Amrutha Rao

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Education

Columbia University, School of Engineering and Applied Science, New York, NY $\qquad$ Expected May 2028

Relevant Coursework: Advanced Machine Learning, Software Engineering, Object Oriented Programming, Computational Biology, Intro Algorithms, Linear Algebra, Quantum Information and Computation, Diff Eq, Multivariable Calculus, Harvard CS50, Topology

Experience

PointOne, New York, NY $\qquad$ June 2025 - August 2025

Software Engineering Intern

- Developed components of scalable AI models and backend data pipelines for real-time video, image, and text processing
- Designed and extended AI systems, benchmarked AI models, analyzing latency, cost, and accuracy trade-offs to guide architecture decisions, reducing latency by ~18% and cost by ~12% while keeping accuracy within 2%

Omen, New York, NY $\qquad$ February 2025 - May 2025

Software Engineering Intern

- Implemented backend pipelines to analyze financial data, including rolling correlations and handling corporate actions
- Built and designed AI-powered investing mobile app backend with financial chatbot integration, real-time search, Supabase, and Yahoo Finance API, reducing response latency by ~18% and expanding financial query coverage by ~25%

Credytu, New York, NY $\qquad$ October 2024 - December 2024

Software Engineering Intern

- Developed machine learning models (e.g., Random Forest, XGBoost, and ensembles) to evaluate loan applications, improving prediction accuracy by ~14%
- Built a framework to compare model performance, enabling iterative improvements and automated optimization

GreenSwing, San Francisco, CA $\qquad$ August 2021 - December 2024

Co-founder and Leader

- Invented successful patent-pending device that generates electricity from the kinetic energy of door swings
- Earned six international and national level awards and features by global organizations; raised 10k in funding
- Shipped first batch of units to a health clinic in rural Malawi to power their medical equipment

SafeBeat Rx, San Francisco, CA $\qquad$ June 2023 - August 2023

Research Intern

- Analyzed ECG data and contributed ideas to research meetings and projects at a Y-combinator-backed AI/health startup
- Researched and conducted outreach to pharmaceutical companies to form partnerships

Selling Energy, Reno, NV $\qquad$ June 2022 - December 2022

Research Intern

- Conducted market research on electric vehicle charging stations to lay the groundwork for a EV charging stations course
- Created mathematical models for EV Charging businesses

Projects

Co-founder and Developer of ShadowU (shadowu.org) $\qquad$ 2025 - present

- Built platform end-to-end enabling high schoolers to shadow university students through matching and booking
- Tech Stack: Next.js, React.js, Tailwind CSS, Resend, TypeScript, Supabase + Edge Functions, Vercel

Creator and Developer of EnviroScore $\qquad$ 2022 - 2024

- Developed an award-winning iOS app that gamifies and incentivizes the fight against climate change
- Won Congressional App Challenge 2nd place and two awards at an international hackathon, drove school-wide adoption
- TEDx Speaker on Climate Tech and Original Environmental Innovations (2024)

Original Science Researcher $\qquad$ 2022-2023

- Developed novel catalyst that degrade wastewater pollution more efficiently than current catalysts
- Won an Excellence in Engineering Award from the US Army Corps of Engineers and Chevron Innovation Award

Skills and Interests

Programming Languages: Python, Java, JavaScript/TypeScript, SQL, Golang, Swift, MATLAB, HTML, CSS (Tailwind CSS)

Frameworks & Libraries: React.js, Next.js, Node.js, FastAPI, PyTorch, scikit-learn, LlamaIndex, Pandas, NumPy, Matplotlib

Activities at Columbia University

Columbia Organization for Rising Entrepreneurs OCL, Blockchain Student Investment Fund Member, CUIIN, Columbia Tourguide