

# SHREY PATEL

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## Education

**Bachelor of Science**, Computer Science  
*Virginia Tech*

**May 2025**  
GPA: 3.86

## Experience

### Full-Stack Software Engineer Intern

**Aug 2024 – Dec 2024**

*Peraton*

*Blacksburg, VA*

- Developed Java-based microservices and REST APIs to enable real-time satellite telemetry services across 3+ ground stations.
- Transformed 20+ React components into reusable styled components, reducing future UI development time.
- Refactored existing API structure for modem and switch telemetry endpoints, achieving 17% lower network overhead.
- Implemented subsystem-specific RabbitMQ channels as part of a broader system re-architecture to reduce message queuing latency by 23%.

### Software Engineer Intern

**May 2024 – Aug 2024**

*CACI*

*Reston, VA*

- Reduced query execution time by 15% on transaction tables by implementing composite indexing and partitioning strategies.
- Accelerated reporting turnaround from days to minutes by developing dynamic UI dashboards which enabled self-service access to financial and user activity data.
- Designed Python pipelines to process 133K+ Active Directory records weekly, replacing legacy PowerShell scripts and improving runtime by 88%.

### Full-Stack Software Engineer Intern

**May 2023 – Aug 2023**

*Ventura*

*Reston, VA*

- Deployed scalable RESTful APIs to handle user interaction and content delivery for 1,000+ daily users, incorporating optimized query handling and caching techniques.
- Authored 30+ tests mocking API calls and components, raising code coverage from 67% to 97% post-rewrite.
- Established performance testing suit integrated with Jenkins that uncovered excess Kubernetes resource allocations and cut CPU by 25% alongside memory and pods by 15%.
- Integrated OAuth 2.0 and multi-factor authentication using Azure AD B2C to secure enterprise login workflows.

## Projects

### Personal Portfolio Website [↗](#) | *NextJS, LangChain, Astra DB, Vercel AI SDK, Upstash Redis*

**Aug 2025 – Present**

- Built an AI-powered chatbot that answers natural language questions about portfolio content.
- Orchestrated **retrieval-augmented generation (RAG)** through **LangChain** and **Vercel's AI SDK** with **GPT-5-nano**.
- Designed a **AstraDB** vector database to store **OpenAI's text-embeddings** of portfolio data for semantic search.
- Implemented cache-aware querying with a **serverless Redis** instance to reduce latency and operational costs.

### Jobhub.cs.vt.edu [↗](#) | *React, Flask, PostgreSQL, Docker, Kubernetes*

**Capstone Project**

- Enhanced Flask endpoints in Python, expanding parameters and enforcing JWT RBAC for confidential data.
- Deployed workloads on Virginia Tech's **Kubernetes** platform via **GitLab CI/CD** and **Docker**, ensuring reliable scaling.

### House.inc [↗](#) | *React, Spring Boot, MySQL, Azure AI*

**VTHacks 12**

- Designed service layer components within a client-server architecture for housing recommendations.
- Integrated **Azure AI** for natural language query parsing, enabling contextual housing search via a conversational assistant.

## Leadership/Extracurricular

FIRST Robotics Mentor

**Aug 2022 – Present**

Undergraduate Teaching Assistant | *CS4604 Database Management Systems*

**Jan 2024 – May 2024**

Resident Advisor

**Jan 2022 – May 2023**

## Technical Skills

**Languages:** Java, Python, TypeScript/JavaScript, C/C++, SQL, NoSQL

**Frontend/Backend:** Spring, NodeJS, Flask, React, Angular, Redis, LangChain, RabbitMQ, PostgreSQL, MySQL, MongoDB, Tailwind, JUnit, Mockito, Pytest, Mocha, Chai

**Cloud/DevOps:** AWS(Lambda, EC2), Azure(AI, AD, cache), Git, Docker, Kubernetes, Jenkins