

Abhinav Manda

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SKILLS & INTERESTS

Skills: Languages: C++, C, Python, SQL;

Frameworks: Pandas, Numpy, Sci-kit Learn, PyTorch, HuggingFace, Transformers;

Core CS Skills: Data Structures & Algorithms (DSA), System Design, OOP;

Domains: Machine Learning, Deep Learning, Computer Vision, NLP

Interests: Chess, Swimming, Escape Room Games.

WORK EXPERIENCE

Tamizhan Skills

Machine Learning Intern

Jun 2025 - Jul 2025

- Built and deployed a **Flask-based crop advisory tool** using Random Forest, reducing incorrect crop suggestions by **40%** based on soil and climate data.
- Automated crop yield estimation (tons/hectare) with **87%+ accuracy**, improving decision-making for agri-advisors across two regions.
- Designed and deployed a BERT-based disaster urgency classifier** with **91% accuracy** to identify events like **fires**, **building collapses**, and **chemical leaks**, and integrated it with **Leaflet.js** for real-time geo-visualization.

PROJECT EXPERIENCE

Multiplayer Online Game Matchmaking System

Software Developer

Dec 2024 - Present

- Implemented a **Glicko-2 rating engine** to dynamically adjust player skills post-match, improving match fairness by **35%**.
- Designed **Union-Find based party matchmaking**, supporting up to 5-player lobbies with **92%+ skill balance accuracy**.
- Engineered** high-performance matchmaking logic using **graph algorithms** in C++ and **Python**, ensuring scalability under concurrent request spikes.

Flood Zone Detection and Risk Mapping Project

Software Developer

Mar 2024 - Present

- Created a **Union-Find flood segmentation algorithm** with **$O(\alpha(n))$ time complexity**, detecting 4-connected water zones on elevation datasets.
- Achieved **94% detection accuracy** and **91% precision** on synthetic elevation maps, enabling early-stage risk zone classification.
- Visualized** segmented risk zones using **Matplotlib** and **NumPy**, supporting disaster mitigation planning.

DeepMind Journal-Blog Sentiment Analysis & Rant AI

Machine Learning Developer

Feb 2025 - Present

- Developed an interactive blog platform integrating **sentiment analysis** using **BERT + LSTM**, achieving **87% mood prediction accuracy**.
- Created Rant AI**, an empathetic chatbot fine-tuned on **TinyLlama** using **QLoRA**, increasing user engagement by **2.5x**.
- Integrated a PostgreSQL-backed mental health monitoring module** for mood tagging and trend tracking.

EDUCATION

Jaypee University Of Information Technology

Solan, H.P.

BTech in CSE

Graduation Date: May 2026

CERTIFICATIONS

Introduction to Machine Learning - NPTEL

- Covered theoretical underpinnings of machine learning including probabilistic models such as **SVM**, **Naïve Bayes**, and **k-NN**.

JP Morgan Software Engineering Program

- Completed JPMorgan Chase Software Engineering Virtual Experience on **Forage**, building and **integrating Kafka** and **SQL backend**.