RAHUL RAO

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EDUCATION

Northeastern University Boston, MA
Bachelor of Science in Computer Science, 3.9/4.0 GPA, Dean's List (All Semesters) *Expected Graduation: Dec. 2027*

Relevant Coursework: Artificial Intelligence, Algorithms & Data Structures, Programming in C++, Discrete Structures, Matrix Methods for ML, Object-Oriented Design, Computer Systems, Calculus 3, Linear Algebra, Principles of Mathematics, Theory of Computation
Languages/Frameworks: Python, Java, JavaScript, C, C++, React, PyTorch, TensorFlow
Developer Tools: Git, Google Colab, Homebrew, Docker, Render, Vercel
Libraries: Node/Express, pandas, NumPy, Matplotlib, Scipy

ACTIVITIES

Northeastern Blockchain Jan. 2026 – Present
Technology Lead *Boston, MA*
- Lead a **developer team** to maintain the organization's web presence using **React**, coordinating agile sprints and QA.
- Design curriculum and lead student workshops on **smart contract** development and **blockchain fundamentals**.

Northeastern AI (MLE Dev Team) Sep. 2025 – Present
Machine Learning Engineer *Boston, MA*
- Architect end-to-end **machine learning pipelines** for industry partners, implementing **model training**, **hyperparameter optimization,** and **systematic performance evaluation** to deliver scalable, production-ready solutions using **Python** and **PyTorch**.
- Support the delivery of **scalable codebases** to external organizations by providing **detailed documentation** to validate system efficiency.

EXPERIENCE

Data Science Foundations - Teaching Assistant Jan. 2026 – Present
Northeastern University, Khoury College *Boston, MA*
- Hold office hours weekly to clarify complex concepts such as **k-Nearest Neighbors** (kNN), and **linear regression**, resulting in improved student comprehension and assignment performance.
- Manage the evaluation of weekly assignments and exams for **200+ students**, delivering timely, detailed feedback on technical **data science concepts** and **Python implementation**.

Software Engineering Intern May 2024 – Aug. 2024
Hypatia AI *San Diego, CA*
- Engineered **differential equation simulations** in **Python** (SciPy/NumPy) to model insulin dynamics from glucose data.
- Integrated **Python backend functions** into a **mobile ecosystem** (iOS/Android), enabling real-time CGM data processing.

Allayee Lab - Research Assistant Apr. 2023 – May 2024
University of Southern California, Keck School of Medicine *Los Angeles, CA*
- Architected a **scalable pipeline** to **parse and normalize** $30M+$ rows of GWAS data for statistical analysis.
- Refactored **Pheweb** modules to build an **interactive visualization platform** to improve researchers' inferences.
- Enhanced data throughput capabilities, allowing researchers to visualize large-scale genetic interactions efficiently.

PROJECTS

Optimum Hacknet - First Place Winner | *RLNC, gRPC, P2P Networks* Sep. 2025
- Integrated **Go-based sender/receiver** components with Optimum's P2P service proxy to achieve best system efficiency metrics.
- Built a **decentralized file transfer system** using Optimum's mump2p infrastructure with **RLNC** for reliable network communication.
- Identified and presented **network latency** issues and **documentation inconsistencies** in the **mump2p infrastructure** directly to the Optimum engineering team to improve core library stability.

AlgoTutorAI | *Docker, Ollama API, REST API* Jun. 2025
- Leveraged the **Ollama API** to architect a **context-aware tutoring engine** that delivers logic-based critiques of user-submitted solutions.
- Engineered a **scalable RESTful backend** with **automated data seeding** and **containerized deployment** to ensure environment parity.

Evolutionary Network Optimization | *Python, Graph Theory* Nov. 2022 – Mar. 2023
- **Published research paper** in the Curieux Academic Journal (Nov 2023) detailing a **novel graph theory algorithm** to maximize airline network flow, accounting for topological constraints. **Awarded 1st place** at Greater San Diego Science and Engineering Fair.
- Quantified the impact of **node removal** (airport closures) on network efficiency using demographic-weighted metrics.

VOLUNTEER WORK

Co-Founder / Instructor July 2023 – Aug. 2023
Drone Piloting and Programming Camp *San Diego, CA*
- Co-founded a non-profit STEM initiative and orchestrated weekly workshops for underprivileged students, providing direct instruction on drone flight dynamics and autonomous programming to foster technical literacy.