ADITYA PRASANNA MOGARE

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EDUCATION

University of Southern California, Los Angeles **August 2024 - May 2026**
Master of Science in Computer Science **GPA 3.4/4.0**
Courses: Deep Learning, Natural Language Processing, Analysis of Algorithms
Thakur College of Engineering and Technology, University of Mumbai, India **June 2020 - June 2024**
Bachelor of Engineering in Computer Engineering **GPA 9.63/10**
Courses: Algorithms & Data structures, Computer networks, Operating Systems, Database Management

SKILLS

- Programming Languages: Python, C++, JavaScript, Java, HTML, CSS, SQL
- Frameworks & Libraries: React.js, Angular, Express, Node.js, A-frame, Flask, TensorFlow, Scikit-Learn, Pandas, NumPy
- Databases: MongoDB, MySQL, PostgreSQL, SQLite
- Dev Tools & Platforms: Visual Studio Code, Git, GitLab, GitHub, Docker, Kubernetes, Jenkins, AWS (EC2, S3, Lambda)
- Machine Learning: K-means, Logistic Regression (LR), Gradient Boosting Decision Trees (GBDT),

PROFESSIONAL EXPERIENCE

INTERDEPENDENT, Onsite | Software Development Intern **May 2025 – August 2025**

- Worked directly with the founder to translate product ideas into practical, production-ready software implementations, accelerating feature delivery and enabling rapid iteration
- Facilitated interactivity on the Miro platform by building RESTful APIs using Flask, JavaScript, and webhooks, enabling real-time collaborative features.
- Developed full-stack embedded applications with React and Miro's Web SDK, improving user engagement and app functionality
- Fine-tuned a **LLM (Large Language Model)** for automated screenplay analysis using Transformers and Flask, improving feedback quality.
- Built an **AI-driven budgeting and scheduling tool** using screenplay data inputs, automating planning workflows for creative production

Research Assistant | USC Viterbi School of Engineering **Feb 2025 – June 2025**
Prof. Anita Penkova | *Project: Diabetic Retinopathy*

- Engineered and refined OCTA image preprocessing workflows, including normalization, noise reduction, and data augmentation, improving image quality and boosting model performance with a +5% AUC increase on baseline CNN models
- Designed deep learning architectures (VGG, Inception, ResNet) for multi-class classification of Diabetic Retinopathy using TensorFlow and Scikit-learn, achieving 92% validation accuracy
- Utilized AWS EC2 and Docker for remote experimentation and model deployment

HiringTek, Remote | Full Stack Web Developer – Web Development A.I. Intern. **Aug 2022 - Aug 2023**

- Developed OpenAI-powered Unique Question Generator and Validator with Flask and MongoDB integration, which led to delivering 10× content throughput and enabling on-demand question creation across multiple domains with minimal human input.
- Managed Kubernetes configurations and automated startup scripts across 4 environments, resulting in faster deployment cycles **(reduced by 25%)** and consistent system behavior
- **Contributed to the Test Automation** pipeline by managing 30+ QA scripts and ensuring 95 %+ test coverage for mission-critical modules like QA Bank, Evaluation, and Candidate workflows.

ACADEMIC PROJECTS & RESEARCH PAPER

Legal QA System with Fine-Tuned LLMs and RAG

- Deployed a scalable legal domain question-answering (QA) system by fine-tuning state-of-the-art open-source LLMs (e.g., LLaMA, Mistral) using Low-Rank Adaptation (LoRA), achieving a 4× reduction in GPU memory footprint and enabling cost-effective model training and deployment.
- Engineered end-to-end ML pipelines to ingest, preprocess, and index 100K+ U.S. legal documents, implementing semantic search vector stores and SentenceTransformers embeddings, resulting in sub-second document retrieval performance

EcomForecast: Empowering E-Commerce through Advanced Analytics and Forecasting

- **Developed EcomForecast**, a platform using advanced time series models (SMA, EMA, WMA, LSTM, GRU) for precise sales forecasting.
- Qualified for the final round of presentation for International Confluence on Startups and Innovation (ICCSI-2023 CREST IITM) at IIT Madras Campus (December 13-15, 2023)

Building a Virtual Reality-Based Framework for the Education of Autistic Kids

- Implemented the research project under the National Initiative Program as per the Initiatives of the Ministry of Human Resource Development and AICTE using **A-Frame**, **JavaScript**, and **Neural Style Transfer**.
- Designed immersive learning modules for children with **Autism Spectrum Disorder (ASD)**, improving focus and engagement.