

RUTWIK PATEL

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EDUCATION

University of Southern California, Los Angeles, CA

August 2023 - May 2025

Masters of Computer Science

GPA: 3.83/4.0

CourseWork: Analysis of Algorithm, Database Systems, Web Technology, NLP, Information Retrieval, MLDS

University of Mumbai, Mumbai, India

August 2019 - May 2023

Bachelor of Technology in Information Technology

GPA: 3.8/4.0

CourseWork: Data Structures, DBMS, Operating Systems, Machine Learning, Software Engineering, Computer Networks

EXPERIENCE

Full Stack Developer Intern

July 2024 - Present

World Salon

Los Angeles, CA

- Led end-to-end development of business portal, admin portal, and event creation flow using the MERN stack, managing the implementation of 15+ key features and improving web application performance by up to 60%
- Integrated a secure Stripe payment system and Airmeet platform, enabling 20+ paid virtual events and increasing user engagement by 40% while streamlining the end-to-end event registration flow
- Built and integrated 30+ RESTful APIs in collaboration with backend teams, optimizing data flow and contributing to a 35% improvement in UI responsiveness and deploying the application on AWS S3 and CloudFront

Research Assistant

February 2024 - Present

USC Marshall School of Business

Los Angeles, CA

- Scraped 10 years of SP1500 sustainability reports, then used python and OpenAI prompt engineering to extract energy transition insights from 15,000+ PDFs, boosting processing efficiency by 70% using multi-threading
- Automated data extraction from Orbis DB using Selenium, retrieving shareholder reports from 1.8M+ companies and reducing manual collection time by over 85%

Software Development Engineer Intern

May 2022 - July 2022

Smart Consultant

Mumbai, India

- Designed and implemented 10+ core features for an management platform for a client, leveraging Python, Django, Angular, AWS EC2, and SQL-based databases to ensure seamless integration and support 1,000+ daily transactions
- Improved web application performance by 40% using Docker, AWS S3 and optimization techniques including caching with AWS S3, database indexing, lazy loading, and GZIP compression

ACADEMIC PROJECTS

Stock Insight Application ([Angular Website](#), [iOS App](#)) ([Github](#)) | Angular, Swift, GCP, Express, MongoDB

- Deployed a real-time stock search web application on Google Cloud Platform using the MEAN stack, integrating Finnhub and Polygon APIs to deliver accurate financial data with 100+ queries tested and 97% response accuracy
- Designed responsive UI, achieving 96 Lighthouse score and reducing load time by 60% through optimized rendering
- Built a complementary iOS application in Swift, extending platform functionality to mobile and maintaining feature parity with the web application

Streamlit-Based RAG QA App ([Github](#)) | Streamlit, LangChain, Chroma, OpenAI Embeddings

- Built a Streamlit RAG QA tool with LangChain, Chroma (Pinecone-compatible) and OpenAI Embeddings: ingested PDF/DOCX/TXT files, split them into 512-token chunks, and enabled sub-second semantic search over private document corpora
- Engineered a LangChain summarization pipeline with parallel chunk processing (map-reduce style), reducing embedding API calls by 30% and cutting average query latency by 40%

Cataract detection using Explainable AI (XAI) ([Github](#)) | Python, CNN, XAI libraries, Streamlit

- Led a team of 3, built a cataract detection project in Python with a CNN model for cataract prediction with 97% accuracy and XAI techniques to determine why CNN model is producing certain results
- Created a model incorporating GradCAM for detecting and localising cataracts in eye, presented project findings and progress to stakeholders, bridging gap between technical details and non-technical stakeholders

TECHNICAL SKILLS

Programming Languages

Python, Typescript, JavaScript, Swift

Databases

PostgreSQL, MySQL, MongoDB, Chroma, Pinecone, Redis, Neo4j, Elasticsearch

Web Development

React, Angular, Flask, Node.js, Express.js, RestAPI, Django, HTML, CSS, Bootstrap

ML Libraries

Pandas, Scikit-learn, Keras, TensorFlow, PyTorch, bs4, Seaborn, LangChain, Beautiful Soup

DevOps & Tools

Git, AWS, GCP, Docker, Jira, Linux, Selenium, Power BI