

SOHINI BANERJEE

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SUMMARY

Web designer and developer with expertise in HTML, CSS, JavaScript, and React, specializing in interactive web page development. Demonstrated success in front-end and back-end development, API integration, and SQL database management, enhancing overall website functionality. Strong analytical and problem-solving skills, with a solid foundation in artificial intelligence and machine learning. Committed to leveraging technical skills in Python and Java to drive innovative solutions and support team objectives.

EXPERIENCE

Web Designer and Developer, 07/2025 – 08/2025

Hackfinity – Chennai, India

- Developed interactive web pages utilizing HTML, CSS, JavaScript, and React.
- Collaborated with co-developers to troubleshoot and enhance existing websites.
- Provided freelance-related services to support team members effectively.

PROJECTS

GENESIS - Evolutionary Code Synthesis AI

- Engineered a Genetic Programming system in Python that autonomously "invents" algorithms by evolving Abstract Syntax Trees (AST).
- Implemented complex evolutionary logic including Adaptive Mutation and Bloat Control, achieving 100% convergence on logic tasks while optimizing code efficiency.
- Designed a dynamic analytics dashboard using Matplotlib to visualize fitness trends and population diversity in real-time.

ML-IDS - Network Intrusion Detection System

- Developed a high-precision security engine using Random Forest and SVM to detect network attacks (DoS, Probe) from raw traffic logs.
- Built a robust data pipeline using Scikit-Learn and Pandas, utilizing SMOTE for class balancing and feature selection to achieve >99% accuracy.
- Optimized classification performance to minimize false positives, creating a reliable model for real-time anomaly detection.

PRISM PROTOCOL - Decentralized Biometric Identity System

- Architected a hardware-agnostic deepfake detection platform using a polyglot microservices architecture (FastAPI for CV inference, Spring Boot for blockchain security) to process 30FPS video streams via WebSockets.
- Developed a novel liveness detection engine using OpenCV and MediaPipe that correlates biological signals (rPPG) and corneal reflections with active screen illumination to defeat pre-recorded AI attacks.
- Integrated Web3j and Solidity to engineer a secure "Proof of Personhood" protocol, issuing non-transferable Soulbound Tokens (ERC-5192) on Polygon to provide Sybil resistance for decentralized applications.

SKILLS

- Web development and design
- Team collaboration
- Critical thinking and problem solving
- JavaScript and Python programming
- HTML and CSS proficiency
- Machine learning and deep learning
- Front-end and back-end development
- SQL database management
- API integration
- Technical documentation
- Creative problem solving
- Artificial intelligence fundamentals
- Mathematical reasoning
- Java programming
- Object-oriented programming
- Full-stack development

EDUCATION

Bachelor of Technology: Computer Science and Engineering, 07/2024 – Present

Vellore Institute of Technology – Chennai, TN

- Coursework in AI and Machine Learning
- Member of Linux Club, 2024 to present
- Member of SEDS Antariksh Club, 2024 to present
- Member of Open Source Programming Club, 2025 to Present
- Programme Representative, CSE (AIML), 2024 to Present
- GPA: 8.59, CGPA

Certificate of Higher Education: Physics, Chemistry, Mathematics, Computer Science, 03/2022 – 03/2024

Delhi Public School – South Kolkata

Score: 91.2%

SOCIAL NETWORKS

- www.linkedin.com/in/sohini-banerjee-12882731b
- <https://github.com/sosush>
- <https://sohinibanerjee.vercel.app>