

AARUSH VERULKAR

+1(213) 301-5734 ◊ Los Angeles, CA

verulkar@usc.edu ◊ linkedin.com/in/aarush-verulkar ◊ github.com/Aarush-Verulkar-USC

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
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SKILLS

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

EXPERIENCE

Graduate Research Assistant University of Southern California	May 2025 - Sep 2025 <i>Los Angeles, CA</i>
<ul style="list-style-type: none">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 BMH Technologies	Jun 2023 - Jul 2023 <i>Pune, India</i>
<ul style="list-style-type: none">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
<ul style="list-style-type: none">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
<ul style="list-style-type: none">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
<ul style="list-style-type: none">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
<ul style="list-style-type: none">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](#))