Katherine J Worms

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EDUCATION

B.S. Computer Science, Oregon State University, Corvallis, OR — June 2025
B.S. Chemistry & B.S. Geoscience *w/Honors*, University of Utah, Salt Lake City, UT — May 2019

Relevant Coursework: Computer Architecture & Assembly, Data Structures, Algorithms, Operating Systems, Web Development, Software Engineering, Databases, Intro to Networks, Cloud Application Development, Open Source Software

TECHNICAL SKILLS

Languages: Python, C, JavaScript, SQL, HTML/CSS
Frameworks/Libraries: Flask, Express, Node.js, React, TensorFlow, Keras, Jekyll
Tools: Git/Github, Google Cloud Platform, Docker, Auth0, Postman, VS Code, ArcGIS Pro
Concepts: REST APIs, Machine Learning, Cloud Deployment

COMPUTER SCIENCE PROJECTS

Top-N Music Genre Classification Neural Network

- Designed and deployed a CNN-based music genre classifier using spectrogram image analysis and audio feature extraction

Astronomical Data Management System

- Developed a database management system using SQL, Python, and Flask to handle astronomical data. Created a user-friendly interface that could handle all CRUD operations, enabling efficient management of large datasets.

Course Management Web Application

- Developed a RESTful API with JWT Auth and integrated Google Cloud Datastore/Storage.

Group Fitness Message Board Web Application

- Developed a Python and Flask-based message board application for a CrossFit gym, utilizing microservices architecture. Followed SCRUM methodology throughout the development process, ensuring iterative progress and efficient team collaboration.

Website Development

- Built a fully functional website from scratch for a Web Development course using HTML, CSS, JavaScript, and Node.js. Developed dynamic, responsive web pages and implemented server-side logic, showcasing experience in both front-end and back-end development skills.

BigShell Project

- Implemented a POSIX-like shell called BigShell with the ability to parse command-line input into executable commands, execute various external commands as separate processes, implement and execute several shell built-in commands (such as cd, exit, and unset), perform input/output redirection on commands, manage shell variables, implement signal handling, and provide functionality for managing processes and pipelines using various job control utilities.

WORK EXPERIENCE

Environmental/Process Chemist, *Cascade Pacific Pulp*, Halsey, OR — Sept 2021 – Present

- Collect and analyze water samples for environmental compliance (EPA, OR DEQ) and QA/QC standards. Manage lab operations, including inventory, training, and SOP updates.
- Developed a low-cost procedure for measuring pond depth using Python and open-source software, along with a custom Python script for data processing and visualization.

Teaching/Research Assistant, *Oregon State University, Geology* — Sept 2019 – Sept 2021

- Conducted gradate research on topographic modeling of the Oregon Coast, utilizing Python and Matlab to explore the interactions between climate, uplift, and erosion.
- Assisted in developing, teaching, and grading coursework for geology courses.

USGS – NAGT Intern, *United States Geological Survey*, Reston, Virginia — June – Sept 2019

- Analyzed grain size and geochemical data from lake cores to study Late Holocene Colorado River discharge to the Gulf of California.

Undergraduate Research Assistant Jan 2016 – May 2019

- Investigated an Eocene Black Shale using Matlab to process and correlate large datasets (3000+ data points) with total organic and x-ray fluorescence data.