

Rishub Tamirisa

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EDUCATION

University of Illinois at Urbana-Champaign

Graduation: December 2024

Bachelor of Science in Computer Science

UIUC GPA: 3.95/4.00

- **Awards:** Dean's List 2020 - Present | James Scholar | ICML 2023 Early Career Award
- **Organizations:** AI@UIUC, Engineering Council, Cancer Research Scholar's Program
- **Relevant Coursework:** Multivariable Calculus, Differential Equations, Data Structures, Linear Algebra, Signals and Systems, Computer Architecture, Database Systems, Numerical Methods, Probability and Statistics, Deep Learning, Machine Learning Theory, Algorithms, System Programming, Reinforcement Learning

RESEARCH EXPERIENCE

AI@UIUC

March 2023 – Present

Principal Research Scientist — Supervised by Dr. Volodymyr Kindratenko

Champaign, IL

- Researching model editing for concept removal in LLMs and probing knowledge representations in transformers (in collaboration with the Center for AI Safety)
- **First-author** of [FedSelect](#), **accepted at ICML 2023 FL and CVPR 2024**, proposing a novel algorithm for personalized federated learning by fine-tuning neural subnetworks
- Gave a talk at Google Research in Mountain View about follow-up work
- Co-running two research projects (repository-level code generation, improved long-context LLM retrieval) to help motivated underclassmen towards publication

Blender Lab

May 2023 – Present

Undergraduate Research Assistant — Supervised by Dr. Heng Ji

Champaign, IL

- Researching multimodal generative models to discover new organic molecules with desired geometric shapes
- Training language model and shape-conditioned 3D diffusion on protein point clouds to generate proteins with a desired topology, described via natural language

PROFESSIONAL EXPERIENCE

Mindy Group

August 2023 – Present

Founding Engineer

Menlo Park, CA

- Led LLM system design / engineering at a seed-stage Sequoia startup with the founding members of YouTube and PayPal to create a personal assistant within email
- Researched and implemented state-of-the-art fine-tuning methods for adapting open-source models to custom tasks
- Conducted and designed ML interviews for ML research and engineering candidates

Amazon

May 2023 – August 2023

Software Engineer Intern (Summer 2023) | AWS, Java, React, Typescript

Sunnyvale, CA

- Designing brand block-list and identification API for customer-facing brand follow system, contributing to increased user engagement with 50M+ impressions and serving 200k+ brands per month
- Contributed over 60% of all changes to a new service at Amazon, adding novel functionality and integrating a new authentication flow, which was presented to the team

National Aeronautics & Space Administration (NASA)

June 2022 – Dec. 2022

Research Engineer Intern (Summer, Fall 2022) | Python, PyTorch

Remote, US

- Created distributed model training infrastructure for efficient throughput of large-scale PDE simulation datasets
- Implemented seq2seq transformers from scratch and fine-tuned existing LLMs to train token classification and sentence generation on domain-specific data

PROJECTS

Open-Source Contributions

- **PyTorch** - added new **nn.Module** layers in both Python/C++, discovered new autograd / memory formatting failures and increased testing coverage ([#96925](#), [#96641](#))

Construct | *Python, JS, Heroku, Flask, HTML, Git*

Feb. 2022

- Deployed an ML model that predicts residential building energy efficiency with 97% accuracy to a web app in which users can create custom building designs and receive estimates on energy efficiency
- Won **1st Place Data Science Project at HackIllinois 2022**, UIUC's 36-hour premier collegiate hackathon

TECHNICAL SKILLS

Languages: C++, Python, CUDA, Java, Swift, SQL, HTML, CSS, Javascript, MATLAB

Libraries / Frameworks: PyTorch, Tensorflow, Flask, Transformers, pandas, NumPy, scikit-learn