LOUIS RIVOIRE, Ph.D.

Applied Mathematician and Statistician | Environmental Data Strategy

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SUMMARY

- MIT and Harvard quantitative scientist, turning environmental data into actionable insights.
- Delivers in fast-paced and high-stakes settings, including Caltech/NASA consultant on $330M mission.
- 30+ scientific contributions advancing geophysics and climate research.

PROFESSIONAL EXPERIENCE (past 10 years)

Postdoctoral Associate
Massachusetts Institute of Technology, *Cambridge, MA* since Jan 2024

– Developed a data-driven method to understand how pollutants disperse through the atmosphere, using graph theory and advanced clustering techniques.
– Identified human influence on global air quality trends using large-scale predictive models and multivariate statistics.
– Completed extensive leadership and mentorship training programs focused on strategic communication, team coordination, and project execution.

Postdoctoral Research Fellow
Harvard University, *Cambridge, MA* Jul 2020 - Dec 2023

– Designed a universally applicable framework to track atmospheric patterns that drive extreme heat and precipitation globally.
– Built statistical tools to assess confidence in long-term trends under uncertainty, supporting risk evaluation and decision-making.
– Managed 4 concurrent projects on a self-managed timeline with global collaborators from senior faculty to mentored undergraduates.

Flight Mission Consultant
Jet Propulsion Laboratory, Caltech, *Pasadena, CA* Dec 2021 - Nov 2023

– Delivered key statistical analysis to inform the planning and budgeting strategy for a NASA satellite mission, supporting a $330M project against competing proposals.
– Collaborated in a fast-paced, cross-functional team of ∼20 experts, meeting weekly deliverables and adapting to rapidly changing requirements.

Graduate Research and Teaching Assistant
Colorado State University, *Fort Collins, CO* Aug 2015 - May 2020

– Developed an extensive data visualization, data management, and coding skill set.
– Leveraged large datasets to shed light on the role of hurricanes in the climate.
– Served as teaching assistant for advanced atmospheric dynamics courses.

EDUCATION

Ph.D., Atmospheric Science 2020
Colorado State University, Fort Collins, CO
Funded by Scholarly Excellence award recognizing high-impact research

M.S., Geophysical Fluid Dynamics and Climate Science 2015
Sorbonne University, Paris, France

Diplôme de l'Ecole Normale Supérieure 2015
Ecole Normale Supérieure, Paris, France
Highly selective French program combining advanced coursework with scientific research

B.S., Earth Sciences 2013
Ecole Normale Supérieure, Paris, France

TECHNICAL SKILLS

Software/Computational:

- 12+ years of Matlab experience (multivariate statistical analysis, image and signal processing, parallel computing), working knowledge of Linux, Bash/shell (HPC schedulers), Fortran, HTML, Markdown, Python basics.
- Routine use of large multi-dimensional datasets (GRIB, NetCDF, HDF, ASCII, TIFF)
- Graphic design software (Adobe Photoshop, Blender), LaTeX, scientific literature databases, MS Office, Apple iWork.

Languages: English (fluent), French (native), Dutch (CEFR level A2).