Manas Kumar

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Summary

Computer Science undergraduate targeting Software Development Engineer and Full-Stack roles, with strong experience building scalable backend systems, full-stack web applications, and data-driven pipelines. Demonstrated ability to translate complex machine learning models into reliable, production-oriented systems with measurable performance gains.

Education

Vellore Institute of Technology, Vellore 2022 – 2026
B. Tech in Computer Science and Engineering
Relevant Coursework: Data Structures and Algorithms, Operating Systems, Database Management Systems, Computer Networks, Machine Learning.

Technical Skills

Languages: Java, JavaScript, Python, SQL, Solidity
Full-Stack Development: Node.js, Next.js, React.js, REST APIs, Authentication, Async Processing
Blockchain & Web3: Smart Contracts, IPFS, Hardhat
AI/ML & Data: PyTorch, PyTorch Geometric, LangChain, FinBERT
Tools: Git, GitHub, Linux Shell

Projects

Fraud Detection using Graph Neural Networks and FinBERT
Python, PyTorch, PyTorch Geometric
- Built a multimodal fraud detection system on the IEEE-CIS dataset (590K transactions) by modeling transactions as a graph and fusing tabular, temporal, and semantic features.
- Trained a 3-layer GraphSAGE model achieving AUC-ROC 0.9095 and 26% Recall@1%, demonstrating strong real-world utility.

Chain Forge: NFT Ownership and Verification Platform
Next.js, Solidity, Hardhat, IPFS
- Developed a full-stack Web3 platform enabling secure NFT minting and ownership verification using smart contracts and wallet-based authentication.
- Integrated decentralized storage via IPFS and implemented blockchain RPC failure handling to ensure 100% platform reliability.

Modernized AlexNet for Image Classification
Python, PyTorch
- Modernized AlexNet architecture with BatchNorm and GAP, achieving 92.3% test accuracy and 0.922 macro F1-score on CIFAR-10.
- Reduced model size by 40% while maintaining accuracy; integrated Grad-CAM for enhanced model explainability.