

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 <i>w/ Honors</i> , 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, Microservices, Agile Development

COMPUTER SCIENCE PROJECTS

Top-N Music Genre Classification Neural Network

- Designed and deployed a CNN-based music genre classifier with spectrogram image analysis and audio feature extraction using TensorFlow and Keras. Application used Python/Flask and deployed via Docker containerization on Google Cloud Platform.

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 secure, scalable RESTful API (Flask, GCP Datastore) with user authentication (JWT).
- Employed role-based access control (admin, instructor, student) and deployed on Google App Engine.

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.

BigShell (Custom POSIX-like shell)

- Implemented a POSIX-like shell called BigShell in C with job control, signal handling, I/O redirection, and process management.

WORK EXPERIENCE

Environmental/Process Chemist , <i>Cascade Pacific Pulp</i> , Halsey, OR	Sept 2021 – Present
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- Collected and analyzed water samples for environmental compliance (EPA, OR DEQ) and QA/QC standards. Managed 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 , <i>Oregon State University, Geology</i>	Sept 2019 – Sept 2021
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- Conducted graduate 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 , <i>United States Geological Survey</i> , Reston, Virginia	June – Sept 2019
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- 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
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- Investigated an Eocene Black Shale using Matlab to process and correlate large datasets (3000+ data points) with total organic and x-ray fluorescence data.