Richard Daniel Ayebare

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Education

Massachusetts Institute of Technology, BS in Computer Science and Economics Aug 2021 – Dec 2025

- **Coursework:** Computer Architecture, Design and Analysis of Algorithms, Probability and Statistics, Graduate Machine Learning, Econometrics

Experience

Lead Software Engineer, DsideAI – Boston, MA June 2025 – Aug 2025

- Spearheaded the development of an AI assistant tool for investment professionals. The platform was created using React, Django, MongoDB, Docker and the Gemini 2.5 Pro API.
- Engineered the core logic that enables the engine generate equity and fixed income portfolios based on user-defined preferences (such as risk tolerance) and the user's financial goals.
- Developed a real-time simulation engine that allows clients to visualize portfolio re-allocations and performance instantly as they adjust the weighting of their defined factors.
- Demoed the product to prospective clients at Bank of America and Kinny Munro Wealth Advisors and received positive feedback. Product is currently undergoing further testing and refinement.

Software Engineer Intern, PipeIt.Co – Boston, MA Jan 2025 – Mar 2025

- Developed two distinct AI-powered plugins for AutoDesk Revit using C# and the OpenAI API, automation complex design and support tasks for mechanical, electrical and plumbing engineers.
- The first tool generates plumbing design objects in Revit using natural language prompts. The Open AI API is instructed to return Revit code which is then fed into the Revit API for execution.
- The second tool is a context-aware chatbot that provides instant technical support within Revit, I engineered effective prompts to ensure reliable and accurate AI responses.

Software Engineer Intern, Jane Street – New York, NY Jan 2025 – Mar 2025

- Engineered an automated trading bot in Python that achieved a top 5 finish (out of 20) in a competitive mock trading environment.
- Designed an algorithm that identified and capitalized on bond market inefficiencies using real-time feedback loops.
- Implemented the Snake game in Ocaml, focusing on efficient state management, scalable rendering and networked features like a live scoreboard.

Projects

Scheme Interpreter

- Engineered a Scheme interpreter in Python, implementing a tokenizer, recursive-descent parser, and a Read-Eval-Print Loop (REPL) with robust error handling.
- Designed a frame-based environment model with parent-pointer tree structure to manage lexical scoping, enabling the successful implementation of closures and higher-order functions.

Predictive Data Analysis (Linear Regression)

- Executed a comprehensive econometric analysis to model and predict hybrid car prices, leveraging linear regression and ARIMA time-series forecasting.

Technologies

Languages: C, Java, Python, C#, SQL, JavaScript, C++

Technologies: .NET, Docker, React, Git, Django, REST API Design