

Tiago Mateus Moreira de Almeida

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EDUCATION

Stevens Institute of Technology - Hoboken, New Jersey

Bachelor of Science, Computer Science | GPA: 3.978

Expected May 2028

Coursework: Matrices & Vectors, Multivariate Calculus, Discrete Structures, Data Structures, Algorithms (In Progress), Computer Architecture and Organization (In Progress), Linear Algebra (In Progress), Intermediate Statistics (In Progress)

Honors: Global Scholarship, Upsilon Pi Epsilon Honor Society

The American International School of Muscat - Muscat, Oman

Graduated May 2024

Relevant Coursework: AP Computer Science Principles, AP Calculus AB, AP Physics 1 & 2, AP Biology

GPA: 4.0 | 1540 SAT (800 Math, 740 Reading and Writing) | 13 AP Courses (11 scored 5/5)

Honors: Mathematics Student of the Year 2023, Physics Student of the Year 2024, Music Student of the Year 2024, Perfect AP Computer Science Test Score (Top 0.3% of test takers; placed top 300/130,000 test takers)

WORK EXPERIENCE

Explainable and Controllable AI Lab | Hoboken, New Jersey

Research Assistant

2024-Present

- Applying core skills in machine learning (ML) and natural language processing (NLP), including model interpretability techniques, via experiments and analysis
- Contributing towards the laboratory's research initiatives and publications via mechanistic interpretability projects under the guidance of Professor Zining Zhu

RESEARCH PROJECTS

Conceptual Hierarchies within Large Language Models | ECAI Lab

2025

- Used NLTK and Grok-3 to automatically generate a novel WordNet-derived dataset of hierarchical concepts, complete with 892 nouns and knowledge-expressing prompts
- Implemented activation patching, a causal mechanistic interpretability technique, by registering PyTorch forward hooks on layer and value projection modules of Llama-2-7B, Gemma-2-9B, and Mistral-7B-v0.1 via HuggingFace transformers
- Processed the experimental outputs using Pandas, NumPy, and SciPy, finding that concepts are organized hierarchically within LLMs in around 61-75% cases
- Finishing a manuscript for arXiv preprint and submission to ACL Rolling Review

SKILLS

Programming Languages: Python, Java, Scheme

Libraries: PyTorch, HF Transformers, NumPy, SciPy

Research: Adaptability, Critical Thinking, Problem Solving, Communication & Presentation, Data Analysis

EXTRACURRICULARS

Jazz and Concert Ensemble | Hoboken, New Jersey

1st Tenor Saxophone

2024-Present

- Invited to play and solo with the Stevens Jazz and Concert ensemble