Sabittwa Banerjee

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EDUCATION

Techno Main Salt Lake — Kolkata, WB
Bachelor of Technology in Computer Science and Engineering (IoT) — *2023 – 2027*

TECHNICAL SKILLS

Languages: JavaScript (ES6+), TypeScript, Python, C, SQL, HTML, CSS
Front-End: React.js, Next.js, Bootstrap, Tailwind CSS, Shadcn/ui
Back-End: Node.js, Express.js, Flask, REST APIs, OAuth, Clerk
Databases: PostgreSQL, MongoDB, SQLite
Tools & Technologies: Git, VS Code Extensions, Chrome Extensions (Manifest V3), Google Gemini SDK

PROJECTS

TruthScope | [Live Demo](#) | *Python, Flask, PostgreSQL, Google Gemini, Gemini SDK, JavaScript, Manifest V3, Tailwind CSS*

- Engineered a multi-source backend analysis agent achieving real-time web content credibility assessment by integrating Google Gemini AI with function extensions, for nuanced text analysis, external fact-checking APIs (Google Fact Check, ZenRows), searching latest news, and a PostgreSQL reputation database within Flask.
- Transformed Google Gemini into an autonomous agent via the Gemini SDK by defining custom function tools for database queries and API calls, enabling Gemini to directly execute reputation lookups and external fact-checking without intermediary code.
- Developed a Manifest V3 Chrome Extension UI to enhance user understanding of complex misinformation analyses via JavaScript-driven popups, detailed side panels, and dynamic DOM highlighting of suspect text via content injection.
- Architected full-stack data flow from browser to analysis presentation by orchestrating communication between content/background scripts, Flask REST API, AI models, and third-party services.
- Built a responsive Next.js landing page and user portal with React, TypeScript, Tailwind CSS, and Shadcn/ui, integrated with Clerk for secure authentication and user management.

Coordina | [Live Demo](#) | *Next.js, React.js, MongoDB, Convex, TypeScript, AI*

- Enabled centralized project visibility across multiple city departments by developing a full-stack dashboard with Next.js, React, and MongoDB, enhancing coordination and transparency among stakeholders.
- Reduced inter-departmental scheduling conflicts by implementing a real-time conflict detection API that analyzes project timelines and locations, proactively alerting teams to overlapping work.
- Boosted cross-departmental collaboration by integrating a real-time discussion forum using Convex, linking conversations directly to project proposals and accelerating issue resolution.
- Streamlined the end-to-end proposal lifecycle by designing digital workflows and REST APIs for submission, review, and voting, significantly cutting manual coordination efforts.
- Facilitated data-driven planning and risk assessment by integrating an AI-powered analysis engine to evaluate project descriptions and tender documents for potential issues and recommendations.

Github Diary | [VSCode Marketplace](#) | *VS Code Extension, Axios, GitHub OAuth*

- Automated tracking of coding activity by committing workspace changes to a private GitHub repo every 30 minutes or on editor close.
- Implemented smart diff logging with line-level change detection and comprehensive file history (create/rename/delete).
- Secured OAuth authentication and token storage to manage private repository access seamlessly.

MealMetric | [GitHub](#) | *Node.js, Express.js, PostgreSQL, EJS*

- Built a dynamic web app to calculate meal nutrition by fetching ingredient data via a public API and displaying real-time totals.
- Designed PostgreSQL schema for recipe storage and implemented full CRUD operations for user recipes.
- Crafted a responsive UI with EJS templates, enabling intuitive ingredient input and instant nutritional feedback.

ACHIEVEMENTS & CERTIFICATIONS

- **Harvard University's CS50** ([Certificate](#)) – Strengthened foundational knowledge in C, Scratch, data structures & algorithms, memory management, and SQL; gained exposure to AI, Flask, and cybersecurity principles.
- **Smart India Hackathon Finalist** *(National-Level Competition)* – Selected as a finalist in the 2024 edition for developing an innovative urban project coordination solution with Coordina.
- **Hult Prize On-Campus Round Runner-Up** *(Entrepreneurship Challenge)* – Achieved runner-up status for proposing a sustainable startup idea addressing global challenges.