Aditi Agrawal

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Education

University of California, Davis, USA	Sept 2024 – March 2026

Master's in Computer Science | **CGPA: 3.91/4.0**

MIT-WPU, Pune, India	Sept 2020 – June 2024

Bachelor of Technology in Computer Science and Engineering| **CGPA: 9.21 / 10.0**

IIT-Madras, Madras, India	Sept 2021 – Dec 2024

BS in Data Science and its Application | **CGPA: 8.08 / 10.0**

Experience

Full Stack & AI Developer Intern, Butterflo, USA — Jan 2026 – Present
- Designed an automated image classification pipeline using **Vertex AI and Gemini Vision Pro** for large-scale datasets.
- Optimized LLM prompt pipelines and token usage, **reducing inference latency and API costs** while maintaining accuracy.
- Managed production **ML deployment (MLOps)** on **Google Cloud Platform**, including dataset versioning and real-time model endpoints.

Research Assistant, Speech Neuroengineering & Cybernetics Lab — April 2025 – Present
- Led a demographic sensitivity analysis on 147 sEMG features in collaboration with **Meta's Neurotechnology program**.
- Built Mixed-Effects Models and PLS to quantify demographic effects on sEMG signals, validated using FDR correction and effect size analysis, identifying time-domain features as demographic-agnostic.
- Identified that Wavelet Packet Transform and frequency-domain features are highly sensitive to sex and subcutaneous fat.

Data Analytics Intern, fAIshion Inc., USA — June 2025 – Aug 2025
- Built a conversational **multimodal** recommendation engine using LangChain and OpenAI's CLIP for semantic search.
- Integrated **Amazon S3** to store and retrieve vector embeddings and high-volume fashion image datasets.
- Built automated **ETL pipelines** to clean unstructured fashion API data, enhancing model training quality.
- Implemented collaborative filtering and co-occurrence models to generate personalized product recommendations.
- Developed analytics dashboards for **trend analysis and cross-functional decision-making** with product teams.

Software Engineering Intern, Globemind Pvt Ltd, Pune, India — Jan 2023 – Dec 2023
- Architected a **Full Stack** Hotel Management System to automate bookings, room assignments, and payment workflows.
- Developed responsive front-end interfaces and **RESTful APIs** to handle real-time guest check-ins and payment processing.
- Optimized database schema and query performance to manage high-volume reservation data and client reporting.
- Managed the full SDLC for a private client, from requirement gathering to deployment and post-launch maintenance.

Projects

Marathi Dialect Detection System
- Built a machine learning system to classify regional Marathi dialects using 500+ labeled audio samples.
- Extracted MFCC and spectral features; trained Decision Trees, and Gradient Boosting models, achieving F1 score of 0.95.
- Improved robustness using audio data augmentation (noise injection, pitch shifting, time stretching) with cross-validation.
- Deployed the model via FastAPI for real-time dialect prediction, targeting low-resource language accessibility.

Publications

Threat Detection in Social Media Networks Using ML-Based Network Analysis| [Link](#) — May 2025
- Developed an ANN-based intrusion detection model for social media network traffic using the UNSW-NB15 dataset.
- Performed data preprocessing, feature engineering, class imbalance handling, and model evaluation using accuracy, recall, F1-score, and ROC-AUC.

Food Waste Management with Community Collaboration | [DOI](#) — May 2023
- Developed with MySQL and Apache; frontend implemented using HTML and JavaScript.Research focused on scalable, community-driven food waste management solutions.

Technical Skills

Programming Languages: Python, SQL, Go, JavaScript, HTML, CSS
Machine Learning & AI: TensorFlow, PyTorch, Scikit-learn, LangChain, Ollama, LangFuse, LangGraph, Prompt Engineering
Tools & DevOps: Next.js, React, Node.js, Docker, GitHub, GitHub Actions, MATLAB, JIRA, Power BI, Tableau, Git, Postman
Cloud Platforms: Vercel, AWS, GCP (BigQuery, Vertex AI, Cloud Run)