

Alexander Lopez

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EDUCATION

Northeastern University, Khoury College of Computer Science

September 2024 – May 2028

- Combined BSE in Computer Science and Mathematics with a Concentration in AI *Cumulative GPA: 3.65/4.0*
- **Programming Languages:** C++ | C | Python | Java | JavaScript | OCaml | Kotlin *Major GPA: 3.84/4.0*
- **Frameworks and Tools:** PyTorch | TensorFlow | React | SQL | AWS | Pandas | HTML/CSS | Three.js | MATLAB
- **Relevant Courses:** Data Structures and Algorithms (Java) | Advanced Probability and Statistics | Number Theory I | Group Theory | Numerical Methods for Differential Equations | Differential Geometry | Discrete Math I

Hopkins School

June 2024

- *Extracurriculars:* Science Olympiad | Editor at Large: The Razor | Varsity Wrestling (Captain), Football, and Track | Chess Club

PROFESSIONAL AND LEADERSHIP EXPERIENCE

Expandya

June 2026 – September 2026

Software Engineering Intern

Westport, CT

- Built and enhanced client websites to improve organic and AI-assisted search visibility, optimizing crawlability, indexing, site architecture, content intent, metadata, and performance while translating technical findings into actionable strategies that strengthened customer acquisition, digital reach, and long-term search presence
- Architected and optimized Python and C++ based data systems for e-commerce clients, using indexing, query caching, and performance profiling to efficiently manage datasets exceeding 3M rows and improve application scalability

Northeastern University

September 2025 – Present

Teaching Assistant

Boston, MA

- Support students in CS 3200 (Introduction to Databases) and CS 1800 (Discrete Structures) through weekly office hours, answering questions on coursework, grading, projects, debugging, and core concepts while helping students, especially those new to computer science, build confidence and stronger problem-solving skills performance profiling to efficiently manage datasets exceeding 50M rows and improve application scalability

O'Hern Lab at Yale University

June 2023 – September 2023

Computational Biology Research Assistant

New Haven, CT

- Engineered a data pipeline to transform raw 3D protein folding simulations from AlphaFold and NetSurfP neural networks into structured, analyzable datasets; optimized Python scripts on Yale's high-performance computing (HPC) clusters to process and classify 10,000+ oncogenic protein variants, identifying which mutations alter folding behavior and structure in ways directly linked to cancer pathogenesis
- Developed MATLAB scripts to visualize and interpret simulation outputs, uncovering structural patterns across pathogenic variant datasets and their downstream effects on protein stability; presented weekly progress updates to the research team and delivered a concluding poster presentation to the Yale Department of Computational Biology on key findings in protein-protein interactions (PPI) and their role in disease-driving mutations

Society of Hispanic Professional Engineers

September 2025 – Present

Undergraduate Ambassador

Boston, MA

- Served on SHPE's board, planning and promoting first-year events that connected students and strengthened an inclusive engineering community

INDEPENDENT CODING PROJECTS

Graphene

July 2026 - Present

- Developed this after I kept getting bogged down tracking edits, tests, and decisions during long agent sessions; built an evidence-backed review and handoff layer designed for Gemini CLI, Claude, and Codex using a Python CLI, MCP server, Google ADK integration, and Cytoscape viewer to trace agent loops and redirect work through approval, rejection, or handoff

RegLineage

June 2026 - Present

- Designed an enterprise regulatory-impact intelligence system around DataHub to help large organizations trace how new AI privacy and data-protection legislation may affect internal policies, datasets, pipelines, models, and downstream business assets
- Built a backend workflow for regulatory source verification, structured obligation extraction, metadata-driven asset matching, lineage-based impact analysis, and citation validation, requiring human approval before publishing governed findings back into Datahub deployment to ultimately help companies create initiative with user data while doing so in correspondence with law

IMC Prosperity 3

March 2025 – April 2025

- Finished top 8% (912 out of ~13,000) in a global algorithmic trading competition; working alongside my teammates, researched and designed various trading opportunities that involved market making, scalping, locational arbitrage, and mean reversion of alpha to optimize both execution and risk-adjusted returns

SKILLS AND INTRESTS

Skills: Microsoft Office Suite | Analytical | Communication | Project Management | Problem-Solving | Adaptable | Attention to Detail

Interests: Running (training for my 1st marathon) | Golf | Weightlifting and Nutrition | Chess | Animals (Especially my bunny Luna)