

SYED MASRUR AHMED

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EDUCATION

Dartmouth College

Hanover, NH

Bachelor of Arts, Major in Mathematics and Computer Science, GPA 4.00/4.00

June 2028

- **Relevant Coursework:** Data Structures & Algorithms, Discrete Math, Fullstack Development, Computer Architecture, Machine Learning and Statistical Methods.
- **Clubs and Organizations:** Dartmouth Quantitative Finance Club, Dartmouth Tech Consulting Group, Dartmouth Student Blockchain, Great Issues Scholars

SKILLS

Programming Languages: Python, C, C++, Assembly, Java, JavaScript, C#, SQL, Bash, HTML, CSS

Technologies: Git, Docker, Next.js, Flask, FastAPI, PyTorch, Pandas, Unity, AWS (Lambda, S3), Agentic AI

WORK EXPERIENCE

Department of Mathematics, Dartmouth College

Hanover, NH

Machine Learning Research Assistant

March 2025 – Present

- Investigated transformer mechanisms in continuous processes, culminating in a novel neural network architecture.
- Engineered a novel transformer network from scratch in PyTorch, exploring attention mechanisms for high-performance modeling of stochastic processes.

DAI Lab (Dartmouth Applied Learning & Innovation)

Hanover, NH

Software Engineer (Part-time)

September 2025 – March 2026

- **SimReach (Healthcare SaaS):** Engineered an AWS-based decision support tool to optimize physician outreach, architecting a data validation algorithm for EHR uploads and building full-stack onboarding flows with automated Lambda-driven cron jobs.
- **Benchmark Space Systems:** Scaled a Godot satellite simulation to 1,000+ users via a web port and a serverless Firebase backend.

SpringMicro Software

Phoenix, AZ (Remote)

Software Engineering Intern

June 2025 – September 2025

- Developed a full-stack helpdesk platform for 50+ users, engineering 14 FastAPI REST API endpoints and a PostgreSQL database to manage 200+ technical articles.
- Implemented semantic search using cosine similarity to map user queries to support documentation, reducing manual ticket resolution time by 15%.

PROJECTS

Trippee | trippee-ai.vercel.app | [Github](#) | *Next.js 15, TypeScript, Supabase, Google Gemini, Mapbox*

December 2025

- Engineered a real-time collaborative trip-planning platform using Next.js 15 and Supabase, utilizing WebSockets to synchronize geospatial map state, live user presence, and shared rich-text editing across client sessions.
- Architected an agentic AI workflow using Google Gemini for autonomous database interactions via tool calling, and applied K-Means clustering algorithms to automate itinerary structuring and route optimization.

sodacan (HackPrinceton 2025) | [Github](#) | *Google Gemini, Typer, SQLAlchemy*

November 2025

- Developed an AI-powered, terminal-first data workbench (Python, Typer, pandas) using a two-stage Google Gemini 2.5 Flash pipeline to translate natural language into executable pandas code.
- Developed an interactive REPL with undo/redo and robust connectors for sources (PDF, S3, Snowflake) and sinks (Power BI, PostgreSQL, GCS) using SQLAlchemy and boto3.

HONORS AND AWARDS

- **Academic Distinctions:** Rufus Choate Scholar (Awarded to the top 5% of students), Jack Byrne Scholar in Mathematics; Academic Citations for Excellence in Linear Algebra and Machine Learning.
- **International Achievements:** Highest Score in the World (A-levels Chemistry); Highest Score in Bangladesh (A-level Further Mathematics)