

# Liam Pavlovic

(203) 499-8252 · 19 Seaverns Ave #2R, Jamaica Plain, MA 02130 · pavlovic.l@northeastern.edu  
github.com/liampav3 (private repos available upon request)

## RESEARCH INTERESTS

I am interested in developing perception algorithms that allow robots to explore safely and learn reliably with minimal human assistance. My current research focus is improving the expressivity of uncertainty models used in robotic systems to enable introspective reasoning for robotic agents. To this end, I am working on efficient methods for generating accurate sample-based approximations of perception problem posteriors.

## EXPERIENCE

**Northeastern University**, Graduate Research Assistant, Boston, MA Sept 2022 - Present

- Developing scalable variational inference algorithms for perception problem posteriors
- Assisting with advising multiple master's students theses, including projects on highly scalable gaussian process implicit surfaces, visual odometry, and neural network uncertainty quantification

**European Synchrotron Radiation Facility**, Neural Networks Co-op, Grenoble, France Sep. 2021 - Dec. 2021

- Developed a self-supervised, convolutional neural network-based method for denoising neural X-ray holotomographic data, significantly reducing the radiation dose and time required to resolve individual synapses
- Generated high-quality and varied datasets from holographic X-ray projection data

**Northeastern University**, Teaching Assistant, Boston, MA 14 months total

- Courses taught: Fundamentals of Computer Science II, Theory of Computation, and NLP for Robotics
- Selected to run review sessions for major exams and advise instructor on topics to focus on

**Northeastern University**, Research Assistant, Boston, MA Jul. 2020 - Dec. 2020

- Optimized high performance code to find difficult to compute values up to 2000x faster, enabling the discovery of new patterns and theorems
- Assisted in developing a novel proof technique for correlation bounds using directional derivatives

## PAPERS

- Ivanov, Peter, **Liam Pavlovic**, and Emanuele Viola. "On correlation bounds against polynomials." *38th Computational Complexity Conference (CCC 2023)*.

## SKILLS

**Coding Languages:** Python, Java, Typescript, C

**Technical Skills:** Kernel Methods, Variational Inference, Gaussian Processes, Linear Algebra, Equivariant Machine Learning, Transformers, Computer Vision, Bayesian Neural Networks, Graph Neural Networks, Linux

## EDUCATION

**Ph.D. Student in Computer Science, Northeastern University**, Boston, MA Sept. 2022 - Present

Advisors: David Rosen and Lawson Wong

Coursework: Adv. Perception | Adv. Machine Learning | Geometric Deep Learning

**B.S. in Computer Science, Northeastern University**, Boston, MA Sept. 2018 - May 2022

Coursework: Fund. of Software Engineering | Natural Language Processing | Machine Learning and Data Mining

Artificial Intelligence | Natural Language Processing for Robotics

## FUNDING AWARDS

- **NSF Graduate Research Fellowship**, Sept. 2023-Present
- **NSF REU Grant**, Jul. 2020-Dec. 2020