Bihan Banerjee

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EDUCATION

Garden High School   Kolkata, India
Council for the Indian School Certificate Examinations (CISCE)   *2008 – 2023*

Vellore Institute of Technology (VIT)   Vellore, India
B.Tech in Computer Science and Engineering (Information Security)   *2023 – Present (Expected 2027)*

EXPERIENCE

MLOps Intern   June 2025 – July 2025
DCG AILABS Academy Pvt Ltd   *Kolkata, India*
- Engineered a real-time sentiment analysis system on the IMDb dataset using Flask.
- Developed and deployed an AI model with TF-IDF vectorization and containerized with Docker.
- Automated streaming workflows using Kafka and Zookeeper for live inference and dynamic feedback dashboards.

Events Head, Mozilla Firefox Club VIT   July 2024 – Present
Vellore Institute of Technology   *Vellore, India*
- Led planning and execution of multiple tech and non-tech events and hackathons for 300+ students.
- Coordinated with cross-functional teams for sponsorships, logistics, and technical workshops.
- Anchored events and sessions for juniors, guiding them through technical workshops and club activities.

PROJECTS

Secure Code – Vulnerability Scanner | *React, Flask, TypeScript, MongoDB*   2025
- Developed a platform to detect and auto-remediate vulnerabilities in Python/JavaScript code generated by LLMs using CodeT5, GPT-Neo, and CodeGPT-small.
- Integrated the static analysis tools Bandit, Semgrep and SonarQube with LLMs for secure code repair, difference generation and code safety against CWE categories.
- Built multi-file upload, vulnerability reporting, and management interface using React + Flask.

CyberX – AI-Powered Cybersecurity Simulator | *Python, MERN, Reinforcement Learning*   2025 – Ongoing
- Architecting a modular simulator with separate attack tools (Nmap, fuzzing, Metasploit, etc.) and defense modules (monitoring, anomaly detection, forensic tools, Wireshark-based analysis, etc.).
- Designing AI learning modules that improve over time by analyzing attack logs and evolving threat patterns using reinforcement learning.
- Ongoing research project focused on adaptive cybersecurity simulations and AI-driven defense mechanisms.

Serenity Gardens – Family Garden Webapp | *MERN, TypeScript, Razorpay*   2025
- Designed a full-stack e-commerce app with landing, gallery, and review pages plus a secure shopping portal.
- Implemented role-based authentication using JWT tokens, distinguishing between admin (catalog management) and user (shopping) functionalities.
- Developed catalog management, cart and checkout features supporting Cash on Delivery and Razorpay payments.
- Built responsive front-end interfaces using React and integrated with backend APIs and MongoDB database for seamless operations.

NeuroPharm – AI-Driven Drug Discovery Platform | *React, Node.js, Python*   2024
- Developed an AI-driven drug discovery platform to fetch protein structures and identify top ligands for pharmaceutical research.
- Visualized molecular interactions in 3D to aid interpretation and analysis of potential drug candidates.
- Implemented backend services in Node.js and Python, integrated with AlphaFold, ChEMBL, and Gemini APIs for data retrieval and processing.
- Built a React-based frontend for interactive visualization and user-friendly exploration of molecular datasets.

TECHNICAL SKILLS

Languages: Java, Python, JavaScript, TypeScript, C/C++, SQL, HTML, CSS
Frameworks: React, Node.js, Flask, Express, Vite, TailwindCSS
Cybersecurity Tools: Semgrep, Bandit, SonarCloud, Wireshark, Kali Linux, Burp Suite
Developer Tools: Git, MongoDB, Kafka, Docker, VS Code, Postman