

ANIRUDH BHATTACHARYA

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EDUCATION

University of Southern California Master of Science – Computer Science	Los Angeles, CA, USA May 2025
University of Mumbai Bachelor of Technology – Computer Engineering	Mumbai, MH, India July 2023

WORK EXPERIENCE

University of Southern California – Information Technology Program Course Grader – ITP 168	Los Angeles, CA, USA March 2023 – Present
<ul style="list-style-type: none">Grading exams and assignments of 100+ students in an undergraduate level course on MATLAB.	

University of Southern California – Advanced Composites Simulation Lab Machine Learning Researcher	Los Angeles, CA, USA January 2023 – Present
<ul style="list-style-type: none">Improving performance and safety by implementing 3D-optimized artificial intelligence algorithms to detect voids in aerospace materials using PyTorch and PyTorch Geometric for Graph Neural Networks.Improving void detection accuracy in composite oriented strand board (COSB) materials up to 90%+ by processing micro-CT imagery detected data, solving permutational variance, rotational invariance with state-of-the-art algorithms on HPC systems.Augmenting domain of research from 2D to 3D analysis of voids in COSB with captured and generated imagery.	

Connect Club Pvt Ltd Software Engineering Intern – Machine Learning and Data Science	Mumbai, MH, India June 2021 - July 2021
<ul style="list-style-type: none">Streamlined data inference, modelling and analytics by 20% by preprocessing data integrating Numpy and Pandas in Python.Generated data visualizations with Matplotlib, Seaborn for over 10,000 datapoints, aiding data analysis, management.Engineered 90%+ accuracy in designing neural network-based machine learning models on cleaned data.	

Chance to Give Software Engineering Intern - Web Development	Hyderabad, TN, India July 2021 - October 2021
<ul style="list-style-type: none">Constructed site with JavaScript, HTML, CSS in collaboration with backend, database teams, ensuring 25% increase in reach.Upheld performance through peer reviews of code, collaborating through Waterfall, managed hosting through GitHub pages.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
<ul style="list-style-type: none">Spearheaded a collaborative research-driven project to improve prediction rates by 6% for churn in telecom industry.Authored a paper submitted to IEEE Xplore (link) proposing a solution with upgraded model and innovated system architecture, building upon existing research in the fields of machine learning and big data.Augmented accuracy to 90% leveraging scikit-learn built model, 81% accurate NLP module in scalable full-stack system with Django, React.JS, Scrapy for data mining, cooperation through Agile (scrum), peer reviews through Visual Studio, git.Fulfilled SOA through RESTful API, Django ORM for pipelining through SQLite DDL defined database, containerizing by Docker.	

Drowsy Driver Detection (link)	July 2021 - December 2021
<ul style="list-style-type: none">Pioneered development of an autonomous system to detect driver drowsiness with 95% accuracy, built in collaboration through CI/CD pipeline employing facial detection and analysis in test driven environment.Formulated 96% accurate facial image and video detection in non linear model through OpenCV’s cascade models, 94% accuracy in through Tensorflow’s CNN with 5 layers on T4 GPU with transformation, automated workflow through Keras.Achieved 2s detection time with audio alerts, refined models for multithreading, unit, integration tested through Visual Studio.	

Path Planning with Reinforcement Learning	January 2024 - May 2024
<ul style="list-style-type: none">Developing algorithm to plan paths of drones in real time with 3D image processing (OpenCV) and reinforcement learning.Leveraging P100 GPU on Google Cloud Platform (GCP) to facilitate model development using Microsoft AirSim as base model.Implementing OpenAI’s Gym toolkit for developing Machine Learning models for benchmarking with offline, online systems.	

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
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: Istio, Ruby on Rails, IoT, Redis, Memcached, Rust