Nyx Haile

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Education

Massachusetts Institute of Technology — Cambridge, MA
B.S., Mathematics, Minor in Computer Science Minor in Economics GPA: 3.5 — *Exp. Grad. May 2026*

Experience

Research Mentor — September 2023 – September 2025
The SHED — *Cambridge, MA*

- Served as a key mentor in a cutting-edge, interdisciplinary makerspace, guiding research projects at the intersection of biocomputing, human-computer interaction (HCI), and personal transportation.
- Provided comprehensive technical training to laboratory staff on advanced equipment, ensuring compliance with safety protocols and optimizing experimental outcomes.
- Spearheaded the design and execution of innovative research methodologies, employing data-driven decision-making to solve challenges in increasing makerspace access
- Collaborated with interdisciplinary teams to advance research in computational models, machine learning applications, and data analytics, supporting the integration of quantitative techniques in experimental workflows.

Undergraduate Researcher — June 2025 – September 2025
Weiss Laboratory for Synthetic Biology — *Cambridge, MA*

- Applied theoretical computer science techniques—including graph algorithms, spatial optimisation, and formal constraint modelling—to develop a generative design pipeline for biologically constrained microarchitectures.
- Integrated AI-based prompting with classical algorithmic tools to synthesise spatially feasible geometries under physical and physiological constraints, enabling rapid and adaptable iteration.
- Designed and managed high-performance computing infrastructure to support LLM-assisted vascular mesh generation, including workstation configuration, benchmarking, and cross-platform STL validation for experimental export.

AI Developer — December 2022 – July 2023
Vana — *Remote*

- Organized the Vana X MIT Generative AI Hackathon, managing a $25,000 prize pool and coordinating logistics, outreach, and judging criteria, resulting in the participation of top-tier talent from the MIT community.
- Designed, developed, and rigorously tested a robust framework for hackathon participants, leveraging JavaScript and Python to create an efficient and scalable platform for generative AI development.
- Created a messaging applet in Swift utilizing the Vana API, integrating user-friendly functionalities while ensuring seamless interaction between backend and frontend components.

Projects

Astra | *Python, SvelteKit* — Dec 2025– Present

- ADX-Based multistrategy trading engine on top of NautilusTrader
- Dashboard with per-asset and per-strategy visualisations, entry and exit targets, and risk-aware resizing.
- Currently developing backtesting and strategic refinement.

Pokerbots | *Python* — Jan 2026

- Designed an automated bot to play a poker variant (Toss or Hold'em) using threshold-based multipolicy logic.

Technical Skills

Languages: JavaScript, Python, C/C++/C#
Frameworks: React, SvelteKit, Flask

Relevant Coursework

6.5620, 6.5630, 18.032, 6.1010, 18.650, 6.1210, 18.404, 14.03, 6.5610, 14.13, 14.16, [Descriptions Linked]