ANIRUDH BHATTACHARYA

Los Angeles, CA, USA | anirudhbhattacharya1@gmail.com | +1 (213) 5747034 | LinkedIn | GitHub

EDUCATION

University of Southern California — Los Angeles, CA, USA
Master of Science – Computer Science, GPA: 3.5 — May 2025

University of Mumbai — Mumbai, MH, India
Bachelor of Technology – Computer Engineering. GPA: 9.3/10 — July 2023

WORK EXPERIENCE

University of Southern California – Information Technology Program — Los Angeles, CA, USA
Teaching Assistant – ITP 168 — March 2023 – Present

- Creating, grading exams and assignments of 100+ students in an undergraduate level course on MATLAB.

University of Southern California – Advanced Composites Simulation Lab — Los Angeles, CA, USA
Machine Learning Researcher — January 2023 – Present
Tech Stack: *Python, PyTorch, PyTorch Geometric, Graph Neural Networks, T4 GPU*

- Optimizing safety and performance of aircraft using Artificial intelligence to detect voids in aerospace materials (COSB).
- Improving void detection accuracy to 90%+ by processing 3D image data with state-of-the-art algorithms on HPC systems.
- Implementing novel research techniques with unsupervised deep learning performed on 3D micro-CT image data.

Connect Club Pvt Ltd — Mumbai, MH, India
Software Engineering Intern – Machine Learning and Data Science — June 2021 - July 2021
Tech Stack: *Python, Scikit-learn, Matplotlib, Seaborn, Numpy Pandas, Neural Networks*

- Implemented efficient preprocessing on advertising data, producing 20% improvement in data inference, modeling processes.
- Employed data visualization to craft representations with 10,000 datapoints, aiding data analysis, management processes.
- Through data cleaning, feature engineering processes, achieved accuracy rate of 90%+ in designing machine learning models.

Chance to Give — Hyderabad, TN, India
Software Engineering Intern - Web Development — July 2021 - October 2021
Tech Stack: *JavaScript, HTML, CSS, GitHub, Git, SQL*

- Spearheaded a collaborative effort with backend, database teams to develop a website, resulting in a 25% increase in reach.
- Ensured maintenance of standards by conducting peer reviews of code, applying Waterfall development methodologies.
- Led a team during Chance's Climate Change movement through awareness campaigns, envisioned updates to UI of site.

SOFTWARE ENGINEERING PROJECT EXPERIENCE

Feedback Based Telecom Churn Prediction with Machine Learning *(link)* — July 2022 - May 2023
Tech Stack: *Python, React.JS, JavaScript, Scikit-learn, REST APIs, Django ORM, SQLite, Docker, TextBlob, Visual Studio, git, Scrapy,*

- Spearheaded a collaborative research-driven project to improve prediction rates by 6% for churn in telecom industry.
- Authored a proposal published in IEEE Xplore *(link),* with improvements upon systems in machine learning and big data.
- Improved churn accuracy by 5% using boosted machine learning model in a robust, scalable full-stack system with SOA.
- Facilitated collaboration through Agile (scrum), peer reviews and unit and integrated tested individual modules.

Drowsy Driver Detection *(link)* — July 2021 - December 2021
Tech Stack: *Python, Keras, Tensorflow, OpenCV, Visual Studio, NVIDIA T4*

- Pioneered collaborative efforts to develop autonomous system for detecting driver drowsiness, attaining accuracy rate of 95%
- Engineered facial detection with accuracy of 96% and drowsiness detection 94%, enabling seamless automation through APIs.
- Successfully achieved audio-alerted detection time of 2s, tested unit, integration in TDD, integrated into CI/CD workflow.

Path Planning with Reinforcement Learning — January 2024 - May 2024
Tech Stack: *Python, OpenAI, Microsoft AirSim, Google Cloud Platform, OpenAI Gym, OpenCV, NVIDIA T4*

- Developing algorithm to dynamically plan drone paths in real-time, utilizing 3D image processing, reinforcement learning.
- Harnessing, capabilities of High-Performance Computing for model development, benchmarking offline, online platforms.
- Integrating sensor fusion to enhance situational, and obstacle avoidance for safe navigation in complex environments.

CORE COMPETENCIES AND SKILLS

Languages: Python, C#, Java, R, C, JavaScript, C++, Go, TypeScript, Scala
Web: React.JS, Node.JS, Express.JS, Angular, Vue, Redux, Vite
AI: PyTorch, Tensorflow, CUDA, Caffe, MxNET, TVM, Hugging face
Databases: MySQL, Postgre, MongoDB, Oracle, Cassandra
Systems: UNIX/Linux, AWS EC2, Azure, GCP, dbt, git, Airflow, Jira
Software: Kubernetes, Hadoop, Spark, Hive, Kafka, bigQuery
Frameworks: .NET, Django, Flask, Kotlin, Swift (iOS), Spring Boot, AJAX
Others: HDFS, HBase, Phoenix, Redis, Databricks, Rust, ggplot