

Matt Motoki

Data Scientist | Machine Learning & Energy Systems

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[LinkedIn](#) | [GitHub](#) | [Kaggle](#) | [Google Scholar](#)

PROFESSIONAL EXPERIENCE

Shifted Energy — Chief Data Scientist | *Honolulu, Hawaii / Remote* Aug 2021 – 2025

Led machine learning, forecasting, and control development for virtual power plant and flexible-electrification programs. Built device-level modeling and optimization algorithms deployed across thousands of connected electrical devices worldwide. Translated research and competition-grade methods into production systems for load forecasting, demand response, and measurement and verification.

H2O.ai — Senior Data Scientist | *Mountain View, California / Remote* May 2020 – Jul 2021

Developed algorithms and product features for enterprise AutoML software and partnered with customer-facing data scientists on Fortune 500 use cases.

Iterable — Senior Data Scientist | *San Francisco, California* Jun 2019 – Mar 2020

Developed machine-learning methods for terabyte-scale engagement prediction and accelerated feature-engineering workflows using iterative updates.

Independent — Data Science Consultant | *Honolulu, Hawaii* Jul 2017 – Jun 2019

Built predictive models, analyses, and dashboards for a remote-sensing startup, academic researchers, and local startups.

HiVet Solutions — Data Scientist | *Honolulu, Hawaii* Mar 2016 – May 2017

Developed data-driven methods for workforce planning, hiring, and compensation analysis with HR and Finance teams.

EDUCATION

PhD Student, Electrical & Computer Engineering — University of Washington 2022 – Present

GPA 3.98. Adviser: Baosen Zhang. Research: machine learning, game theory, distributed energy resources, and power systems.

M.S., Electrical Engineering — University of Hawai'i at Mānoa Dec 2015

GPA 4.00. Research included reinforcement-learning control of residential water heaters.

B.S., Mathematics — University of Hawai'i at Mānoa Aug 2014

GPA 3.76. Research included numerical simulations of mantle dynamics and intraplate volcanism.

FELLOWSHIPS & DISTINCTIONS

Grainger Foundation Power Engineering Endowed Fellowship | University of Washington Clean Energy Institute Graduate Fellow, 2023–2024

SELECTED PUBLICATIONS

- J. Li, J. Wei, **M. Motoki**, Y. Jiang, and B. Zhang. "Adaptive Pricing for Optimal Coordination in Networked Energy Systems with Nonsmooth Cost Functions." *IEEE Conference on Decision and Control*, 2025, pp. 4043–4050.
- J. Li, **M. Motoki**, and B. Zhang. "Strategic and Fair Aggregator Interactions in Energy Markets: Multi-Agent Dynamics and Quasiconcave Games." *IEEE Transactions on Energy Markets, Policy and Regulation*, 2025, pp. 340–351.
- J. Li, **M. Motoki**, and B. Zhang. "Socially Optimal Energy Usage via Adaptive Pricing." *Electric Power Systems Research*, vol. 235, 2024, article 110640.
- J. Li, **M. Motoki**, and B. Zhang. "Balancing Fairness and Efficiency in Energy Resource Allocations." *IEEE Conference on Decision and Control*, 2024.
- K. Nweye et al. (including **M. Motoki**). "The CityLearn Challenge 2022: Overview, Results, and Lessons Learned." *Proceedings of Machine Learning Research*, vol. 220, 2023, pp. 85–103.
- M. Motoki**, M. Umeda, M. Fripp, and A. Kuh. "Approximate Dynamic Programming for Control of a Residential Water Heater." *International Joint Conference on Neural Networks*, 2015, pp. 1–8.
- M. H. Motoki** and M. D. Ballmer. "Intraplate Volcanism Due to Convective Instability of Stagnant Slabs in the Mantle Transition Zone." *Geochemistry, Geophysics, Geosystems*, vol. 16, no. 2, 2015, pp. 538–551.

COMPETITION AWARDS

Year	Competition	Result
2026	Heat Signature Zero Challenge	Honorable Mention \$500
2025	NASA Airport Throughput Prediction Challenge	1st Place \$30,000
2025	MISO New Approaches to Baseline DER Performance	Top Prize \$7,000
2024	Power Patterns Challenge*	1st Place \$3,000
2024	Predict Energy Behavior of Prosumers Challenge	6th Place \$5,000
2023	NeurIPS CityLearn Challenge — Forecasting Track	1st Place \$1,000
2023	Net Load Forecasting Prize	2nd Place \$150,000
2023	Digitizing Utilities Prize*	Phase 1 Winner \$75,000
2022	NeurIPS CityLearn Challenge*	2nd Place \$5,000
2022	American-Made Solar Forecasting Prize	Runner-up \$25,000
2021	NIJ Recidivism Forecasting Challenge*	Prize Winner \$48,500
2019	ASHRAE Great Energy Predictor III*	1st Place \$10,000
2017	Purple Prize*	1st Place \$10,000

* Team entry. Prize amounts are total event awards as publicly listed.

LEADERSHIP & PROJECTS

- **Kaggle Competitions Grandmaster** — peak global rank of 18.
- **Hawaii Machine Learning Meetup** — co-organized a 250+ member community, including networking events, study groups, and a machine-learning competition.
- **Personal projects** — created and shipped strategy games with AI opponents, including Cell Division and Jelmata, alongside other small web products.