Ayan Kumar

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Education

Punjabi University, Patiala Jul 2024 – Jul 2028
Bachelor of Technology in Computer Science and Engineering
Relevant Coursework: Data Structures & Algorithms, Operating Systems, Database Systems, Machine Learning

Technical Skills

Languages: Python, JavaScript, SQL, HTML, CSS
Frameworks & Libraries: React, Node.js, TensorFlow, Scikit-learn
AI / ML: Supervised Learning, Audio Feature Extraction, Classification Models, Model Evaluation, Generative AI (Gemini APIs)
Systems & Tools: Git, GitHub, REST APIs, Vercel, Linux, VS Code

Experience

AI/ML Intern — ShadowFox (Remote) Dec 2025 – Present

- Designed and optimized machine learning pipelines using Python and TensorFlow, improving model accuracy and reliability by **20%**.
- Worked on real-world datasets involving preprocessing, feature extraction, and evaluation workflows.
- Integrated Generative AI features using **Google Gemini APIs** to support intelligent content generation.
- Collaborated with engineers to ship production-ready AI features with emphasis on performance and maintainability.

Projects

Silent Guardian — Privacy-First Mental Health AI System

- Built an offline-first AI system that analyzes short voice samples to detect stress and emotional patterns without cloud dependency.
- Implemented audio feature extraction and lightweight keyword-based classification for on-device inference.
- Designed a privacy-first architecture allowing users to choose between local models and external AI APIs.
- Deployed a web-based MVP demonstrating real-time analysis and guided mental health support.

AI Study Assistant — Full-Stack AI Application

- Developed a full-stack web application that summarizes academic content and answers contextual questions using LLM APIs.
- Built modular REST APIs and integrated React-based frontend workflows for smooth AI-assisted learning.
- Optimized for usability, low latency, and clean system design rather than prompt-only solutions.

Machine Learning Classification System

- Implemented supervised classification models achieving **92% accuracy** using TensorFlow and Scikit-learn.
- Applied data preprocessing, feature engineering, and hyperparameter tuning to improve generalization.
- Evaluated performance using standard ML metrics and visual analysis.

Problem Solving

- Solved **150+** algorithmic problems on LeetCode using Python, C++, and C.
- Strong grasp of core data structures and algorithms with emphasis on time and space complexity.