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.

Data Analytics Intern @ Indian Army   Feb 2025 – May 2025
- Worked on real operational datasets to support decision-making using **Power BI, Excel, and SQL**.
- Built interactive dashboards for trends, performance metrics, and operational efficiency insights.
- Cleaned, transformed, and modeled large datasets using **Excel automation, SQL queries, and DAX expressions**.
- Applied **AI-driven analysis and pattern detection** to identify anomalies and actionable intelligence.
- Improved reporting accuracy and accessibility by standardizing data pipelines and visualization workflows.

Technical Skills

Core: Machine Learning, Deep Learning, Data Analysis, Computer Vision, NLP, LLMs
Python Libraries: NumPy, Pandas, Matplotlib, Scikit-Learn, TensorFlow, Keras, OpenCV, Librosa
Data Analytics: SQL, PostgreSQL, MongoDB, ETL Pipelines, Data Wrangling, Feature Engineering
Programming: Python, JavaScript, TypeScript, Java, C++
Cloud DevOps: AWS (Lambda, EC2, S3), Google Cloud, Docker, GitHub Actions, Kubernetes (basic)
Other Tools: Postman, Jupyter Notebook, Figma, Git CLI, Vertex AI, Gemini API, OpenAI API

Projects

Sports Vision AI (Ongoing) — *Python, OpenCV, TensorFlow, Librosa, NumPy*
- Developing an end-to-end AI pipeline capable of analyzing live and recorded sports footage.
- Implementing **object detection and pose tracking** to identify players, ball movement, and key actions.
- Using **audio signal processing, STFT and crowd intensity modeling** to detect high-momentum match moments.
- Experimenting with **emotion recognition, highlight segmentation and event summarization**.
- Building a modular architecture for scalable model inference and analytics dashboard integration.

SSPAI-CLI —*Node.js, Express.js, MongoDB, JS Threads, Gemini API, OpenAI API*   *NPM Package*
- Built a full-stack AI-powered **Command Line Interface (CLI)** tool offering instant AI assistance directly from CMD
- Enabled seamless switching between **Gemini** and **OpenAI** models with a modular configuration architecture.
- Implemented multi-threaded execution using JavaScript Threads for concurrent task handling and better performance.
- Published as an open-source NPM package with 100+ downloads, featuring color-coded prompts, error handling.

Trip Blueprint — *React.js, Node.js, Google Maps API, Google Vertex AI, Tailwind CSS*   *Live Project*
- Developed an intelligent travel planning platform that integrates **Google Maps** and **Vertex AI** to provide real-time route
- Implemented dynamic map rendering with custom markers, live distance calculations, and destination-based insights.
- Designed a responsive and modern UI using **React.js** and **Tailwind CSS**, ensuring seamless usability across devices.
- Optimized API requests for faster data fetching, reducing latency by 40% compared to traditional REST implementations.

SSP Gemini — *Tech Stack: JavaScript, Google Gemini API, Google Cloud Platform, Flask Backend*   *Live Project*
- Created a conversational AI assistant leveraging **Google Gemini** to generate real-time, context-aware responses for users.
- Integrated with **Google Cloud Services** for API orchestration, storage, and scalable deployment.
- Built an interactive front-end enabling users to query, visualize, and interpret responses with embedded media cards.
- Designed lightweight architecture for high-performance AI inference, achieving response times under 1.5 seconds.