Curriculum Vitae
Joel Nicolow

jnicolow@hawaii.edu
github.com/jnicolow
joelnicolow
https://jnicolow.github.io/

Education

2026 – · · · · **Ph.D. Computer Science, University of Hawai'i at Mānoa**

2024 – 2025 **M.S. Computer Science, University of Hawai'i at Mānoa**
Thesis title: *Comparative Evaluation of Five Shoreline Segmentation Methods Across Six Long-Term Beach Survey Sites.*

2019 – 2024 **B.S. Computer Science, University of Hawai'i at Mānoa**
Honors Program & Cum Laude

Employment History

2024 – · · · · **Graduate Research Assistant,** Coastal Research Collaborative, University of Hawai'i at Mānoa.
Semantic segmentation of satellite imagery (Landsat, Sentinel-2, PlanetScope) for satellite-derives shoreline frameworks [J1], [C2], [C4]; co-authored two NSF grant proposals.

2024 – 2025 **Machine Learning Engineer,** Water Resources Research Center, University of Hawai'i at Mānoa.
Classification of fog in mountain trail camera imagery using pretrained ResNet backbones [C1], [C3].

2022 – 2024 **Introductory Remote Sensing Specialist,** Coastal Research Collaborative, University of Hawai'i at Mānoa.
Geospatial analysis and ML-based pixel classification in Python; QGIS mapping; grant writing; presented at the 2023 Pacific Rim Geospatial Conference and Planet Labs' Planetary Variables event, San Francisco.

2023 – 2024 **Undergraduate Researcher,** Hawai'i Established Program to Stimulate Competitive Research Change(HI)
Classification of environmental conditions in images using machine learning; data visualization of temperature and relative humidity data.

Summer 2022 **CyberInfrastructure TRaining for Undergraduates in Summer (CITRUS),** Hawai'i Data Science Institute, University of Hawai'i at Mānoa
Awarded position in climate-focused one-month program developing key skills and abilities in CyberInfrastructure

2022 – 2022 **Data Analyst,** Hawai'i Thompson School of Social Work & Public Health, University of Hawai'i at Mānoa
Created R data frameworks to aggregate and de-identify observation-level health data

2019 – 2022 **Research Assistant,** Pacific Health Analytics Collaborative, University of Hawai'i at Mānoa
Webscraping public health data using R; Generated aggregate data tables from observation level data using LaTeX and R; Co-authored the Hawai'i Opioid Initiative Evaluation report (2020) and Hawai'i State Plan for a Data-Driven System of Care on Substance Use (2022)

Summer 2019 **Kupu Team Member,** Kupu, AmeriCorps Hawai'i Youth Conservation Corps
Performed conservation-related tasks in Natural Area Reserves; conducted literary research on ma'a hau hele and its importance to biodiversity in Hawai'i

Employment History (continued)

2018 – 2019 **Behavioral Health Student Fellow,** State of Hawai'i, Behavioral Health Administration
Completed fellowship at the Behavioral Health Administration, Alcohol and Drug Abuse Division, compiling a complete list of substance use treatment providers in Hawai'i

Research Publications

Journal Articles

J1 R. U. Moskvichev, A. B. Mikkelsen, T. R. Anderson, S. F. Vitousek, **J. C. Nicolow**, and C. H. Fletcher, "Wave driven cross shore and alongshore transport reveal more extreme projections of shoreline change in island environments," *Scientific Reports*, vol. 15, no. 1, p. 10 794, Mar. 2025, ISSN: 2045-2322. DOI: 10.1038/s41598-025-95074-y.

Conference Posters

C1 J. DeLay, **J. Nicolow**, P. Sadowski, G. Giambelluca, and H. Tseng, "Determining Fog Frequency with Elevation on Mt. Ka'ala," in *American Association of Geographers Annual Meeting*, American Association of Geographers, Honolulu, Hawaii, Apr. 2024.

C2 A. Mikkelsen, **J. Nicolow**, S. Vitousek, K. Murray, R. Moskvichev, and C. Fletcher, "A Systematic Error Analysis of Satellite-Derived Shorelines," in *American Association of Geographers Annual Meeting*, Virtual, Dec. 2024.

C3 **J. Nicolow**, P. Sadowski, J. DeLay, J. Juvik, H. Tseng, and G. Giambelluca, "A Machine Learning Method for Detecting Fog in Mountain Trail Camera Images," in *Hawaii Conservation Conference*, Hawaii Conservation Alliance, Honolulu, Hawaii, Jul. 2024. URL: https://jnicolow.github.io/publications/hcc2024.html.

C4 A. Mikkelsen, **J. Nicolow**, K. Murray, R. Moskvichev, and C. Fletcher, "Advancing Satellite-Derived Shoreline Identification Frameworks for Complex Reef-Fronted Beaches in Hawai'i," in *American Association of Geographers Annual Meeting*, Virtual, Dec. 2023.

C5 **J. Nicolow**, P. Sadowski, J. DeLay, J. Juvik, H. Tseng, and T. Giambelluca, "FogVision: A Machine Learning Method for Detecting Fog in Mountain Trail Camera Images," in *American Association of Geographers Annual Meeting*, San Fransisco Mascone Center, Dec. 2023. URL: https://jnicolow.github.io/publications/agu2023.html.

C6 J. DeLay, **J. Nicolow**, P. Sadowski, T. Giambelluca, and H. Tseng, "Measuring Fog Frequency With Elevation On Mt. Kaala Using Trail Cameras: Initial Findings," in *American Association of Geographers Annual Meeting*, Virtual, Dec. 2022. URL: https://agu2022fallmeeting-agu.ipostersessions.com/Default.aspx?s=E6-2A-D7-F0-F6-E6-F4-00-C6-A0-30-24-43-CE-7B-82.

C7 J. DeLay et al., "Using Meteorological Monitoring and Image Recognition to Inform Species Relocation," in *American Association of Geographers Annual Meeting*, Virtual, 2022.

C8 J. DeLay, H. Tseng, T. Giambelluca, M. Nullet, **J. Nicolow**, and K. Rodrigues, "Slope Environmental Lapse Rates and Fog on O'ahu's Highest Mountain," in *American Association of Geographers Annual Meeting*, Virtual, Dec. 2020. URL: https://agu2020fallmeeting-agu.ipostersessions.com/Default.aspx?s=76-A1-DE-D7-1F-32-28-4A-73-E8-86-7C-F9-C4-92-52.

Skills

Languages Python, R, LaTeX

Skills (continued)

ML & DL	PyTorch, TensorFlow, scikit-learn, OpenCV.
Geospatial	GDAL, Rasterio, GeoPandas, Google Earth Engine, QGIS.
Misc.	Academic research, technical writing, grant applications.

Honors and Awards

Awards

2024 **Outstanding Undergraduate Student Poster Presentation**, Hawai'i Conservation Conference.

2021 **Research Award**, Associated Students of the University of Hawai'i at Mānoa.

2020 **Project Funding**, Undergraduate Research Opportunities Program.

References

Available on Request