

# HARSH RAJESH SHAH

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## EDUCATION

### University of Southern California

*M.S. in Computer Science - Coursework in Algorithms, Robotics, Distributed Systems*

Los Angeles, CA

### JSS Science and Technology University

*B.E. in Computer Science · GPA 3.7*

Aug. 2025 – May. 2027

Mysuru, India

Aug. 2019 – Aug. 2023

## PROFESSIONAL EXPERIENCE

### Fidelity Investments

*Software Engineer*

Bengaluru, India

Aug. 2023 – June 2025

- Improved **system scalability and performance** by migrating legacy Java-based APIs to Python's FastAPI, resulting in a **40%** reduction in response times and smoother experience for high-traffic workloads
- Architected a secure authentication and authorization flow using **Microsoft MSAL**, introducing token-based caching and **adaptive SSO mechanisms** that cut login latency by **30%** while strengthening enterprise security compliance
- Directed the end-to-end migration from **Amazon EC2 to Amazon EKS**, containerizing microservices and implementing CI/CD pipelines to boost scalability by **3 times**, halve deployment time, and streamline continuous delivery operations
- Engineered a **proof-of-concept converter** to automatically translate **Informatica SQL mappings into SnapLogic pipelines**, automating **80%** of manual ETL migration tasks and validating a reusable framework for enterprise-wide adoption
- Developed a **Python-native ETL framework** to synchronize data across heterogeneous systems, eliminating third-party connectors and achieving fully automated, high-throughput data transfers with greater maintainability and fault tolerance

### Fidelity Investments

Bengaluru, India

*Software Engineering Intern*

Feb. 2023 – June 2023

- Developed interactive **Power BI dashboards** for business users to monitor Data Quality Jobs and related components, enhancing visibility, minimizing manual checks, and streamlining performance tracking across teams
- Developed a centralized **Python API marketplace** for frequently used data requests, enabling users to **fetch data via validated access tokens** and extend **common base classes** for seamless integration into custom applications
- Designed and implemented a **frontend interface using Angular** to automate previously manual workflows, improving usability, reducing effort, and enabling faster, visual data-driven decision-making for business users

### GE Healthcare

Bengaluru, India

*Research Intern*

Aug. 2022 – Nov. 2022

- Developed an application to automatically recognize actionable text in error logs and service manuals using **custom Named Entity Recognition (NER) pipelines** and reducing manual analysis time by over **60%**
- Collaborated with the GE Healthcare team to automate service workflows for knowledge buildup, cutting manual document review efforts by **50%** and enabling engineers to retrieve relevant information in seconds instead of minutes

## PROJECTS

### Automated Identification of Medical Prescriptions

| *FastAPI, Streamlit, spaCy, AWS*

Jan. 2023 – June 2023

- Built machine learning models using spaCy to **extract entities** (drugs, dosage, doctors, diseases) from digital prescriptions
- Created an interface using **Streamlit** to upload prescriptions and highlight key entities, improving clarity and usability
- Added drug-alternative suggestions using web scraping to support safer, more informed decision-making for users

### JSSSTU Official Placement Portal

| *FastAPI, React, PostgreSQL, AWS* | [Link](#)

Jan. 2022 – May 2022

- Built and maintained the backend and database for the official placement portal, supporting over **2,500** students
- Developed **80+** RESTful APIs using **FastAPI** to support registration, resume management, feedback, and admin analytics; additionally wrote the website's **UI in React** and architected the underlying database to ensure seamless integration
- Deployed and scaled on AWS (EC2, RDS, S3, API Gateway, CloudFront) for high availability and performance

## TECHNICAL SKILLS

**Programming:** Python, C, C++, JavaScript, TypeScript, Java, SQL

**Frameworks/Tools:** FastAPI, Angular, React, Celery, SQLAlchemy, ROS, PyTorch, LangChain, spaCy, Qiskit, Agile/Scrum, Jira

**Cloud/Databases:** AWS, Azure, PostgreSQL, MongoDB, Redis

**DevOps:** Git, Docker, Kubernetes, Jenkins