

Niko Lorantos

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EDUCATION

University of Massachusetts Amherst Amherst, MA
College of Natural Sciences | Commonwealth Honors College
Bachelor of Science, Mathematics Expected 2027

- Concentration in Mathematical Computing
- Member of the Commonwealth Honors College
- Recipient of the CICS Certificate of Recognition in Student Leadership, UMass Amherst Grant, Dean's Award, John and Abigail Adams Scholarship, and Dean's List Honors

EXPERIENCE

PUSH Lab, Amherst College
Researcher Summer 2024 - Present

- Working under Lee Spector in the Programs Under Selection and Heredity Lab
- Creating a neuroevolution framework to discover and optimize neural network architectures
- Preparing the open-source PyshGP python package for its 1.0 release

SIMS Lab, UMass Amherst CICS
Research Assistant Spring 2024 - Present

- Working under Przemek Grabowicz and JungHwan Yang in the Socially Intelligent Media and Systems Lab
- IC2S2 2024 paper submission nominated for social impact and research methods awards
- Developed language models to label 100,000+ Twitter polls in preparation for poststratification
- Reduced the cost of evaluating polls by more than 90% while greatly improving performance
- Used bootstrapping to evaluate model performance and achieved F1, precision, and recall scores above 0.9
- Responsible for naming, designing, and overseeing UI/UX development of the Social Polls website

Neoclease
AI Intern Summer 2024

- Developed language models to discover novel protein structures
- Explored instruction-tuning and fine-tuning techniques on GPT-4, Phi-3, and ESM-2
- Utilized AlphaFold 3, Uniprot BLAST, and other validation tools to improve model outputs

UMass Data Science Club
Head of Networking Spring 2024 - Present

- Coordinating speaker series events with researchers and professors involved in AI
- Attending conferences and events in the northeast to network in the field of artificial intelligence
- Led the Phi-2 small language model fine-tuning project (prev. Project Manager)

PROJECTS

Solving a Rubik's Cube with Reinforcement Learning Spring 2024

- Led a team of math and computer science students to develop an agent capable of solving a virtual Rubik's Cube using Stable Baselines PPO, an optimal reward function, and compact cube representation methods

Aura Winter 2023

- Developed an LLM with access to Google, reducing hallucinations and improving user experience

Testing LLM Comprehension Fall 2023

- Evaluated GPT comprehension of various scientific documents and presented findings to a group of peers

SKILLS

Machine Learning: Language Models, Reinforcement Learning, Evolutionary Computation

Technical: Python, JavaScript, Colab, Github, NumPy, PyTorch, OpenAI API, UI/UX

Soft Skills: Analytical Reasoning, Leadership, Public Speaking, Problem Solving, Collaboration