

Smyan Sengupta

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EDUCATION

Northeastern University

Khoury College of Computer Sciences

Candidate for Bachelor of Science in Computer Science, with Concentration in AI

September 2023 – Present

Expected May 2027

Boston, MA

- **GPA:** 3.86/4.00 | **Awards/Honors:** Dean's List (all semesters)
- **Relevant Coursework:** Machine Learning and Data Mining I, Artificial Intelligence, Object-Oriented Design, Algorithms and Data, Database Design, Computer Systems, Discrete Structures, Mathematics of Data Models

EXPERIENCE

Machine Learning and Data Analysis (MSAT Modeling) Co-op

Pfizer

July 2025 – Present

Andover, MA

- Perform data analysis on lab datasets for an \$11 billion project for Pfizer's Manufacturing Science and Technology (MSAT) team, utilizing XGBoost, Random Forest, Scikit-learn Gradient Boosting, and Support Vector Regression
- Execute and automate extensive data cleaning, organization, and analysis processes; and implement performance and explainability analysis; to ensure maximum consistency and efficiency across datasets
- Engineer spaCy-based chatbot providing automated insights on experimental data, process documentation, and model optimization strategies for manufacturing workflows

Co-Founder and Vice President

MedCS Lab

May 2025 – Present

Boston, MA

- Led an initiative to establish an interdisciplinary undergraduate research group focused on the intersection of computer science/data science and medical fields
- Actively manage communication platforms, including the Discord server and Notion page; facilitate communication and coordination between members and advisors

Founding Member and Hackathon Head

Northeastern Claude Builder Club

August 2025 – Present

Boston, MA

- Spearheaded the planning and execution of a 24-hour competitive programming event, coordinating budgeting and sponsorship to ensure proper funding allocation

Founding Member and Treasurer

Northeastern Association for Computing Machinery

September 2024 – Present

Boston, MA

- Manage all finances, disbursement of funds, and meeting requirements; coordinate all transactions with Khoury Kaleidoscope
- Organize meetings, mixers, and collaborative events with other clubs; coordinate with professors to speak at events

Teaching Assistant – Foundations of Data Science

Khoury College of Computer Sciences

September 2024 – April 2025

Boston, MA

- Facilitated 6+ office hours per week, led project meetings, proctored labs/exams, and answered questions to assist students with assignments and aid them in understanding data analysis, linear algebra, statistics, and machine learning concepts
- Graded 90+ assignments per week, providing useful feedback

PROJECTS

Guardrails: Atomic | *TypeScript, Next.js, Z3 Prover, MongoDB, OpenRouter*

October 2025

- **Won 1st place** at ALIHacks 2025
- Built AI-powered formal verification platform that generates mathematically verified code from natural language inputs
- Engineered YAML-to-Z3 conversion pipeline with automated counterexample generation for program verification

NewsFactChecker | *Python*

February – April 2025

- Developed and trained a fact-checker AI model to determine the amount of misinformation present in news articles
- Utilized Bayesian Inference with Hamiltonian Monte Carlo sampling to calculate probabilities of misinformation

OpenLegislation | *React, TailwindCSS, Congress.gov API, OpenAI API*

October 2024

- **Won 1st place** on the Open Data Track at HackHarvard 2024
- Developed a web application to make current Congress bills more accessible and understandable for common users, utilizing the OpenAI API to perform vector search and simplification

Stocks Simulator | *Java, RESTful APIs, MVC Architecture, Swing*

May – June 2024

- Developed a full-stack Java application using MVC architecture for users to create, update, and maintain stock portfolios
- Incorporated algorithms to calculate stock gain/loss, x-day moving average and crossovers, and portfolio value/composition
- Implemented portfolio rebalancing algorithms and performance visualizations
- Leveraged the Alpha Vantage API to maintain accurate real-time data for 1000+ stocks

SKILLS

Languages/Frameworks: Python, Java, C, SQL, HTML, CSS, JavaScript, React, React Native, Flutter, TailwindCSS, Swing

Libraries/Tools: Pandas, NumPy, Matplotlib, Scikit-learn, PyTorch, MongoDB Atlas, Git, GitHub

Technical Skills: Object-Oriented Programming, Functional Programming, Data Structures, Algorithms, Web Development, Mobile App Development, Machine Learning, Database Design, RESTful APIs