Juliet Cohen

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SUMMARY OF QUALIFICATIONS

- Develops and deploys reproducible workflows in Python to process large, remotely sensed datasets on UC Santa Barbara's high performance computing cluster
- Executed statistical and geospatial analysis in R for the Ocean Health Index
- Applied machine learning methods to process satellite imagery in Python and develop a predictive model
- Collaboratively manages multi-terabyte databases and metadata at the Arctic Data Center

EDUCATION

Master of Environmental Data Science 4.0 GPA (June 2022)
Bren School of Environmental Science & Management - University of California, Santa Barbara
Highlighted Coursework: Remote Sensing and Environmental Data; 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: Dr. Tamma Carleton, Dr. Jonathan Proctor

- Developed an open-source tool in Python to process satellite imagery for modeling environmental trends through both unsupervised and supervised machine learning (GitHub organization)
- Contributed to a task-agnostic tool for researchers to monitor the impact of climate change and socioeconomic factors over time and space
- Presented master's project and its environmental justice implications for the *Justice, Equity, Diversity, and Sustainability Initiative* at the New Horizons in Conservation Conference at the Yale School of the Environment (programming blog)
- Executed statistical analysis, documented metadata, and contributed to writing a scientific paper

ENVIRONMENTAL DATA SCIENCE WORK EXPERIENCE

Arctic Data Center, National Center for Ecological Analysis and Synthesis (NCEAS)
Data Scientist & Software Developer (10/22 – present)

- Processes large datasets derived from satellite imagery and machine learning models in Python
- Develops and deploys containerized workflows on UCSB's high performance computing cluster with parallelization
- Visualizes datasets on the Permafrost Discovery Gateway, an interactive data portal (GitHub organization)
- Collaboratively manages multi-terabyte databases and metadata to increase accessibility and reproducibility
- Engages in community outreach through presentations, conferences, and workshops
- Participates in the Diversity, Equity, Inclusion, and Justice Seminar Series Planning Committee

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

- Synthesized global datasets related to wildlife, anthropogenic impacts, and human well-being
- Statistically calculated trajectories of biodiversity, industrial fishing in exclusive economic zones, etc.
- Communicated scientific results through interactive visualizations, maps, open-source code, documentation, and technical blog posts

-Continued-

ENVIRONMENTAL DATA SCIENCE WORK EXPERIENCE - Continued

Arctic Data Center, NCEAS
Data Intern (1/22 – 4/22)

- Database curation in R, managed Arctic datasets and metadata with reproducible workflows
- Associated related data with semantic annotations, categorization, and provenance
- Communicated with researchers on a weekly basis

CONSERVATION WORK EXPERIENCE

Pacific States Marine Fisheries Commission | Fisheries Technician (12/20 – 6/21)

- Monitored endangered Southern California steelhead trout populations in human-occupied regions

Oahu Invasive Species Committee | Data Specialist & Field Technician (9/19 – 8/20)

- Served as GIS specialist and crew leader in field surveys for incipient invasive flora and fauna on Oahu

San Diego Natural History Museum | Field Technician (5/19 – 7/19)

- Led field surveys of the flat-tailed horned lizard and handled reptiles

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

PUBLISHED DATASETS & ECOLOGICAL RESEARCH (Research)

Annett Bartsch, Georg Pointner, Ingmar Nitze, Juliet Cohen, Barbara Widhalm, Clemens von Baeckmann, & Rodrigue Tanguy. (2024). *Arctic Infrastructure: Sentinel-1 and Sentinel-2 derived Arctic Coastal Human Impact dataset, Pan-Arctic Region, 2016 - 2020*. Arctic Data Center. doi:10.18739/A21J97929.

Chandi Witharana, Mahendra R Udawalpola, Amal S Perera, Amit Hasan, Elias Manos, Anna Liljedahl, Mikhail Kanevskiy, M Torre Jorgenson, Ronald Daanen, Benjamin Jones, Howard Epstein, Matthew B Jones, Robyn Thiessen-bock, Juliet Cohen, & Kastan Day. (2023). *Ice-wedge polygon detection in satellite imagery from pan-Arctic regions, Permafrost Discovery Gateway, 2001-2021*. Arctic Data Center. doi:10.18739/A2KW57K57.

Ingmar Nitze, & Juliet Cohen. (2024). *Pan-Arctic lake area time series (2017-2021)*. Arctic Data Center. (in progress)

S. Jeanette Clark, Matthew B. Jones, Samantha Csik, Carmen Galaz García, Bryce Mecum, Natasha Haycock-Chavez, Daphne Virlar-Knight, Juliet Cohen, Anna Liljedahl. 2023. *Scalable and Computationally Reproducible Approaches to Arctic Research*. Arctic Data Center. doi:10.18739/A2QF8JM2V

Cullen Molitor, Juliet Cohen, Grace Lewin, Steven Cognac, Jonathan Proctor, Kathy Baylis, Protensia Hadunka, & Tamma Carleton. Monitoring Maize Yield Variability over Space and Time with Unsupervised Satellite Imagery Features (in progress)

Anthropogenic niche partitioning: mesocarnivore spatial and temporal coexistence along an urban gradient through camera traps

Filtration Efficiency in Bivalves: effects of species and size in oysters and mussels

AWARDS & SCHOLARSHIPS

Undergraduate Research and Creative Activities Grant | $750 | UC Santa Barbara (2018)

Dean Bazzi Memorial Scholarship | $500 | UC Santa Barbara (2018)

UC Santa Barbara EAP Gaucho Scholarship | $2,000 | UC Santa Barbara (2018)

SKILLS

Programming Languages: R, Python, SQL, bash, Slurm Workload Manager
Software Proficiency: ArcGIS, Microsoft Access, Microsoft Suite, DIDSON sonar metrics