Swarnadeep Saha Poddar

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Education

Siliguri Institute of Technology Aug 2022 – Present
Bachelor of Technology in Computer Science and Engineering
Caesar School, Malbazar Aug 2020 – July 2022
Class XII – CBSE
St. Xavier's School, Raiganj Mar 2008 – July 2020
Class X – ICSE

Experience

Full Stack Developer @ Dimension Lab Aug 2023 – Feb 2024
- Developed production-ready web applications using **React.js, Node.js, Express.js, MongoDB**.
- Implemented secure authentication, optimized API latency, and enabled server scaling for increased traffic.
- Deployed services on **AWS (EC2, S3, IAM)** and container-based workflows using **Docker**.
- Collaborated on **microservice deployment strategies**, load balancing, and environment hardening.

MERN Developer Intern @ IIT Delhi Dec 2024 – Feb 2025
- Built a scalable Learning Management System (LMS) backend using **Node.js, Express, MongoDB**, improving API
- Designed role-based authentication (Admin/SuperAdmin) and optimized REST APIs for performance.
- Containerized backend services using **Docker** and deployed automated builds via **GitHub Actions CI/CD**.
- Integrated **system monitoring, centralized logging, and uptime tracking** with alerting workflows.

Technical Skills

Programming Languages: Python, C, C++, Java, SQL, Bash,JavaScript,TypeScript
Frameworks & Libraries: Django, Flask, Tkinter, Pandas, NumPy, Matplotlib, Seaborn, Plotly, OpenCV, Scikit-learn
Computer Vision: Object Detection, Contour Analysis, Face Recognition, Edge Detection and more using **OpenCV**
Automation & Scripting: Linux Shell Scripting, **subprocess** Module, File Management, PDF and Excel Automation
Databases: SQLite, PostgreSQL, MySQL, MongoDB
Web Development: Django (Backend), HTML5, CSS3, JavaScript (Frontend Integration), RESTful API Development
Operating Systems & Tools: Linux/Unix Administration, Bash Automation, Git/GitHub, VS Code, Jupyter Notebook
Machine Learning (Basics): Regression, Classification, Clustering, Model Evaluation, Data Preprocessing Pipelines

Projects

Virtual Gather — Python, Django, JavaScript, Agora, WebRTC, SQLite Live Project
- Developed an innovative real-time virtual meeting platform powered by **Django** (backend) and **JavaScript** (frontend).
- Integrated **Agora** and **WebRTC** to deliver ultra-low latency audio and video communication.
- Implemented spatial audio, dynamic room management, and secure role-based access for meetings.
- Optimized for scalability with efficient bandwidth management and cross-platform support.

Synergy-X — Python, Linux, Tkinter, Shell, Firmware APIs, PDF Tools Github
- Developed a secure, offline, and bootable platform for complete data erasure from **HDDs, SSDs, NVMe, and Devices**.
- Executes firmware-level sanitization (**ATA Secure Erase**, **NVMe Sanitize**) ensuring irreversible data removal.
- Provides dual interfaces — **CLI + GUI** — for both IT admins and general users.
- Generates tamper-proof, digitally signed **PDF/JSON wipe reports** compliant with **NIST SP 800-88, GDPR , CCPA**
- Focused on cybersecurity and sustainability by enabling secure reuse and e-waste reduction.

VehicleVision — Python, OpenCV, TensorFlow, Flask, MongoDB *(In Development)*
- Built a real-time vehicle image processing system for detection, recognition, and analytics.
- Supports license plate detection, vehicle classification, and speed estimation using **OpenCV**.
- Utilizes deep learning models (**TensorFlow**/**PyTorch**) for high-accuracy vehicle recognition.
- Backend powered by **Flask** and **MongoDB** for result storage and analytics dashboard integration.
- Designed for integration with traffic monitoring, smart parking, and toll collection systems.