Rudra Patel

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EDUCATION

Lewis University | GPA: 3.9/4.0 *Romeoville, IL*

B.S. Computer Science, Artificial Intelligence Concentration *Expected May 2026*

- Relevant Coursework: Data Structures & Algorithms, Software Engineering, Database Systems, Object-Oriented Programming, Artificial Intelligence, Machine Learning, Linear Algebra

EXPERIENCE

Freelance Software Engineer May 2025 – July 2025

Hometown Liquor *Braceville, IL*

- Doubled monthly revenue to **$40,000** by building and deploying a full-stack e-commerce platform managing **750+** products using **React, TypeScript, FastAPI** and **PostgreSQL**
- Increased customer conversion by **25%** through implementation of mobile-first UX and search-optimized product discovery features
- Reduced database load by **30%** by engineering high-performance Algolia search pipeline achieving **sub-200ms** query latency across the catalog
- Engineered a multi-service backend with **RESTful APIs** and comprehensive testing ensuring reliability across services handling real-time inventory and orders.

PROJECTS

ExoViz | *React, TypeScript, Java, Python, PostgreSQL, Three.js, Docker* October 2025 - Present

- Architecting a full-stack platform to process and visualize **5,000+ NASA exoplanet records**, integrating AI-driven habitability scoring and interactive 3D rendering
- Engineering a 3-service backend **(Spring Boot, Fast API, Redis)** to target a **30%** reduction in database load and **sub-200ms** query times through caching and optimization
- Developing a Scikit-learn ML pipeline to classify planet habitability, targeting **85%+** model accuracy for deployment via a dedicated microservice API
- Building a Three.js visualization engine designed to sustain **60fps performance** using instanced rendering and level-of-detail (LOD) optimizations

QuizMaster | *React, JavaScript, Node.js, Tailwind CSS, GCP, Cloud Firestore, Agile* August 2025 - Present

- Cut application load times by over **80%** from **(886ms to 147ms)** by leading a 4-person team in a full-scale architectural refactoring of a **7,000-line** React codebase
- Reduced codebase complexity by **33%** by implementing a unified design system and state management, enabling faster and more consistent feature development
- Enhanced maintainability and scalability by building a service layer architecture, successfully migrating business logic from **40+** components to establish a clear separation of concerns
- Optimized Firebase backend reducing API calls by **83%** and dashboard load times by **6x (less than 5s)** through query batching and intelligent caching

MasterChef Claude | *React, Claude API, Tailwind CSS, Firebase, Docker, AWS* April 2025 - May 2025

- Built AI-powered recipe platform using **Claude API, React, Node.js**, delivering custom recipes within **5s** through optimized prompt engineering and async request handling
- Engineered **3-layer** error handling with input validation and real-time feedback ensuring reliable AI responses
- Simplified deployment with Docker containerization, reducing deployment time by **80%** through automated CI/CD pipeline on **AWS** for faster feature releases

TECHNICAL SKILLS

Languages: Python, Java, JavaScript/TypeScript, SQL, HTML/CSS
Frameworks & Libraries: React, Spring Boot, FastAPI, Node.js, Express.js, Tailwind CSS, Scikit-learn
Databases & Caching: PostgreSQL, Firebase, MongoDB, Redis, Supabase, Database Design & Optimization
Cloud & DevOps: AWS, Docker, GCP, Azure, CI/CD, GitHub Actions
Tools & Concepts: REST APIs, Microservices, JWT, Agile, Git, Figma, Three.js