

Carl Kolon

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I am an AI research engineer with a background in nonlinear dynamics. I train LLMs and special purpose models, support training with data pipelines, and make the models useful by building applications around them. Before this, I spent 5 years leading engineering and safety teams aboard nuclear submarines.

EDUCATION

US Naval Academy – B.S. Mathematics (Distinction and Honors).

3.89 GPA, [Trident Scholar](#), [Julian Clancy Frazier Mathematics Research Award](#), Chinese Minor.

Thesis: [Stability of Nonlinear Swarms on Flat and Curved Surfaces](#).

PROFESSIONAL EXPERIENCE

Member of Technical Staff: xAI (Dec 2025 – Present)

- Manage a team of 3 building data pipelines for LLM posttraining and evaluation.
- Study hybrid transformer-CNN models for application to signal processing.

Software Engineer: Vannevar Labs (Jun 2023 – Dec 2025)

- Managed a LLM API deployment to government customers as the lead dev/main point of contact.
- Built our geospatial AI tool, with a fast ~10b row database, custom AI models, and a feature-rich frontend.
- Promoted from intern to senior faster than anyone else in Vannevar's history.

Nuclear Submarine QA/Safety Officer: US Navy (May 2018 – Jun 2023)

- Built a culture of compliance with rigorous [SUBSAFE](#) standards.
 - Led 62 nuclear trained sailors and responsible for \$1 billion of equipment.
 - Selected as Submarine [Junior Officer of the Year](#) for 2022.
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ACADEMIC EXPERIENCE

Researcher: US Naval Academy (Trident Scholar) (Mar 2017 - May 2018)

- Proved novel math results about the stability of swarm models, a nonlinear dynamics problem.
- Presented my work at [UMD](#), [SASMC](#), and Trident Scholar Conferences.

Research Intern: Naval Research Laboratory (Jun 2017 – Jul 2017)

- Studied swarm collisions with delay coupling.
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ACADEMIC WORK

- [C. Kolon, C. Medynets, I. Popovici. On the stability of Rotating States in Second-Order Self-Propelled Multi-Particle Systems](#). 2026. Upcoming in *Advances in Differential Equations*.
 - Presented [Seeing Underwater with Neural Networks](#) at Google X Tidal Ocean Seminar, Jun 2023.
 - Presented [Stability of Nonlinear Swarms on Flat and Curved Surfaces](#) at UMD Graduate Mathematics Seminar, Apr 2018, Service Academy Student Mathematics Conference, May 2018, and Trident Scholar Conference, May 2018 ([video](#)).
 - [C. Kolon and I. Schwartz. The Dynamics of Interacting Swarms](#). 2017
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PROJECTS - *These and many others are described fully [on my blog](#).*

- [A RNN-based sonar processing algorithm that outperforms the Navy's current tools.](#)
 - [A semantic search tool for the Navy's longest manual.](#)
 - [A multiplayer submarine combat game that runs in the browser.](#)
 - [An in-port ship scheduler that writes fair watchbills with simulated annealing.](#)
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SKILLS

Professional Experience In: Python, AI training (Pytorch), AI deployment (Ray Serve, JAX), Typescript/Javascript (Node.js, React), containers (Kubernetes, Docker), orchestration (Hatchet, Temporal, Airflow), SQL (PostGIS/Postgres, SQLite), Vector DBs (Qdrant, PGVector).

Academic Experience In: Tensorflow, Wolfram Mathematica, robotics simulation (ROS, Gazebo).

Hobby Experience In: Liquid (Jekyll), C#, C++, R, Gusek, Ruby, QGIS, Rust.

Language Skills: Working proficiency in Mandarin. Lived in Beijing for 9 years