Juliet Cohen

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SUMMARY OF QUALIFICATIONS

- Automate Python workflows to visualize pan-Arctic datasets on the Permafrost Discovery Gateway
- Executed statistical analysis and spatial data analysis in R for the Ocean Health Index at the National Center for Ecological Analysis and Synthesis
- Supported open data science practices, data archival procedures, and database curation at the Arctic Data Center, the primary repository for the NSF's Office of Polar Programs
- Served as Data Manager for master's capstone project applying machine learning methods to process satellite imagery in Python and develop a predictive model over space and time

EDUCATION

Master of Environmental Data Science, 4.0 GPA (June 2022)
Bren School of Environmental Science & Management - University of California, Santa Barbara
Highlighted Coursework: Modeling Environmental Systems; Remote Sensing and Environmental Data; Analytical Workflows and Scientific Reproducibility; Spatial Analysis for Environmental Data Science

Bachelor of Science in Ecology and Evolution, 3.7 GPA (June 2019)
University of California, Santa Barbara
Honors: Distinction in the Major
Study Abroad: Monteverde Institute, Costa Rica - Tropical Biology and Conservation Program
Athletics: Rowing Team

MASTER'S CAPSTONE PROJECT

An open-source pipeline for remote sensing of crop yields: a Zambia case study (1/22 – 6/22)
Role: Data Manager | Clients: Tamma Carleton, Jonathan Proctor

- Developed an open-source tool in Python to process satellite imagery for modeling environmental trends through both unsupervised and supervised machine learning (see project organization on GitHub)
- Contributed to a task-agnostic tool for researchers to monitor the impact of climate change and socioeconomic factors over time and space through the MOSAIKS API
- Presented master's project and its environmental justice implications for the *Justice, Equity, Diversity, and Sustainability Initiative* through a poster, presentation, and expert panel review at the New Horizons in Conservation Conference (3/22) at the Yale School of the Environment (see Programming Blog on website)
- Executed statistical analysis, documented metadata, and collaborated with clients to publish results

DATA SCIENCE & CONSERVATION WORK EXPERIENCE

Arctic Data Center, National Center for Ecological Analysis and Synthesis (NCEAS) – Assistant Data Scientist (09/22– present)

- Process pan-arctic datasets derived from machine learning models and satellite imagery in Python
- Automate workflows to visualize terabytes of data on the Permafrost Discovery Gateway
- Archive datasets and metadata on the Arctic Data Center to increase accessibility, enabling researchers and educators to utilize them for a variety of studies related to the health of the Arctic environment and communities
- Work on remote servers, managing compute resources with grant funding

Ocean Health Index, NCEAS – Data Scientist Fellow (5/22 –9/22)

- Processed and synthesized global datasets related to marine biology, climate change, and human well-being
- Statistically calculated future trajectories of biodiversity, industrial fishing in exclusive economic zones, carbon storage, fishery stock trends, coastal erosion, tourism-based economies, etc.
- Communicated results to teammates and the public through interactive visualizations, maps, open-source code and documentation, and programming blog posts

-Continued-

DATA SCIENCE & CONSERVATION WORK EXPERIENCE - Continued

Arctic Data Center, NCEAS– Data Intern (1/22 – 4/22)
- Database curation in R, using API's to organize data and metadata for research related to arctic ecosystems
- Associated related data with sematic annotations, categorization, and provenance
- Corresponded with researchers to publish open-source datasets with associated metadata
- Communicated daily with team members to peer review curated datasets, improve reproducible workflows, and integrate Ethical Research Practice documentation into arctic metadata

Pacific States Marine Fisheries Commission & CDFW - Fisheries Technician (12/20 – 6/21)
- Monitored endangered Southern California steelhead trout (*Oncorhynchus mykiss*) populations
- Utilized DIDSON underwater sonar cameras to monitor fish populations, trained other employees in software
- Conducted trout spawning surveys, electrofishing, PIT tagging, and database maintenance

Oahu Invasive Species Committee - Data Specialist & Field Technician (9/19 – 8/20)
- Served as data specialist and crew leader in field surveys for incipient invasive flora and fauna on Oahu
- Mapped in ArcGIS, executed species distribution modeling and database quality control
- Hiked in mountainous terrain through rugged forests and sampled endemic tree species for fungal pathogens
- Communicated with the public and reported to partner organizations in Hawaii on a weekly basis

ADDITIONAL WORK EXPERIENCE

San Diego Natural History Museum - Field Technician (5/19 – 7/19)
Led field surveys of the flat-tailed horned lizard, handled reptiles, used Collector for ArcGIS
UC Santa Barbara McCauley Lab - Research Assistant (9/17 – 5/19)
Conducted mesocarnivore spatial ecology research studying anthropogenic impacts on behavior
Cheadle Center for Biodiversity and Ecological Restoration – Field Technician (1/18 – 5/19)
Wetland field restoration, herbarium maintenance, and botanical specimen preparation
Channel Islands Restoration - Field Assistant (8/17)
Surveyed for endangered plant species in wetland habitat of Carpinteria salt marshes
Partnership for the Interdisciplinary Study of Coastal Oceans - Laboratory Intern (6/17 – 9/17)
Identified invertebrate species with microscope to reveal long term trends in intertidal marine life

ECOLOGICAL RESEARCH (see Research on website)

Anthropogenic niche partitioning: mesocarnivore spatial and temporal coexistence along an urban gradient through camera traps (6/18 – 6/19)
- Conducted independent senior thesis project throughout Santa Barbara County
- Poster presentation at the *UC Santa Barbara Undergraduate Research Colloquium*

Filtration Efficiency in Bivalves: effects of species and size in oysters and mussels (9/18 – 12/18)
- Scientific paper presented at *Monteverde Institute Research Symposium 2018* in Monteverde, Costa Rica

AWARDS & SCHOLARSHIPS

Undergraduate Research and Creative Activities Grant (2018)
$750 awarded by UC Santa Barbara to fund senior thesis research (see Ecological Research & Papers)
Dean Bazzi Memorial Scholarship (2018)
$500 Awarded to an outstanding student in aquatic biology, environmental biology, or Zoology
UC Santa Barbara EAP Gaucho Scholarship (2018)
$2000 scholarship allocated towards studying abroad at the Monteverde Institute, Costa Rica

SKILLS & CERTIFICATIONS

Programming Languages: R, Python, SQL, bash
Software Proficiency: ArcGIS, DIDSON sonar metrics, Microsoft Access, Microsoft Suite
Field Skills: Trap and handle wildlife, monitor mammals using VHF radio-telemetry techniques and remote cameras and traps, drive 4-wheel drive vehicles, lead field surveys, landscape restoration and horticulture
Certifications: Wilderness First Aid, Interagency Aviation Training, IACUC, First Aid, CPR