Mike Mahoney

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Work Experience

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, with a focus on enabling good practices in 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.
- Implemented key computations in C++, speeding up package functionality by up to 50%.

Community Fellow (Machine Learning)
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, an organization of Earth scientists from NASA, NOAA, USGS, and academic institutions.
- Assisted inter-agency focus group in setting priorities for the use of machine learning in Earth science across federal agencies, including both potential applications and best practices.
- Assisted in organizing both the 2022 ESIP January Meeting and a conference session "Advancing FAIRness and Fairness in AI/ML in the Geosciences".

Research Assistant
Syracuse, NY

CLIMATE AND APPLIED FOREST RESEARCH INSTITUTE - ACADEMIC YEAR
August 2020 - Present

- Created R and Python-based spatial models of forest aboveground biomass as part of New York State's Climate Leadership and Community Protection Act. These models will, pending a current public comment period, be the method New York uses to track carbon sequestration in forests.
- Built cloud-based (AWS) data-delivery infrastructure to enable delivery of spatial data products to private and governmental partners, and to standardize data sharing practices across the Institute.
- Developed and taught "Machine Learning Concepts and Applications", a one-semester graduate course on applied machine learning for scientists.

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 (transforming monthly reporting into daily updates and increasing the accuracy of analytics) and introducing Git and related workflows to department.
- 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 ranging from automating analytics to 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 programming skills.
- 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)
August 2020 - Present

- Dissertation: Being There? The Use of Immersive Virtual Environments to Replicate Real-World Experiences in Nature
- Awards: New York State GIS Association Application Award (2021)