies

Languages: Python, Java, C++, C, JavaScript, HTML, CSS, MATLAB, SystemVerilog, SQL, OpenCL, Jupyter

Tools: Git, Vim, pandas, NumPy, React, SciPy, skimage, scikit-learn, Plotly Dash, Arduino, Shapr3D, OpenCV, TKinter

Experience

Research and Development Intern, Allez Health – Carlsbad, CA

June 2025 – Present

- Developed Python programs that automate large-scale CGM data processing in order to analyze sensor trends and identify performance improvements
- Optimized existing software by identifying bottlenecks and implemented multithreading to reduce runtime by up to 50x
- Analyzed processed data to identify manufacturing factors impacting electrode performance and worked on developing a machine learning model to predict sensor sensitivity from calibration metrics and electrode measurements
- Performed electrochemical tests such as enzyme testing, electropolymerization testing, open circuit potential (OCP), and linear sweep voltammetry (LSV), to generate datasets for sensor performance evaluation

Technical Lead, UCSD Project in a Box – La Jolla, CA

June 2024 – June 2025

- Managed task distribution and coordinated project inventory to develop an Arduino football game using IR sensors and laser-cut components
- Authored comprehensive documentation and step-by-step assembly guides, enabling the project to be replicated in future organization workshops
- Contributed to community outreach through workshops specialized for elementary students

Projects

Cartoon Converter

github.com/KaiWoessner/CartoonConverter

- Developed a full-stack image processing web app using React, Flask, and OpenCV to convert user-uploaded images into cartoonized versions
- Implemented a dynamic pipeline triggered by slider updates to apply grayscale conversion, adaptive thresholding, morphological operations, bilateral filtering, and bitwise masking

Image Ridge Detector

github.com/KaiWoessner/RidgeDetector

- Designed and implemented an image ridge detection algorithm in Jupyter Notebook using NumPy and SciPy that follows a workflow of smoothing, Hessian filtering, non-maximum suppression, and hysteresis thresholding
- Created interactive low and high threshold sliders with IPyWidgets to enable real-time adjustment of ridge visibility

Dev Journal

github.com/cse110-sp24-group25

- Developed a local-first journaling website using HTML, CSS, and Javascript that includes features for task management, mood and productivity tracking, and past activity reviewing
- Formed a CI/CD pipeline with Jest and GitHub Actions that automates unit testing, end-to-end testing, and code quality checks to ensure reliable website deployments
- Employed Agile methodologies, including sprints, daily stand-ups, and retrospectives, to manage project development

National Football League Data Analysis

github.com/KaiWoessner/NFLDataAnalysis

- Processed play-by-play and advanced metric datasets using pandas, NumPy, and matplotlib in Jupyter Notebook to generate dynamic, in-depth visualizations of player and team performance in the National Football League