KRISTIN ART

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EDUCATION

Bren School of Environmental Science & Management – University of California, Santa Barbara (UCSB)
Master of Environmental Science and Management 4.0 GPA (Expected 6/2024)

Specialization: Corporate Environmental Management
Emphases: Environmental Data Science, Energy and Climate
Highlighted Coursework: Geospatial Analysis & Remote Sensing, Statistical Machine Learning, Data Visualization & Communication, Advanced Data Analysis, Environmental Modeling, Computing for Environmental Science & Management, Carbon Accounting, Cost Benefit Analysis, Life Cycle Assessment, Environmental Law & Policy, Economics of Environmental Management, Environmental Writing

University of Southern California (USC), Los Angeles, CA
Bachelor of Science in Biological Sciences, 3.69 GPA (12/2019)

Honors/Awards: *cum laude*, Dean's List (4 semesters)
Involvement: Fisher Fellowship Program (FFP) Grants and Funding Coordinator, FFP Benefactor Updates Coordinator, Sierra Club Conservation Club volunteer, Cycling Club member, Rock Climbing Club member

DATA SCIENCE EXPERIENCE

Identifying Geographic Feasibility for California's Hydrogen Hub (4/23–present)
Master's Capstone Project | **Client: CA Governor's Office of Business and Economic Development**
Roles: Data Analyst, Financial Manager | **Skills:** R, Git, Database Management, Project Management

- Estimate the 2030 production, demand, and costs of green hydrogen from wind and solar resources across space in California by analyzing 8+ datasets and developing an optimized electrolyzer siting model in R.
- Create effective visualizations to communicate the geospatial relationships between potential green hydrogen production, demand, environmental health indicators, and additional variables to the public.
- Organize project database and write technical documentation to encourage reproducibility.

Predicting Residential Energy Usage based on Weather Conditions (1/24–present)
Master's Statistical Machine Learning Course Project | **Skills:** R, Git | **Github Repository**

- Develop a machine learning model using a regression approach to predict the total power consumption of single-family apartments in Massachusetts (MA) based on meteorological conditions in R.
- Tidy, explore, and analyze data from 114 single-family apartments between 2014-16 published by the University of MA Smart* Data Set for Sustainability in R.

Environmental justice impacts of historical redlining in Los Angeles County (9/23–12/23)
Master's Geospatial Analysis and Remote Sensing Course Project | **Skills:** R, Git | **Github Repository** | **Blog**

- Analyzed the spatial patterns of environmental health hazards and recent bird biodiversity observations relative to historically redlined communities of Los Angeles (LA) county in R.
- Produced effective visualizations of the analysis using the sf, tidyverse, ggplot2, and kableExtra packages in R and communicated results by publishing a blog post on my personal website.

Geospatial extent of blackouts from winter storms in Houston, Texas (9/23–12/23)
Master's Geospatial Analysis and Remote Sensing Course Project | **Skills:** R, SQL, Git| **Github Repository**

- Determined the extent of power outages through spatial data operations and analyzed the statistical correlation between median income and census tracts that experienced power outages in R.
- Queried spatial data from 2 geopackages using SQL and processed Suomi satellite imagery using terra in R.

– Continued –

ENVIRONMENTAL EXPERIENCE

Environmental Protection Agency Office of Air and Radiation, Washington, D.C.
Student Trainee (Environmental Protection) (6/23–present)

- Developed a draft webpage about consumption-based electricity generation rates for the Emissions and Generation Integrated Resource Database (eGRID) through data analysis and visualization in R.
- Analyzed the number of electricity generating units (EGUs) in U.S. power plants that are associated with complex and multi-stack configurations to inform emission apportionment methods for policies in R.
- Estimated emission rates for electricity generation in 5 U.S. territories through research and collaboration.
- Created a guidance document for R and Github best practices for the EPA Emissions Monitoring Branch.
- Developed a script in R to automate visualization and QA/QC of historical eGRID data from 2010-2021.
- Summarized over 30 public comments from stakeholder organizations on the proposed Clean Air Act Section 111(d) Rule on emissions guidelines for existing power plants to inform final rulemaking.

San Francisco Estuary Institute, Richmond, CA
Environmental Analyst (1/20–8/22)

- Planned and oversaw 3 water quality research projects with annual budgets between $100k – 450k.
- QAQC'ed and analyzed environmental data in Python to inform wastewater management decisions.
- Coauthored 4 technical reports used to enhance research methodology and convey environmental trends.
- Coordinated 70+ boat-based field days to collect high-frequency water quality monitoring data.
- Supervised 2 undergraduate interns for 10 weeks in designing and executing a field experiment to quantify the flux of water quality constituents from restored salt ponds into San Francisco Bay.

ADDITIONAL ENVIRONMENTAL EXPERIENCE

Teaching Assistant – UCSB (multiple Departments) Santa Barbara, CA (9/22–present)
Instruct 270+ undergraduate students through laboratory-, field-, or discussion-based weekly lessons.
Marine and Environmental Biology Research Assistant – USC Hutchins Lab, Los Angeles, CA (8/19–12/19)
Investigated how environmental conditions contribute to harmful blooms of *Pseudo nitzschia multiseries.*
Marine and Environmental Biology Research Assistant – USC Levine Lab, Los Angeles, CA (8/18–12/19)
Assessed how temperature and salinity impact growth rate and toxicity of 2 phytoplankton species.
Public Outreach and Education Recreation and Conservation Intern – Washington Department of Natural Resources (DNR), North Bend, WA (5/19–8/19)
Collaborated with local organizations and the public to address recreation and conservation challenges.
Peterson Bay Field Station Naturalist Center for Alaskan Coastal Studies, Homer, AK (5/18–8/18)
Educated school groups and tourists on the natural history and ecological function of Peterson Bay.
Science Education Teaching Aide – USC Young Scientists Program, Los Angeles, CA (8/17–12/18)
Designed and delivered 150+ STEM lesson plans to local elementary classrooms of 15-25 students.

SKILLS & AFFILIATIONS

Computer: R/Rstudio, Git/Github, Shiny, Quarto, SQL, Python, GaBi, Microsoft Office suite, G suite, Slack
Project Management: Supervision, Organization, Leadership, Teamwork, Problem-solving, Critical Thinking
Teaching: Curriculum Development, Lesson Plans, Classroom Education, Outdoor Education
Presentations: Ocean Sciences Meeting 2022**,** Bay-Delta Science Conference 2021**,** SFEI Nutrient Management Strategy (NMS) Steering Committee and Planning Subcommittee meetings, Master's course presentations
Writing: Co-authored 2 manuscripts published in peer-reviewed journals *Estuaries and Coasts* and *New Phytologist*, co-authored 7 technical reports, wrote technical documentation for code and laboratory methods
Affiliations: Academic Data Science Alliance, Association of Environmental Professionals, Association for the Sciences of Limnology and Oceanography