CAMERON RYAN

GitHub

Personal Website: perceptrons.org

All of the Apps I coded

(+1) 585-794-6360

ryan.came@northeastern.edu

EDUCATION

Northeastern University *June 2027*

Candidate for Bachelor of Science Mathematics and Physics

GPA: 3.89, Dean's List

Involvement:

- Disrupt (Finance club) Quantitative Research Director

EXPERIENCE

Undergraduate Research Program University of Rochester Laboratory for Laser Energetics

- *Summer 2025*: Developed machine learning algorithm for performing material structure identification on molecular dynamics simulation data for studying high pressure phase transitions (application is deuterium tritium interactions in nuclear fusion). Research progress was presented at IFE-SURE symposium in August 2025

- *Summer 2023*: Worked in Python, Javascript, Perl, and PHP to form CGI authentication scripts for securing laboratory control system

- *Summer 2022*: Investigated Podman containers for scientific computing projects with Red Hat Enterprise Linux, culminating in project report

Molecular Dynamics Software Volunteer Babbitt Lab, Rochester Institute of Technology *2022*

Facilitated research on Web compiled version of CppTraj software for comparatively analyzing molecular dynamics simulations of proteins through Javascript, WebAssembly and C++

PUBLISHED RESEARCH

Gregory A. Babbitt et al. ATOMDANCE: Kernel-based denoising and choreographic analysis for protein dynamic comparison". In: Biophysical Journal (Mar. 2024). doi: 10.1016/j.bpj.2024.03.024.

PROJECT HIGHLIGHTS

Search Engine *Summer 2024*

Search engine performing large scale image and text retrieval on Wikipedia content adopting neural network embeddings. Project achievements include:

- Optimized multi threaded containerized web crawler for indexing large amounts of data quickly
- Constructed gRPC server for communication between Docker containers
- Fabricated container based nearest neighbor search server for high volume semantic content probing
- Scripted Python web app for handling HTTP search queries, producing consumer facing search engine

Naturify *Spring 2023*

- Made iOS App for species classification available on the Apple App Store, and inference server
- Trained image classification neural network on Nvidia A100 GPU using Pytorch
- Trained metadata neural network for calculating geographic densities of wild species

Floral *Spring 2023*

Built Python neural network library for Jax available on Pypi.

WordLab *Fall 2021*

Published iOS App for taking notes, and employing AI to query information within saved notes.

DNA File Encoder *Spring 2023*

Wrote program in C for (encoding/decoding) any file (to/from) a DNA sequence.