Kushagra Gupta

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Education

JK Lakshmipat University, Jaipur **Expected 2026**
B.Tech in Computer Science & Engineering *7.6/10 CGPA*

IIIT, Hyderabad **Monsoon 2025**
Semester Exchange Student — B.Tech in Computer Science & Engineering

IIT, Gandhinagar **December 2023**
Semester Exchange Student — B.Tech in Computer Science & Engineering

Work Experience

Full Stack Development Intern **May 2025 – July 2025**
Dobby Ads *Remote*

- Built & deployed two **MERN-based** web applications with **MongoDB** for storage, designing scalable architecture for client workflows.
- Automated 30+ Cypress test cases, reducing post-release bugs by 25% and regression testing time by 40%.
- Implemented Prometheus + Grafana dashboards for real-time API monitoring, improving incident resolution time by 20%.

Android Development Intern **May 2024 – July 2024**
Vedic Bodhi Pvt. Ltd. *Remote*

- Developed secure user authentication with Firebase and integrated REST APIs for real-time updates.
- Enhanced app performance and user experience through optimized API calls and responsive UI design.

Projects

Multilingual Language Model (English–Hindi–Bengali) **Source Code**
Python, PyTorch, Transformers, SentencePiece tokenizer (Unigram), LoRA fine-tuning, multilingual data pipelines

- Trained an 18.5M parameter transformer on 400M tokens using PyTorch.
- Built custom data pipelines for cleaning, deduplication, and segmentation, reducing noise by 2–3%.
- Implemented SentencePiece tokenizer (50k vocab) achieving ¡0.0002% OOV rate.
- Fine-tuned Gemma-270M with LoRA on 40k-task dataset; analyzed limitations under compute constraints (Perplexity: 2857, 0% exact match accuracy).

Netflix Clone **Source Code**
MERN Stack (MongoDB, Express.js, React, Node.js), Cypress

- Designed a scalable frontend architecture with reusable React components and managed state effectively.
- Built a fully responsive UI, optimizing for cross-device compatibility and performance.

Vehicle Number plate detection and recognition using custom CNN and EasyOCR
Deep Learning, Custom CNN (Convolutional Neural Network), and EasyOCR

- Designed and optimized a custom Convolutional Neural Network (CNN) architecture for accurate vehicle number plate detection.
- Integrated EasyOCR for character recognition, creating a complete end-to-end recognition pipeline.

Comparative Analysis and Sustainable Solutions for E-Waste Management **Paper**
Python and Statistical Methods

- Analyzed 15+ datasets on e-waste from emerging and developed economies using Python and statistical methods.
- Proposed scalable, data-driven waste reduction strategies in a comprehensive academic report.

Enhanced Malware Detection using AI
AI, Machine Learning, Wireshark, and Docker

- Engineered a machine learning-based malware classifier achieving over 90% detection accuracy in lab tests.
- Utilized Wireshark and Docker to analyze network packets for malicious patterns and built predictive models for early threat identification, demonstrating skills relevant to processing large data streams.

Spardha - College Sports Fest Website **Source Code**
HTML, CSS, and JavaScript

- Collaborated with a team of 3 to develop the official Spardha website. Built responsive UI with 5+ interactive features; deployed via Vercel on the college's domain with optimized load time under 2s.

Windmill: Swift Blades **LinkedIn Post**
Arduino Nano, Robotics, and Automation

- Created an adjustable-blade windmill design reducing storm damage potential by 30% through blade retraction mechanics.
- Specialities - Sliding blades and pole, to reduce the length, thus decreasing the tension produced.

Technical Skills

Languages: JavaScript (ES6+), Python, Java, C++, SQL, Kotlin, HTML5, CSS3
Core Competencies: Data Structures & Algorithms, Object-Oriented Programming (OOP), Analytical Problem-Solving
Frontend: React.js, HTML5, CSS3, Figma
Backend: Node.js, Express.js, REST APIs
Databases: MongoDB, Firebase
Artificial Intelligence & Machine Learning: Deep Learning, Computer Vision (CV), Statistical Analysis, PyTorch, Scikit-learn, NumPy, Pandas, Matplotlib
Tools & Technologies: Git, Docker, GitHub, Postman, Cypress.io, Prometheus, Grafana, LaTeX, Firebase, Android Studio

Relevant Courses

Algorithms, Object-Oriented Programming, Operating Systems, AI, DBMS, Computer Networks, Language Model and Agents, Information Retrieval and Extraction, Digital Image Processing

Leadership and Extracurriculars

- **Hackathon Participant:** Competed in HackJKLU 4.0, 3.0, and 2.0, developing solutions involving machine learning, web development, and game development.
- **Volunteer Experience:** Volunteered in Sabrang Cultural Fest, managing logistics for awards and certificates for 150+ volunteers. Smart India Hackathon (SIH) - Around 20 volunteers to organize logistics for 70+ attendees. HackJKLU - Around 100 volunteers to organize logistics for 180+ attendees

Certificates and Achievements

Google Cloud Generative AI Skill Badges **Apr 2025 – Jun 2025**
Google

- Completed a comprehensive series of hands-on labs focused on the Google Cloud GenAI stack, validating expertise in building and deploying AI-powered applications.
- **Badges Include**: Explore GenAI with Vertex AI Gemini API, Inspect Rich Documents with Gemini Multimodality and RAG, Build Real World AI Applications with Gemini and Imagen, Develop GenAI Apps with Gemini and Streamlit, Prompt Design in Vertex AI.
- Demonstrated proficiency in prompt engineering, multimodal AI, and building full-stack GenAI applications using Vertex AI, Gemini, Imagen, Streamlit, and Cloud Run.

Artificial Intelligence Fundamentals **Sep 2025**
IBM

- Acquired a foundational understanding of AI concepts, machine learning principles, and their real-world applications.

Gen AI Academy **Jun 2025**
Google Cloud Skills Boost

- Completed foundational training on Generative AI, covering core concepts, models, and use cases within the Google Cloud ecosystem.

Data Structures & Algorithms in Java **July 2022 – July 2023**
1st Alpha Batch *Apna College*

- Solved 200+ Data Structures and Algorithms problems on various platforms, demonstrating a strong grasp of algorithmic problem-solving.