

ANIRUDH BHATTACHARYA

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EDUCATION

University of Southern California, Master of Science – Computer Science, GPA: 3.57 / 4	May 2025
University of Mumbai, Bachelor of Technology – Computer Engineering, GPA: 9.36 / 10	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, Instagram, Postgres, RAG, React.JS, FastAPI, PGVector, Jenkins, Docker, Gemini	
<ul style="list-style-type: none">Develop scalable Agentic AI system for MSME marketing, growing operational efficiency by 15% through automated workflows.Coordinate with stakeholders to design fault-tolerant unit/integration-tested CI/CD services, refining decision-making by 30%.	
Transmission Line Damage Modeling (link) Tech Stack: Python, ArcGIS, React.JS, Leaflet	
<ul style="list-style-type: none">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, LLMs, RAG, GPT4, Qdrant, PDF Parsing	
<ul style="list-style-type: none">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
Tech Stack: Python, PyTorch, T4 GPU, Computer Vision, Google DeepLab	
<ul style="list-style-type: none">Enhanced aircraft safety by 30% through integrating deep learning models for void detection in aerospace materials (COSB).Increased void detection accuracy to 93% by fine-tuning advanced deep learning algorithms on 3D micro-CT imaging data.	
University of Southern California – Information Technology Program	Los Angeles, CA, USA
Teaching Assistant – ITP 168	March 2024 – May 2024
<ul style="list-style-type: none">Taught MATLAB to 150+ undergraduates, providing tailored support to boost technical skills and achieve learning goals.Created and graded assignments, delivering clear feedback to ensure accurate assessment, improve academic performance.	

PROJECT EXPERIENCE

QuestDB: Automated, Lightweight Snapshots (link)	October 2024 - December 2024
Tech Stack: Java, Database Internals, Docker	
<ul style="list-style-type: none">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 (link)	January 2024 - May 2024
Tech Stack: Python, Microsoft AirSim, GCP, OpenAI Gym, OpenCV, PyTorch	
<ul style="list-style-type: none">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	
<ul style="list-style-type: none">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 (Paper Link)	December 2022
Institute of Electrical and Electronics Engineers, ICAST 2022 doi: 10.1109/ICAST55766.2022.10039530 (Source Code)	

CORE COMPETENCIES AND SKILLS

Languages: Python, Java, JavaScript, C++, C, C#, MATLAB, Ruby	Web: FastAPI, Django, Flask, React.JS, Node.JS, .NET
AI: PyTorch, Hugging Face, Langchain, Tensorflow, SKLearn	Databases: Postgres, SQLite, Oracle, QuestDB, MongoDB
Systems: Docker (UNIX), GCP, GCP, git, Kubernetes, AWS EC2	Tools: Kubernetes, Hadoop, Spark, Hive, PGVector