

Catherine Rasgaitis

Biomedical Engineering PhD Student @ Johns Hopkins University

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EDUCATION

Johns Hopkins University - Baltimore, MD

Doctor of Philosophy (Ph.D.) in Biomedical Engineering

Founder of Mic Drop; Officer of Stand Up Comedy Club (SUCC); Officer of Homewood United Music (HUM)

Aug 2025 - present

GPA: 4.0

University of Washington - Seattle, WA

Bachelor of Science in Computer Science; Minor in Neural Engineering

President of Synaptech; Vice President of SPACE

Sep 2022 - Jun 2025

GPA: 3.7

EXPERIENCE

PhD Student

Kanold Laboratory & Bat Lab @ Johns Hopkins University

- Co-advised by Dr. Patrick Kanold and Dr. Cynthia Moss.
- My research explores navigation and multisensory integration in the superior colliculus, combining calcium imaging, electrophysiology, and behavioral approaches in both the mouse and echolocating bat models.

Aug 2025 – Present

Baltimore, MD

Research Fellow (SURFiN)

Svoboda Lab @ Allen Institute for Neural Dynamics

- Design and evaluate novel compression methods for light sheet microscopy volumes.

Sep 2024 – Jun 2025

Seattle, WA

Research Assistant

Noble Lab @ University of Washington

- Develop the state-of-the-art TwinC model for predicting Hi-C contact maps for intra and interchromosomal loci.
- Interpret traditionally blackbox models using xAI methods to better understand predictions.

Oct 2023 – Jun 2025

Seattle, WA

Research Assistant

Orsborn Lab @ University of Washington

- Code and debug a tablet-based “target tracking task/game” for rhesus macaque subjects (monkeys).
- Supervise and train naive subjects to interact with tablet and learn task.
- Design and optimize machine-learning models to predict subjects’ future task performance from previous performance, task difficulty, enthusiasm, etc. Develop an algorithm for automatic changes to task difficulty.

Oct 2022 – Jun 2025

Seattle, WA

Oceanographer

Regional Cabled Array @ Ocean Observatories Initiative

- Work and live aboard the R/V Atlantis during the VISIONS 2024 research expedition.
- Assist with underwater photography, logging biology, core sampling, and constructing water flow instruments.
- Use variational autoencoders to analyze and reconstruct whale calls from hydrophone recordings.

Aug 2024 - Dec 2024

300 mi offshore of Newport, OR

Research Intern

Hou Lab @ Cold Spring Harbor Laboratory

- Build Cheephys3D, a novel software tool to generate three-dimensional models of facial muscles alongside subcortical neural recordings in mice. Also created a command line tool for synchronizing signals.
- Design a pair of autoregressive models to predict time series of (1) future neural states and (2) future facial muscular states of mice. Compare the models’ hidden state matrices using statistical shape analysis.
- Design a decoder model to directly predict geometric facial features from neural time series data.

Jun 2024 – Aug 2024

Cold Spring Harbor, NY

Research Assistant

Makeability Lab @ University of Washington

- Build EARLL, an embodied AR-based language-learning app to interface with the HoloLens2. (Published in UIST)
- Design depth estimation heuristics for grab detection; run experiments for real-time image segmentation.

Jan 2024 – Jun 2024

Seattle, WA

AI Intern

Deep Space Network (DSN) @ NASA Jet Propulsion Laboratory

- Leverage behavioral cloning and inverse reinforcement learning methods to automate the scheduling of mission communications on the DSN. Build gym to run tests and evaluate various RL architectures.

Jun 2023 – Aug 2023

Pasadena, CA

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

Also familiar with embedded systems/microcontrollers, prototyping, and computer aided design.