

Hailemariam Mersha

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Education

New York University

B.S. in Computer Science and Mathematics

Abu Dhabi, UAE

Aug 2023 – May 2027

Relevant Coursework: Applied ML, Operating systems, Deep Learning, Agile software development, Algorithms, Data Structures, Computer Systems, Computer Networks, Linear Algebra, Probability & Statistics

Technical Skills

Languages: Python, C/C++, Java, JavaScript, SQL, Bash/Shell, HTML/CSS

Frameworks/Tools: React, Node.js, Tailwind CSS, Docker, Git, Pandas, NumPy, xarray, Matplotlib, Jupyter

Platforms: Linux, HPC/NCAR Systems

Work Experience

Research Assistant, SANAD Lab

Feb 2026 – Present, Abu Dhabi, UAE

- Conduct research on prompt injection attacks targeting LLM-powered blockchain trading agents.
- Build datasets of malicious and benign token metadata to study real-world adversarial prompt patterns.
- Develop detection pipelines using pattern analysis, obfuscation detection, and risk scoring.
- Evaluate robustness and contribute to improving the security of LLM-based autonomous systems.

Research Assistant, eBrain Lab

Jan 2026 – Present, Abu Dhabi, UAE

- Participate in analysis-oriented research on LLM jailbreak attacks.
- Assist in large-scale experiment execution using Jubail HPC.

Helpdesk Technical Specialist, NYU Steinhardt

Sept 2025 – Dec 2025, New York, USA

- Provide front-line IT support to 200+ faculty, staff, and students, ensuring the smooth operation of daily technology.
- Manage and prioritize helpdesk tickets, efficiently resolving hardware, software, and network issues.
- Documented common solutions and updated knowledge base articles, improving long-term support and reducing repeated tickets.

Software Engineer Intern, Letsrise

Summer 2025, Abu Dhabi, UAE

- Developed and deployed 3 new production features using React and Tailwind CSS, increasing user engagement by 30% for over 5,000 users.
- Implemented Firebase authentication and integrated Stripe payments with Node.js/Express to enable secure transactions.
- Optimized frontend code and API calls, reducing average page load times by 25%.

Data Analyst, Mubadala ACCESS Lab

May – Aug 2024, Abu Dhabi, UAE

- Processed and analyzed over 1TB of CMIP6 and ERA5 climate datasets on High-Performance Computing clusters, reducing analysis runtime by 10%.
 - Automated the visualization of over 40 years of climate data with Python, enabling faster insights for researchers.
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Projects

maptourai (Locify) (Next.js, Mapbox GL, FastAPI, MCP) *Frontend GitHub | Backend GitHub*

- Built an AI-native tour guide that tracks user location, caches POIs, and serves narrations generated via Dedalus MCP agents with Mapbox GL UI and shadcn/tailwind components.

CNN from Scratch & ResNet18 Fine-Tuning (Python, PyTorch, SLURM) *GitHub*

- Implemented a mini-CNN framework with numeric gradient checks and fine-tuned ResNet18 on EMNIST; achieved 96.5% test accuracy.

Moved Object Detection with DETR (PyTorch, Hugging Face, SLURM) *GitHub*

- Fine-tuned DETR on pixel-diff frame pairs and produced automated evaluation visuals.

TypeRush: Word Storm (Express, MongoDB, Tailwind, AJAX) *GitHub*

- Deployed a typing game with authentication, difficulty tiers, WPM/accuracy tracking, and AJAX leaderboards.
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Leadership & Activities

President, NYU Abu Dhabi Ethiopian Eritrean Students Association

Aug – Dec 2024

- Organized over 5 cultural events for 100+ students; managed a \$1,000 budget.

Spiritual Life Leader (Guided Meditation)

Aug 2024 – Feb 2026

- Led guided meditation sessions and mindfulness activities to support student wellbeing.