

Nathan Wolf

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PROFESSIONAL SUMMARY

Aspiring ML Researcher and software engineer with experience in the industry R&D Space. Focused on NLP research, with specific interests in Mechanistic Interpretability and Computational Semantics.

EDUCATION

Bachelor's of Science, Computer Science

May 2026

UMass Amherst, Amherst, MA

- Focused on Machine Learning, Linguistics, and Natural Language Processing
- Conducted research with UMass NLP, UMass Psycholinguistics, and Amherst College NLP

Bachelor's of Arts, Computational Linguistics

May 2026

UMass Amherst, Amherst, MA

EXPERIENCE

Researcher

Sep 2025 - Present

UMass NLP Group, Amherst, MA

- Composed senior thesis on crosslinguistic benefits of morphological tokenization for LLMs

Research Assistant

Sep 2025 - Present

Amherst College NLP Group, Amherst, MA

- Conducted interpretability research on a model distinguishing text translated into English from text written in English
- Performed attention visualization and saliency mapping to better understand the attributes the model was looking for

Research Assistant

Feb - May 2025

UMass Psycholinguistics Lab, Amherst, MA

- Studied the influence of surprisal on processing difficulty due to grammaticality judgements
- Processed raw eye-tracking data for the study
- Performed various linear mixed-effects analysis to estimate effect sizes
- Coauthored paper expanding on these results

Software Engineer Intern

Summers 2024, 2025

Shell TechWorks, Boston, MA

- Redesigned web and mobile codebases for outdated construction management platform, totaling 100,000 lines of code
- Demoed and pitched both apps to key stakeholders
- Researched different methodologies for efficient fine-tuning of Large Language Models
- Built multi-agent RAG workflow to analyze the investability of startup pitches
- Built hybrid search RAG workflow to query Elasticsearch database with natural language questions (90% accurate)

Events Coordinator/Project Lead

Jul 2023 - Present

MassAI, Amherst, MA

- Led/taught a team of new students to build an unsupervised email classifier as their first machine learning project
- Adapted research literature on document clustering and tested potential methodologies to help guide the team
- Built reinforcement learning (RL) gym and agents to provide MassAI with an RL competition event

SKILLS

Python | Pytorch | Huggingface | Tensorflow

PUBLICATIONS

- Staub, Wolf, Dillon: "Linking syntactic computation to eye movements in reading: Evidence from agreement"; Submitted to Open Mind 2025

AWARDS

- UMass Amherst Dean's List 2022 - Present
- Eagle Scout 2021
- AP Scholar with Distinction 2022
- Best use of AI, HackHer 413 2025

PERSONAL PROJECTS

Script Generator

Feb - May 2025

- Fine-tuned LLM to generate original video scripts
- Created custom training corpus
- Experimented with methodologies and hyperparameters for best results

GRPO Experiments

June 2025

- Experimented with GRPO for Reinforcement Learning LLM fine-tuning
- Fine-tuned LLM to use the most frequent english words possible in its response
- Fine-tuned LLM to maximize rhyming and keep consistent number of syllables per line

Unnatural Language Processing

Feb - Aug 2023

- Used RNN-based model to predict phonemes in English text
- Deployed model to create a text-to-speech site

Unsupervised Email Classifier

Feb - Aug 2025

- Led team of new students through their first Machine Learning Project
- Provided direction to the team and assisted with work to categorize emails with document clustering
- Assessed document clustering research literature to determine methodology