

# SHIVAM RATNANI

+1 (978) 799-7813 • [shiv@ratnani.org](mailto:shiv@ratnani.org) • <https://www.linkedin.com/in/shivamratnani/> • <https://ratnani.org>

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## EDUCATION

**University of Wisconsin-Madison**

**Bachelor of Science (BS) - Computer Science & Data Science** (Double Major) | Graduated: **May 2025**

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## WORK EXPERIENCE

### Expert AI | Fullstack Software Engineer

May 2025 – Present

- Stabilized critical Athena EHR integrations through comprehensive error handling and retry logic mechanisms, reducing failed uploads from 15% to <3% for 100+ physicians processing thousands of patient consultations monthly
- Migrated core API infrastructure from Flask to FastAPI with asynchronous request handling and efficient endpoint optimization, achieving 2x performance gains and reducing API response times from 600ms to 200ms
- Refactored synchronous code to asyncio, reducing memory usage by 40% and improving concurrent handling.
- Orchestrated CI/CD pipelines using GCP Cloud Run with automated testing, reducing deployment incidents by 60%
- Integrated LangChain with OpenAI API to chain fine-tuned prompts, achieving 92%+ SOAP note accuracy
- Architected multi-stage deployment workflow for a pre-dev environment with triggers in GCP Cloud Build to test then trigger deployment with approval gates on GCP Cloud Run, implementing automated testing and code quality checks

### 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 development of new Windows AccessHub application written in C#
- Designed and implemented new state management system in AngularJS, significantly improving user experience by replacing properties ".pristine, .dirty, and .touched"
- Monitored and documented API performance with DataDog to optimize web application responsiveness
- Collaborated on Windows AccessHub C# application development and monitored API performance using DataDog

### ActiveLinks | Co-Founder, Lead Developer

December 2024 – Present

- Developing iOS application in Swift/SwiftUI serving 500+ beta users with real-time data synchronization

### EduTools | 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 dual-LLM system utilizing Mistral-7B for content analysis and specialized models (LLama3, Gemma2, Qwen2.5-coder, Claude 3.5 Sonnet) for targeted educational solutions
- Built cross-platform desktop application using Electron, React.js frontend and Node backend, deployed on Azure infrastructure with microservices architecture for scalable content processing
- Migrated from AWS to Azure, implementing cost-saving measures with Azure App Services, Blob Storage, CosmosDB, and Azure Functions

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## Projects:

**Stock Volatility Analyzer:** Python/React AWS application analyzing 19,000+ stocks with automated screening

**Connect 4 AI:** Python game using Minimax algorithm with alpha-beta pruning and Pygame GUI

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## Skills:

**Languages:** Python, JavaScript, TypeScript, Java, C#, C/C++, Swift, Kotlin, SQL, Go, R

**Frameworks:** FastAPI, Django, Flask, React.js, Node.js, Express.js, AngularJS, SwiftUI, React Native, .NET

**Databases:** PostgreSQL, MySQL, MongoDB, Redis, Firebase Firestore,

**Cloud/DevOps:** AWS (EC2, S3, Lambda, RDS, API Gateway, CloudWatch), Google Cloud Platform (Cloud Run, Cloud Build, Compute Engine, Cloud Storage, Cloud DNS), Microsoft Azure (App Services, Functions, Blob Storage, CosmosDB), Docker, Kubernetes, GitHub Actions

**AI/ML:** LangChain, LangGraph, TensorFlow, Keras, scikit-learn, pandas, NumPy, Prompt & Context Engineering

**Tools:** Git, REST APIs, GraphQL, WebSockets, OAuth, JWT, Nginx, Gunicorn, pytest, Jest, SonarQube, DataDog