David (Dave) Farnham, PhD

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Hands-on AI and technology executive with 15+ years across academic research and startup leadership, applying machine learning, generative AI, forecasting, and optimization to energy and power systems, climate risk, and other physical systems. Currently VP of AI & Engineering at ClimateAi (Series B), leading a 12-person data science, engineering, product, and Earth-science organization while staying technically hands-on.

Applied AI/ML | Generative AI & LLMs | Responsible AI & Model Governance | Probabilistic Forecasting & Optimization | Energy & Climate Risk Analytics | Technical Product Strategy | Enterprise Solutions & Technical Sales | Multidisciplinary Leadership | Full Lifecycle Startup Leadership

Industry Experience

2021–Present **ClimateAi**, San Francisco, CA (remote)
VP of AI & Engineering (2025–Present)
Director of Data Science (2024–2025)
Lead Innovation Scientist (2023–2024)
Senior Innovation Scientist (2021–2023)

- Promoted four times in five years to VP of AI & Engineering, leading a 12-person multidisciplinary organization across data science, AI/ML, software and geospatial engineering, product, and Earth sciences; hired all but one team member, managed seven direct reports, and achieved 100% voluntary retention among my hires.
- Owned technical strategy and R&D for AI/ML-driven forecasting and climate-risk products built on petabyte-scale geospatial and environmental datasets, translating probabilistic science into decision-support solutions for global enterprises while remaining hands-on in architecture, modeling, and code.
- Led technical sales and solutioning from discovery through close and delivery; played a primary role in securing mid- and high-six-figure government contracts (subsequently leading the high-six-figure project), helped close multiple enterprise deals, and independently closed a mid-five-figure engagement.
- Converted bespoke customer solutions into scalable products and repeatable delivery workflows, using reusable technical frameworks and AI-assisted development to reduce delivery times from weeks to as little as hours while supporting dozens of customers.
- Represented the company in discussions on technology, product, and strategy with enterprise customers, government stakeholders, investors, academic partners, and prospective acquirers.
- Oversaw the development of an ROI framework and customer-facing tool linking ClimateAi's forecasting and risk insights to measurable financial and operational value.
- Built the organization's career-leveling and structured-hiring frameworks, enabling 20+ internal promotions and consistent, accountable, and effective hiring across teams.

Research Experience

Research Positions

- **2018–2021 | Postdoctoral Research Scientist, Carnegie Science and Stanford University.** Worked with Dr. Ken Caldeira and others on renewable energy reliability, wind and solar variability, power system adequacy, and weather-driven electricity demand.
- **2012–2018 | Graduate Researcher, Columbia University.** Worked with Dr. Upmanu Lall and collaborators on spatiotemporal climate and weather modeling, with applications to energy systems, water resources, infrastructure, and climate risk.

Research Experience (continued)

Selected Research

- "The Substantial Role of Weather Data in Consumer Spending Prediction: A Robust Machine Learning Assessment," *Journal of Retailing and Consumer Services*, 2026.
- "Assessing Power System Disruptions and Associated Economic Impacts from Increasing Extreme Heat Events in Southeast Europe Using an Idealized Design Methodology," World Bank, 2024.
- "Differential Effects of Climate Change on Average and Peak Demand for Heating and Cooling Across the Contiguous USA," *Communications Earth & Environment*, 2023.
- "Geophysical Constraints on the Reliability of Solar and Wind Power Worldwide," *Nature Communications*, 2021.
- "Robust Adaptation to Multiscale Climate Variability," *Earth's Future*, 2019.
- Authored or co-authored 50+ publications and conference contributions, cited 1,300+ times; see **Google Scholar** for the complete record.

Education

2018 **Ph.D., Water Resources and Climate Risk Engineering, Columbia University** Dissertation: *Identifying and modeling spatio-temporal patterns in high-dimensional climate and weather datasets with applications to water and energy resource management*

2015 **M.S., Water Resources and Climate Risk Engineering, Columbia University**

2012 **B.S., Civil Engineering, SUNY-Buffalo** Summa Cum Laude; Honors College

B.A., Mathematics, SUNY-Buffalo Summa Cum Laude; Honors College

Selected Media Appearances & Coverage

Interviewed, quoted, or featured by *Bloomberg Intelligence, The Independent, WIRED, E&E News, AgTech-Navigator*, and *Scripps News*.