Sofia Ingersoll

/soF-AYA Ing-er-saul/

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EDUCATION

Master of Environmental Data Science (June 2024)
Bren School of Environmental Science & Management – University of California, Santa Barbara
Leadership: *Class Co-Chair; Dean's Advisory Committee, Representative; Bren Student Leader Collective, Representative ('23–'24)*

Selected Courses: Statistics for Environmental Data Science, Modeling Environmental Systems, CEQA/NEPA Workshop, Working with Environmental Datasets, Machine Learning in Environmental Science, Environmental Policy Evaluation, Ethics & Bias in Environmental Data Science, Geospatial Analysis and Remote Sensing, Data Visualization and Communication, Databases and Database Management

Bachelor of Science, Chemistry (June 2023)
Earl Warren College – University of California, San Diego
Certification: *American Chemical Society ("ACS") Certification ('23)*

Selected Courses: Calculus-Based Prob & Stats; Chemical Physics: Quantum Mechanics, Statistical Thermodynamics I & II; Analytical Chemistry Laboratory; Organic Chemistry I, II, & III and Laboratories; Data Ethics; Environmental Chemistry I & II; Instrumental Chemistry Laboratory

Associate of Science, Mathematics, Physics, Natural Science, & Chemistry (May 2021)
Moorpark College – Moorpark, CA
Leadership: *Women in Engineering, Mathematics, & Science, Treasurer ('20–'21)*

Selected Courses: Calculus I, II/Analytical Geometry, & III; Waves, Heat, Optics, & Modern Physics and Laboratory; Physics Electricity & Magnetism and Laboratory; Differential Equations; Linear Algebra; Mechanics of Fluids & Solids and Laboratory, Environment in Society

RELEVANT SKILLS

Analytical & Technical: Geospatial analysis, quantitative & qualitative data analysis, machine learning analysis, map visualizations, carbon life cycle analysis (LCA), vegetation identification and remote monitoring, statistical analysis, accuracy and validation testing, uncertainty quantification, tabulation of natural indices, database management, data viz, science communication, error analysis, technical writing, metadata documentation CEQA/NEPA assessments, energy systems analysis, dashboard/web app development, web application containerization, continuous integration
Languages & Software: R, Python – proficient, SQL, Git/Bash – confident, HTML, CSS, SCSS, JS – familiar, GitHub, Version Control, JupyterLab, RStudio, VS Code, Microsoft Suite, ESRI Products ArcGIS & QGIS, Google Earth Engine, ArcPy, Docker

ENVIRONMENTAL SCIENCE EXPERIENCE

Geospatial Machine Learning Data Engineer for the Los Angeles County Ecological Conservation Project: Mapping and Identifying the Health of Urban Oak Trees in Los Angeles County (Expected: 6/25–8/25)
NASA DEVELOP Analytical Mechanics Associates @ Jet Propulsion Laboratory, Pasadena, CA
Affiliations: *Los Angeles County, Internal Services Department; Los Angeles County Fire Department*

- Develop a reproducible novel remote sensing machine learning tool using NASA satellite data to identify urban oak trees within LA County and track their health over time. Contribute to exceptional science communication materials: technical paper, code repository, poster, presentation, and peer reviewed publication (to be reviewed).

Project Lead & GIS Specialist for the San Bernardino Wildland Fires Project: Assessing the Conditions of Pre-Fire and Post-Fire Vegetation in San Bernardino California with NASA Earth Observations (1/25–4/25)
NASA DEVELOP Analytical Mechanics Associates @ Jet Propulsion Laboratory, Pasadena, CA
Affiliations: *USDA Forest Service Wildland Fire Management R&D and San Bernardino National Forest; San Bernardino Water Municipal District; Cal State University, San Bernardino, Institute for Watershed Resiliency (IWR); California State University, Northridge, Center for Geospatial Science & Technology*

- Analyzed, quantified, synthesized, and communicated findings for NASA's Earth observation satellite and radar data. Produced high quality science communication materials such as a technical paper, code repository, poster, presentation, a comic strip, and peer reviewed publication (currently under review). Established project organization highlighting milestones, defined QA practices, acted as the primary point of contact when

conducting stakeholder interviews and maintained partner relations. Presented findings in-person at a live-streamed event, as well as answered questions.

- Assessed pre-fire and post-fire landscape characteristics of the Line Fire (2024) and the Angelus Oak Understory Rx Burn (2024) to understand and compare vegetation water use trends, fire-fuel recovery rates, and soil burn severity over time. Conducted an ordinary least squares time-series regression analysis to compare the case study wildfire and prescribed burn using composite raster images. A significant relationship (**$p < 0.05$) for the median enhanced vegetation index over time was found for both fire-types. Analysis provided leading insights to support the local use of prescribed fires to protect urban development from the spread of wildfires in San Bern. County.

Environmental Data Scientist (10/23–10/24)
The 2035 Initiative, UCSB – Santa Barbara, CA
Affiliations: *California Climate Action (CCA); The Energy Governance and Political Economy (EGAPE) UC Santa Barbara; Institute of Energy Efficiency (IEE), UCSB; Political Science Department, UCSB*
GitHub Organization: **https://github.com/The2035Initiative**

- Supported a myriad of projects with interdisciplinary teams, compiled, analyzed, and synthesized datasets, conducted policy and literature reviews, developed novel remote surveying methods, provided statistical interpretations, accuracy, and validation testing, interactive maps, and other informative data visualizations, trouble-shot, and optimized workflows.
- Interpreted qualitative and quantitative survey response trends to evaluate the acceptability and impact of sustainable energy policy suggestions, as well as sentiments on climate change and adaptation. Collaborated with various teams to use this information to develop strategic policy and energy infrastructure suggestions and solutions which reflect the needs and desires of residents.

Environmental Data Analyst (12/22–6/23)
Measuring Airborne Toxics and Determining Oceanic Relationships (MATADOR) Project
The Slade Lab – La Jolla, CA
Affiliation: *UC San Diego Dept of Chemistry & Biochemistry, Atmospheric & Analytical Chemistry; Scripps Institute of Oceanography, UC San Diego; Environmental Protection Agency (EPA)*
Principal Investigator: *Dr. Jonathan Slade*

- Produced weekly reports using local meteorological and hydrological data to evaluate local climate effects on the quality of air, sea water, storm water, and wastewater with respect to their potential plastic pollution impacts on public health. Assisted the organization of the project by standardizing the various environmental data sources used by all team members and created various preliminary data visualizations.

HIGHLIGHTED PROJECTS

Master's Capstone Lead Data Engineer & Communications Manager (1/24–6/24)
Understanding the Influence of Parameter Value Uncertainty on Climate Model Output
Affiliation: *National Center for Atmospheric Research - Climate & Global Dynamics Lab (NCAR CGD); Bren School of Environmental Science & Management; National Center for Ecology Analysis and Synthesis (NCEAS).*
Blog | **Presentation** | **Data Repository** | **Technical Documentation**

- Engaged with a mix of international and cross-national stakeholders to ensure the deliverables would provide essential information and include specific key features. Communicated clearly across the team, and adjusted timelines appropriately when necessary. Developed palettable science communication materials to assure the information would be well understood and received by a wide public audience.

Spatially Distorted Signaling: How Opinions Against Wind Infrastructure Delay Our Transition to Renewable Energy
Affiliation: *Bren School of Environmental Science & Management; NCEAS. December 2023.*
Blog | **GitHub Repository**

Investigation of the Thomas Fire Impacts on Air Quality in Santa Barbara County, CA (2017 - 2018)
Affiliation: *Bren School of Environmental Science & Management; NCEAS. November 2023.*
Blog | **GitHub Repository**