

# AARUSH VERULKAR

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## OBJECTIVE

AI/ML-focused full stack developer skilled in building intelligent, data-driven web applications and scalable backends. Experienced with FastAPI, React, and AWS; passionate about applying AI and analytics to optimize real-world supply chain and operational workflows.

## EDUCATION

**Master of Science in Computer Science**, University of Southern California Aug 2024 - May 2026  
Relevant Coursework: Applied Natural Language Processing, Software Architecture, Machine Learning

**Bachelor of Engineering in Computer Engineering**, University of Mumbai Aug 2020 - Jul 2024

## SKILLS

<b>Languages</b>	Python, TypeScript, JavaScript, SQL, C++
<b>AI/ML</b>	PyTorch, TensorFlow, Scikit-learn, Hugging Face, LangChain, ONNX, RAG pipelines
<b>Backend</b>	FastAPI, Django, Node.js, REST, GraphQL, Microservices
<b>Frontend</b>	React, Next.js, Tailwind CSS, HTML/CSS
<b>Data &amp; Pipelines</b>	PostgreSQL, MySQL, MongoDB, Redis, Apache Airflow, Pandas/NumPy
<b>Cloud/DevOps</b>	AWS (EC2, S3, RDS, Lambda), Docker, GitHub Actions, CI/CD, Linux

## EXPERIENCE

**Graduate Research Assistant** May 2025 - Sep 2025  
University of Southern California *Los Angeles, CA*

- Built ML-powered conversational APIs using FastAPI and AWS EC2, cutting latency by 60%.
- Integrated Flan-T5, Llama, and Zephyr transformer models via ONNX optimization for scalable low-latency inference.
- Automated data pipelines (Airflow + FAISS) for ingesting and indexing 26K+ dialogue sessions for RAG retrieval.
- Collaborated with engineers and researchers on CI/CD testing and reproducible deployment workflows.

**Software Development Intern** Jun 2023 - Jul 2023  
BMH Technologies *Pune, India*

- Built Python microservices for real-time vehicle tracking with sub-second latency and improved accuracy by 25%.
- Automated SQL pipelines for telemetry data preprocessing, saving 40+ hours weekly in manual reporting.
- Created analytics dashboards (Plotly + REST APIs) for monitoring anomalies and optimizing fleet routes.

## PROJECTS

**Quantfolio – AI-Driven Stock Analytics Platform** [Live Demo](#)

- Developed FastAPI + React web app for real-time market analytics and ML-based forecasting indicators.
- Implemented WebSocket data streaming and Redis caching to achieve 75% faster data refresh rates.

**DormSC – Full Stack Housing Platform** [Live Demo](#)

- Built scalable Next.js + Firebase platform for student housing with auth, validation, and personalized filters.
- Integrated Mapbox APIs for commute-based searches and location clustering for faster lookups.

**Intellihealth – Blockchain-Based EHR with ML Integration** [GitHub](#)

- Developed a Django + Solidity system with audit logging and CNN-based triage ML module for early diagnostics.
- Implemented secure role-based access for 100+ test users ensuring HIPAA-compliant data management.

**Lumiere XAI – Explainable Movie Recommendation System** [GitHub](#)

- Created explainable recommender using Node2Vec on Neo4j graphs integrated with FastAPI + React.
- Delivered sub-200 ms response time through optimized vector similarity search APIs.

## PUBLICATIONS

- Intellihealth – A Secured Decentralized EHR System using Blockchain.**
- IEEE International Conference on Big Data and Distributed Systems (ICBDS), Oct 2024. ([View Publication](#))