COLUMBIA UNIVERSITY rayforman.com | (703) 762-6486 | raymond.forman@columbia.edu

RAYMOND W. FORMAN

Software Engineer specializing in full-stack development and AI/ML integration, architecting production systems at startups and established companies. Proven ability to own technical projects end-to-end, ship MVPs rapidly, and scale solutions from prototype to thousands of users while driving measurable business outcomes through data-driven product development.

Key Skills

Technical: Python, Typescript, Next.js, PostgreSQL, MongoDB, React, Node.js, Express.js, Flask, REST APIs, HTML/CSS, Git, PyTorch, LangChain, Hugging Face, Java, C, C++, C#, R, OAuth, NLP, RAG, UI/UX Design, Full Stack Development
Non-technical: Use Case Exploration, User-Centric Design, Data-Driven Decision-Making, Technical Presentations, Stakeholder Management | **Leadership:** Agile Workflow, Cross-Functional Coordination | **Bilingual:** English/Spanish

Education

Bachelor of Arts in Computer Science & Business Management
COLUMBIA UNIVERSITY, MAY 2025, GPA: 3.66

RELEVANT COURSEWORK: *ADVANCED SOFTWARE ENGINEERING*, DATA ENGINEERING, ARTIFICIAL INTELLIGENCE, NATURAL LANGUAGE PROCESSING, DEEP LEARNING FOR COMPUTER GRAPHICS, APPLIED COMPUTER VISION, STRATEGY FORMULATION, LEADERSHIP IN ORGANIZATIONS

Work Experience

COLUMBIA EARTH CENTER: LEARNING THE EARTH WITH ARTIFICIAL INTELLIGENCE AND PHYSICS (LEAP) AUG 2024 - PRESENT
Software Engineer

- Built an end-to-end full-stack application processing real-time ocean buoy data into actionable climate insights using React, Node.js, and PostgreSQL, serving 200+ researchers with live sea-level monitoring and predictive analytics.
- Developed an automated LLM code translation pipeline using RAG architecture with vector embeddings of Fortran documentation and codebase patterns, accelerating climate model migration by 60% while reducing manual coding errors.
- Led technical product demos for research teams, translating complex data visualizations into user-friendly dashboards that increased platform adoption by 45%.

EARNEST ANALYTICS JUN 2024 – AUG 2024
Data Analytics Intern

- Developed advanced SQL queries and data processing workflows for analyzing consumer transaction data and corporate filings, delivering automated insights for earnings prediction.
- Enhanced machine learning algorithms by contributing a new predictive indicator, improving accuracy by 5% for client decision-making in financial markets.
- Collaborated with data engineering, finance, and analyst teams to build scalable data solutions, resulting in 3 new client acquisitions through demonstrated technical value.

COLUMBIA CLIMATE SCHOOL SEP 2022 – MAY 2025
Software Engineering Intern

- Developed a full-stack event management platform (React/PostgreSQL/FastAPI) streamlining coordination for 50+ sustainability events, reducing administrative overhead by 40% and improving attendee engagement.
- Designed scalable database architecture managing institutional partnerships worth $10M+ across major climate investors, including Bezos Earth Fund, Rockefeller Foundation, and Bloomberg Philanthropies.

Projects

SIDE QUEST – AI TRAVEL PLANNER (FULL STACK) JUN 2024 – AUG 2024

- Developed a full-stack web and mobile travel planner using React Native, Next.js, and Node.js with AI-powered itinerary generation via LangChain, OpenAI API, and Pinecone vector database for intelligent travel recommendations.
- Deployed scalable infrastructure using PostgreSQL, Redis, AWS, and Docker with real-time Socket.io features, Stripe integration, and a comprehensive CI/CD pipeline demonstrating modern DevOps practices.
- Optimized itinerary generation speed by 50% through Redis caching, database query optimization, and asynchronous API processing with Python microservices.

ROBINHOOD ALGORITHMIC TRADING SYSTEM (PRODUCTION) JUN 2024 – AUG 2024

- Developed a comprehensive algorithmic trading platform leveraging Robinhood API with automated cryptocurrency trading capabilities using financial and qualitative indicators.
- Implemented a high-frequency sentiment analysis system integrating Reddit and X APIs with OpenAI's GPT-3.5, processing real-time data streams for trading decisions.
- Built robust error handling and monitoring systems, ensuring reliable operation in fast-paced trading environments.