

Lakshit Verma

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github.com/voltrix-225 | linkedin.com/in/lakshit-verma

Skills

Languages: C, C++, Java, Python, PHP, JavaScript

Database Management: SQL, MongoDB

Web Technologies: HTML, CSS

Technologies: Git, Machine Learning, OpenCV, Blockchain, Flask, Generative-AI, Gemini-API, Pytorch, Tensorflow, Pandas, RESTful API

Certifications: Designing Blockchain Solutions using Amazon Managed Blockchain(AWS), CyberSecurity Essentials(Cisco Networking Academy), Introduction to MongoDB, Postman API Fundamentals Student Expert, AI for Beginners(HP LIFE)

Education

Guru Gobind Singh Indraprastha University, New Delhi B.Tech-CSE Nov 2022 – June 2026

Delhi Public School, Agra AISSCE June 2020 – June 2022

Projects

Bitcoin Blockchain Architecture voltrix-225/BTC-blockchain

- Built a full-stack blockchain prototype by designing custom Block and BlockHeader classes and using Python multiprocessing to parallelize UTXO and MemPool operations, boosting transaction throughput by 60%.
- Engineered a secure mining and validation system by implementing SHA-256 hashing, Merkle root computation, and target-based Proof-of-Work logic, ensuring 100% valid and tamper-proof blocks throughout the chain.
- Enhanced blockchain performance and integrity by introducing UTXO caching, persistent block storage, and automated transaction fee calculations, leading to faster retrieval times and stable long-term scalability.

ABEL - A Character Level Transformer to Write Lyrics voltrix-225/abel-the-lyricist

- Engineered a GPT-style character-level Transformer using PyTorch, trained on 70M+ Spotify lyrics to generate accurate, human-like prompt-based song outputs.
- Built a custom training pipeline with tokenization, embeddings, positional encoding, and multi-head self-attention from scratch; tuned hyperparameters for stable convergence.
- Deployed the model as an interactive lyric assistant by integrating temperature-scaled sampling for real-time, prompt-based generation, resulting in coherent, creative lyric outputs with controllable stylistic variance.

ANI The AI-ChatBot ANI-AIBot

- Developed a real-time, context-aware chatbot application by integrating Google Gemini API with a Flask backend, resulting in dynamic and intelligent user conversations through a responsive web interface.
- Enhanced natural language understanding by implementing prompt engineering and persistent chat history, enabling smooth multi-turn interactions and improved conversational relevance.
- Built and deployed a full-stack modular application using Flask, HTML, and JavaScript with RESTful API endpoints, ensuring clean integration, maintainable codebase, and scalable deployment architecture.

Volunteer Experience

Campus Ambassador - E-Cell IIT Bombay July 2024 - Dec 2024

- Represented IIT Bombay's E-Cell by promoting startup culture, organizing events, and leading workshops on coding, finance, and entrepreneurship, driving increased student engagement.
- Built networks with industry experts and peer ambassadors to foster collaborations and promote real-world entrepreneurial exposure on campus.

Research Head - Forge Innovators Club Jan 2024 - Dec 2024

- Led a 6-member research team across Defence, Agriculture, and Commercial sectors, overseeing execution, literature reviews, supporting startup-aligned research.
- Mentored junior researchers on methodology and best practices, fostering skill development and improving team efficiency, collaboration, and research output quality.