

Catherine Rasgaitis

Machine Learning Engineering

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EDUCATION

University of Washington - Seattle

*Bachelor of Science, Computer Science and Neuroscience
Minor in Neural Computation and Engineering*

Expected Graduation: June 2025

GPA: 3.7

EXPERIENCE

Research Assistant

Noble Lab @ University of Washington

Oct 2023 – Present

Seattle, WA

- Develop the TwinC model for predicting Hi-C contact maps for intrachromosomal loci. Interpret traditionally blackbox models to better understand predictions
- Current TwinC model outperforms the state-of-the-art ORCA model

Research Assistant

Orsborn Lab @ University of Washington

Oct 2022 – Present

Seattle, WA

- Code and debug a tablet-based “target tracking task/game” for rhesus macaques
- Supervise and train subjects to interact with tablet
- Design and optimize machine-learning models to predict subjects’ future performance on task based on previous performance
- Analyze neural and behavioral data, such as motor learning and feedback + feedforward control

President

Synaptech @ University of Washington

Sep 2023 – Present

Seattle, WA

- Teach basic neuroanatomy and how to analyze neural (EEG and Neuropixels) and eye-tracking data
- Lead weekly project-based meetings. Apply for grants, organize hackathons and guest speaker events.
- Create original project demos (ex: an app that streams EEG data to create animated fractal patterns)

Research Assistant

Behavioral Ecophysics Lab @ University of Washington

Mar 2023 – Oct 2023

Seattle, WA

- Analyze high-speed camera trap and GoPro footage of honeyeaters feeding at flowers
- Artificially augment image datasets with randomized transformations and external data sources
- Determine presence of birds, species identification, and flowering probing habits using computer vision techniques

AI Intern

NASA Jet Propulsion Laboratory

June 2023 – Aug 2023

Pasadena, CA

- Leverage behavioral cloning and inverse reinforcement learning methods to automate the scheduling of mission communications on the Deep Space Network (DSN). Build gym to run tests and evaluate various RL architectures.
- Built a web scraper to extract data from mission wiki pages and DSN documents, to interface with Meta’s LLaMA model. Conducted various experiments to query the LLM about mission requirements. Use LLM outputs to augment inputs for RL model.

PROJECTS

70+ Hackathon Projects (MLH Top 50 Hacker)

Samples: an app to predict natural disasters, an organizational app for food banks, a practice productivity app for musicians, a program that finds optimal species/locations to plant trees, a skin cancer classifier app, etc.

Opticars

Use eye movements to control mini Arduino cars on an obstacle course. Also offers AI-assisted driving.

SmartMusic

Generate original music compositions using NLP-based techniques. Iteratively improve compositions in the user’s preferred musical style based on neural feedback.

Languages: Python, MATLAB, SQL, HTML/CSS/JavaScript, TypeScript, Java, C, C++

Additional: NumPy, SciPy, pandas, scikit-learn, TensorFlow, Keras, PyTorch, Optuna, wandb, RLib, nltk, matplotlib, seaborn, plotly, Flask