Mike Mahoney

1107 Cambridge Street, Cambridge MA, 02139

781-812-8842 | mike.mahoney.218@gmail.com | mm218.dev | mikemahoney218 | mikemahoney218

Work Experience

Research Assistant

Syracuse, NY (Remote)

Climate and Applied Forest Research Institute

August 2020 - Present

- Created R and Python-based spatial machine learning models of forest aboveground biomass as part of New York State's Climate Leadership and Community Protection Act, used to monitor annual carbon sequestration in forests statewide.
- Built cloud-based (AWS) data-delivery API to enable spatial data access for private and governmental partners, and to standardize data sharing practices across the Institute.
- Developed and taught "Machine Learning Concepts and Applications", a graduate course on applied machine learning for scientists.

Community Fellow (Information Technology & Interoperability)

Severna Park, MD (Remote)

Federation of Earth Science Information Partners (ESIP) - Part Time

December 2021 - Present

- Organized and assisted with monthly meetings of the ESIP Machine Learning cluster and Information Technology & Interoperability committee, organizations of Earth scientists from NASA, NOAA, USGS, private sector businesses, and academic institutions.
- Coordinated inter-agency focus groups for discussions of public data discoverability, accessibility, and usability, including both potential applications and best practices, with a focus on information technology and machine learning dimensions.
- Assisted in organizing three conferences (approximately 300 attendees each), as well as sessions on "Advancing FAIRness and Fairness in AI/ML in the Geo-sciences"., "FAIR for AI in Geoscience: From AI-Ready Data to Practical AI Models", and "AI for All People: How to Make AI Useful for Earth Science Applications?".

Open Source Engineer

Boston, MA (Remote)

Posit, PBC (Previously RStudio, PBC) - Internship

May 2022 - August 2022

- Developed open-source packages for the R programming language, focusing on ergonomic tools for machine learning and statistical modeling.
- Designed and implemented the "spatialsample" package, providing utilities for spatial cross-validation; "waywiser", providing tools to assess spatial autocorrelation in model residuals, and implemented grouped resampling methods in the "rsample" package, the most requested feature in a package with more than 2 million total downloads.
- Wrote public-facing documentation to explain complex statistical and technical concepts to users from a wide variety of backgrounds, including articles on spatial buffers for spatial cross-validation, a general overview of cross-validation approaches for modeling purposes, and tutorials on how to use open-source tooling to assess models across multiple spatial scales.

Analyst (Workforce Management - Forecasting & Analytics)

Boston, Massachusetts

Wayfair Inc. - Full Time

June 2019 - August 2020

- Developed and launched department's first automated streaming data pipelines, connecting BuildKite, Docker, R, Python and T-SQL in order to create always-up real-time dashboards of contact center production for customer service leadership team.
- Implemented process improvements including automating long-standing reporting, and introducing Git and related workflows to department, allowing monthly reports to be converted into daily updates and increasing the accuracy of analytics.
- Demonstrated leadership as interdepartmental liaison between partner teams on matters of metric definitions, reporting methodologies, data availability, and data access.
- Served as department subject-matter expert on technical matters (including R, SQL, Git, and Docker) on projects including automating data pipelines, performing one-off analysises and developing CI/CD workflows.

Volunteer Positions

Curriculum Advisory Committee Member; Lesson Maintainer; Instructor

Remote

The Carpentries - Volunteer

2021-Present

- Committee member helping to advise the development of the complete geospatial curriculum of The Carpentries, a nonprofit dedicated to teaching researchers fundamental data and programming skills for efficient, open, and reproducible research.
- Lesson maintainer for "Introduction to R for Geospatial Data", responsible for developing, improving, and responding to community feedback on an introductory R workshop for users focused on the skills necessary for working with geospatial data formats.
- Instructor responsible for organizing and leading free programming workshops for early career researchers.

Education

State University of New York College of Environmental Science and Forestry (SUNY-ESF)

Syracuse, New York

Doctor of Philosophy in Environmental Science (Area of Study: Coupled Natural and Human Systems)

May 2024 (Expected)