YUMENG "MONA" ZHAO

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EDUCATION

UNIVERSITY OF CALIFORNIA, SANTA CRUZ, M.S. in Computer Science Expected Graduation: June 2025
Coursework: Data Structures and Algorithms, Computational Models, Applied Machine Learning, Artificial Intelligence, Probability and Statistics, Classical and Bayesian Inference, Operating Systems, Web Applications

TECHNICAL SKILLS

Programming: Python, Java, C/C++, HTML/CSS, JavaScript, SQL, MATLAB
Libraries/Tools: Python (NumPy, Pandas, scikit-learn, TensorFlow), R, CVAT, AnyLabeling

WORK EXPERIENCE

UCSC ADVANCED VISUALIZATION AND INTERACTIVE SYSTEMS LAB, Santa Cruz, CA Jan 2024 – Present
Graduate Student Researcher

- Currently involved in a USGS-sponsored project leveraging machine learning models for shoreline detection over various time spans, focusing on enhancing accuracy and efficiency.
- Tasks include analyzing research, refining algorithms through experimentation, exploring visualization methods for representing results. and presenting findings through reports and presentations.

ROBOTICS CATS | CITRIS WORKFORCE INNOVATION, San Jose, CA May 2023 - July 2023
Software Developer Intern

- Researched and compared various mapping systems, integrating insights from customer interviews, and conducted in-depth analyses of wildfire risk and market dynamics, documented findings into articles.
- Played a key role in full-stack software development, focusing on API server construction, advanced data visualization, and mathematical algorithm design for geographic information.

UCSC ADVANCED VISUALIZATION AND INTERACTIVE SYSTEMS LAB, Santa Cruz, CA Jan 2022 – Dec 2022
Research Intern

- Conducted independent study on image classification using machine learning. Analyzed research, enhanced algorithms through experimentation, and communicated findings through reports and presentations. Contributed to research paper development in computer vision and machine learning.

PUBLICATIONS

Co-authored "RipViz: Finding Rip Currents by Learning Pathline Behavior" in IEEE Transactions on Visualization and Computer Graphics

PROJECTS

ECOSCAN Jan 2024
React | Flask | Firebase | Tailwind CSS

- Led a Full Stack development project at CruzHacks with 300+ participants. Developed an environmental impact assessment tool that utilized **Beautiful Soup** for scraping data from Amazon, using **OpenAI** to provide insights into the sustainability and environmental impacts of products. The project earned recognition, winning the **Most Ambitious Award**.

LOOKOUT DESKTOP May 2023 - July 2023
Bootstrap | Flask | Waitress | SQLite

- Designed and implemented a geospatial mapping and camera control application using **OpenLayers**, enabling real-time data visualization, dynamic layer rendering for camera views, and alert zones, leading to a significant enhancement in wildfire monitoring efficiency and situational awareness.

SHORELINE EXTRACTION & RIP CURRENT DETECTION May 2022 - Jan 2023
PyTorch | Scikit-Learn | OpenCV | CNN model | LSTM model

- Automated image processing tasks, enhancing efficiency by reducing manual intervention. Optimized shoreline detection in beach camera video feeds through detailed neural network analysis.
- Collaborated with Ph.D. students on the design of a machine-learning model. Took charge of the collection, preprocessing, and analysis of data from drone-generated images and videos.