

Alexey Yermakov

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Education

University of Washington – Seattle

PhD, Electrical & Computer Engineering (Sept 2023 – Present).
Advisor: Dr. J. Nathan Kutz.
GPA: 3.98/4.00.

University of Washington – Seattle

MS, Applied Mathematics (Sept 2023 – June 2025).
GPA: 3.98/4.00.

University of Colorado – Boulder

BS, Applied Mathematics (Aug 2019 – May 2023).
BS, Computer Science (Aug 2019 – May 2023).
Summa Cum Laude with Honors.
GPA: 4.00/4.00.

Publications

Riva, Introini, Cammi, Price, **Yermakov**, et al. “CTF4Nuclear: Common Task Framework for Nuclear Fission and Fusion Models.” *arXiv:2605.15549*. (2026)

Nagdi, Nikolados, **Yermakov**, Gao, Kutz, Menolascina. “Learning the Koopman Operator using Attention Free Transformers.” IFAC World Congress (2026).

Yermakov, Zhao, Denolle, et al. “The Seismic Wavefield Common Task Framework.” *ICLR*. (2026)

Wyder, Goldfeder, **Yermakov**, et al. “Common Task Framework for a Critical Evaluation of Scientific Machine Learning Algorithms.” *NeurIPS*. (2025)

Yermakov, Ratliff, Kutz. “Latent Nonlinear Wave Dynamics in Image Datasets and Autoencoder Reconstructions.” *ML and the Physical Sciences Workshop, NeurIPS*. (2025)

Wyder, Goldfeder, **Yermakov**, et al. “Common Task Framework for a Critical Evaluation of Scientific Machine Learning Algorithms.” *Championing Open-source Development in ML Workshop @ ICML25*. (2025)

Yermakov, Zoro, Gao, Kutz. "T-SHRED: Symbolic Regression for Regularization and Model Discovery with Transformer Shallow Recurrent Decoders." *Philosophical Transactions of the Royal Society A* (2026).

Yermakov, Yun, Ratliff, Kutz. "A Transformer-Based Deep Learning Approach to Anomaly Detection of High-Bandwidth Multivariate Time-Series Satellite Communications." *International Conference on Space Operations*. (2025).

Talks

AI-DEEDS. (June 2026)

The Common Task Framework for Scientific Machine Learning.

Posters

D34 Technologist Seminar, JPL. (June 2025)

Transformer-Based Anomaly Detection for DSN Time Series.

SpaceOps25. (May 2025)

A Transformer-Based Deep Learning Approach to Anomaly Detection of High-Bandwidth Multivariate Time-Series Satellite Communications.

SIAM-FRAMSC. (March 2022)

Imaging Three-Dimensional Surface Waves Using a Synthetic Schlieren Method.

ICLR. (April 2026)

The Seismic Wavefield Common Task Framework.

NeurIPS. (December 2025)

Common Task Framework for a Critical Evaluation of Scientific Machine Learning Algorithms.

ML and the Physical Sciences Workshop, NeurIPS. (December 2025)

Latent Nonlinear Wave Dynamics in Image Datasets and Autoencoder Reconstructions

CODEML@ICML25. (July 2025)

Common Task Framework for a Critical Evaluation of Scientific Machine Learning Algorithms.

Discovery Learning Apprenticeship Symposium. (April 2022)

Imaging Three-Dimensional Surface Waves Using a Synthetic Schlieren Method.

Awards and Fellowships

National Science Foundation Graduate Research Fellowship Awardee. (June 2025)

Three years of tuition and a living stipend.

Most Innovative Poster Award, 2025 UW ECE Research Showcase. (May 2025)

Tour of Blue Origin facilities in Washington.

Robert E. Rushmer Endowed Fellowship Fund in ECE. (Spring 2024)

One quarter of RA funding at UW.

ESCA Fellowship. (Winter 2024)

One quarter of RA funding at UW.

GFSEI Top Scholar Recruitment Award. (Fall 2023)

One quarter of RA funding at UW.

JPL Mission System Capture the Flag Award – Third Place. (Summer 2023)

Recognition award for JPL interns.

CEAS Research Award. (Spring 2023)

Recognition award for outstanding commitment to undergraduate researchers at CU Boulder.

Employment

Allen Institute for Artificial Intelligence (Ai2). (Summer 2026)

I worked on the Climate Modeling team at Ai2 as a research intern working on out-of-distribution generalization. I improved long-time climate forecasting performance through a variable masking strategy. I also explored new transformer backbones and obtained the first positive results on an ACE foundation model trained with a mix of real and synthetic data.

NASA/Caltech Jet Propulsion Laboratory. (Summer 2023)

I spearheaded the development of a VxWorks 7 operating system abstraction layer (OSAL) in C for the Mars Sample Return (MSR) mission. I also ported the open-source bsdiff and bspatch software to VxWorks 7 to reduce bandwidth usage during the MSR mission.

Lockheed Martin. (Summer 2022)

I implemented low-level software to communicate between a star tracker (ST) and a command & data handling (C&DH) board using the MIL-STD-1553 protocol. I also worked on implementing functional verification tests (FVTs) to ensure written code followed logical requirements.

Lockheed Martin. (Summer 2021)

I implemented functional requirements for flight software built on top of NASA's Core Flight Executive (cFE) framework in the VxWorks operating system. I also wrote low-level code for satellite-to-ground radio communication for a technology demonstration that required testing code on real hardware.

Workiva. (Summer 2020)

I developed new visual and functional features for an internal search engine. I added pagination capabilities and the TF-IDF statistic for page ranking, prevented Cross-Site Scripting (XSS) attacks, and enhanced the visual appeal of the site.

Service

AI-DEEDS Organizer and Reviewer (2026).

Elementary School Volunteer for UW Science Explorers (2026).

NeurIPS Workshop Reviewer (2025).

ICLR Reviewer (2025).

ICML Workshop Reviewer (2025).

Certifications

LE-1: Linux Essentials. Linux Professional Institute (LPI).

References

J. Nathan Kutz, Professor

Applied Mathematics and Electrical & Computer Engineering

University of Washington

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