

ANIRUDH BHATTACHARYA

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EDUCATION

University of Southern California, Master of Science – Computer Science	May 2025
University of Mumbai, Bachelor of Technology – Computer Engineering	July 2023

WORK EXPERIENCE

University of Southern California – Marshall School of Business	Los Angeles, CA, USA
Software Engineer	October 2024 – Present

- [MSME AI Tool](#) | **Tech Stack:** Python, Postgres, React.JS, FastAPI, Jenkins, Docker
- Develop scalable Agentic AI system for MSME marketing, growing operational efficiency by 15% through automated workflows.
 - Build fault tolerant, unit/integration tested service to refine decision-making by 30%, automate deployment through CI/CD.
- [Transmission Line Damage Modeling](#) | **Tech Stack:** Python, ArcGIS, React.JS, Leaflet
- Designed, validated fire-driven transmission line damage models, improving prediction accuracy by 30% over Fragility curves.
 - Developed Public Safety Power Shutoff threshold model, reducing asset damage by 15% through cross-functional collaboration.

ViyaMD	Los Angeles, CA, USA
Machine Learning Engineering Intern	May 2024 – July 2024

- Tech Stack:** Python, PyTorch, RAG, Qdrant
- Developed communication platforms connecting doctors, patients, enhancing healthcare delivery, improving patient outcomes.
 - Spearheaded construction of internal typing functionalities to improve evaluation metrics, boosting developer efficiency by 5%.
 - Optimized ingestion pipeline’s support for healthcare guidelines, achieving 90% F1-score, reducing loss for accurate analysis.

University of Southern California – Advanced Composites Simulation Lab	Los Angeles, CA, USA
Machine Learning Student Researcher	January 2024 – December 2024

- Enhanced aircraft safety by 30% through integrating deep learning models for void detection in aerospace materials (COSB).
- Fine-tuned computer vision models on large-scale 3D micro-CT data, achieving 93% detection score, reducing false negatives.

University of Southern California – Information Technology Program	Los Angeles, CA, USA
Teaching Assistant – ITP 168	March 2024 – May 2024

- Taught MATLAB to 150+ undergraduates, providing tailored support to boost technical skills and achieve learning goals.
- Designed, evaluated coursework, providing actionable feedback improving student performance, ensure consistent assessment.

KEY PROJECTS

QuestDB: Automated, Lightweight Snapshots	October 2024 - December 2024
Tech Stack: Java, Database Internals, Docker	

- Reduced time-series database data loss by 50% with automated lightweight snapshots, boosting reliability and data integrity.
- Improved database performance by 40% on unstable IoT hardware in manufacturing through optimizations, enhancing stability.

Path Planning with Reinforcement Learning	January 2024 - May 2024
Tech Stack: Python, Microsoft AirSim, GCP, OpenAI Gym, OpenCV, PyTorch	

- Implemented reinforcement learning training framework enabling real-time pathfinding for UAVs, enhancing mission efficiency.
- Co-developed reward functions based on 3D Image, LIDAR sensors to search 60% faster than standard systems with 0 collisions.

Dronebusters: Hacking for Defense	January 2025 - May 2025
Tech Stack: MATLAB, Acoustic Sensors	

- Modeled search, kill algorithms in C-sUAS for US Army, enabling a 95% reduction in soldier injuries by optimizing navigation.
- Conducted stakeholder interviews, customer discovery using MMC to define clear requirements, achieving operational goals.

PUBLICATIONS

Feedback Based Telecom Churn Prediction with Machine Learning	December 2022
Institute of Electrical and Electronics Engineers, ICAST 2022 doi: 10.1109/ICAST55766.2022.10039530	

CORE COMPETENCIES AND SKILLS

Languages: Python, Java, JavaScript, C++, C, C#, MATLAB, Ruby	Web: FastAPI, Django, Flask, React.JS/TS, Node.JS/TS, .NET
AI: PyTorch, Hugging Face, Langchain, Tensorflow, SKLearn	Databases: Postgres, SQLite, Oracle, QuestDB, MongoDB
Systems: Docker, Linux, GCP, AWS, Supabase	Tools: Kubernetes, Hadoop, Spark, Hive, git, n8n, nmap, Redis