Shivam Ratnani

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Education:

University of Wisconsin-Madison:
Bachelor of Science (BS) - **Computer Science** & **Data Science** (Double Major) Expected Graduation: **May 2025**

Work Experience:

ActiveLinks [https://activelinks.app] | Co-Founder; Lead Developer **December 2024 – Present**

- Developing an iOS Application in Swift/SwiftUI, IP protected by NDA.

EduTools [https://edutools.app] | Co-Founder; Lead Developer **May 2024 – January 2025**

- Founded and developed EduTools, a secure educational platform with integrated OCR analysis and personal GPT assistance, enabling 1000+ users to build collaborative knowledge bases from academic materials.
- Architected an LLM system using OpenRouter for content analysis, prompt generation, and specialized tasks.
- Built cross-platform desktop application using Electron, React.js frontend and Node backend, deployed on Azure infrastructure with microservices architecture for scalable content processing.
- Initially used AWS EC2, S3, and RDS for chat integration, Lambda for serverless execution of OCR methods and API Gateway for OpenRouter AI model use.
- Migrated to Azure to save costs with Azure App Services for web application and VM, using Azure Blob Storage, CosmosDB for chat, and Azure Functions in lieu of AWS.

Rightworks | Software Engineer Intern **July 2024 – August 2024**

- Resolved 21 critical bugs in AccessHub's AngularJS web app, improving stability for 300,000+ active users.
- Collaborated on the development of a new Windows AccessHub application written in C#.
- Monitored and documented API performance with DataDog to optimize web application responsiveness.
- Designed and implemented a new state management system in AngularJS to address prevalent form issues, significantly improving user experience by replacing properties ".pristine, .dirty, and .touched".

Couillard Solar Foundation [https://couillard-b61b8.web.app] | Software Developer August 2023 – December 2024

- Architected a reactive solar energy visualization platform using Svelte/Node.js stack with TypeScript and Firebase, enabling real-time tracking of KWH, GWh, and CO2 emissions saved across 7 bus stops in Wisconsin.
- Implemented comprehensive backend system with Firebase Authentication, SQL database optimization, and Plotly.js data visualizations, while establishing automated CI/CD workflows through GitHub Actions.

Amara Social | Software Engineer I **December 2023 – March 2024**

- Engineered a cross-platform social networking app using React Native and MySQL, implementing WebSocket-based real-time messaging and Redux for state management. Built scalable backend architecture using Docker containers and Node.js, featuring customizable feeds with recommendation algorithms and real-time notifications.

PerkinElmer Inc. | Information Technology Intern **July 2021 – August 2021**

- Managed enterprise IT infrastructure using Google Admin Suite and Windows Server, implementing cross-network file sharing solutions while supporting 200+ users with hardware deployment and system integration.

Skills:

Languages: Java, Python, C#, C++, JavaScript, TypeScript, CSS, R, Swift, SQL/NoSQL, Go, Rust, Ruby
Frameworks: AngularJS, React, Svelte, Node.js, jQuery, TensorFlow, Keras, Plotly, MongoDB, SwiftUI
Tools: Git, Docker, Microsoft Azure, AWS, Google Cloud Platform, Firebase
Libraries: Material UI, pandas, NumPy, Matplotlib, REST

Projects:

Stock Volatility Analyzer

- Data manipulation project in AWS using Python & React, designed to track & analyze 19,000+ stocks. Program screens stocks at user-defined intervals, price ranges, & outputs top gainers/losers user-defined number of stocks.
- Utilized EC2 for running the application, S3 for secure and scalable data storage with automated data retrieval, alongside AWS services like Lambda, API Gateway, and CloudWatch for system functionality.

Connect 4 AI Game

- Developed Connect Four game in Python using Minimax algorithm with alpha-beta pruning, optimizing heuristic evaluation for game state assessment; implemented GUI with Pygame library.