Apratim Haldar

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Technical Skills

Frontend: React.js, HTML5, CSS3, TailwindCSS **Backend:** Node.js, Express.js, Flask, REST APIs

Programming Languages: C, C++, Java, Python, typescript, JavaScript **Other Skills**: SEO, Technical Documentation

Education

Institute of Engineering and Management **3rd Year**

Bachelor of Technology in Computer Science and Engineering

Kolkata, West Bengal

Experience

Swiftrinity **March 2025 – Present | Kolkata, India (Remote/Hybrid)**

Software Developer Intern

- Collaborating on an **enterprise-grade low-code application builder** platform for **Swiftrinity**.
- Developed a **robust authentication system** with secure session management and **GitHub OAuth.**
- Engineered **automated backend workflows** for **GitHub repository creation** for newly generated user applications.
- Built a **responsive studio portal** using **React.js** and **TailwindCSS**, enabling users to visually design and configure custom applications.
- Worked in an **Agile** environment alongside designers and backend teams to optimize **system architecture** and **user experience.**

Projects

Agnarok | *No-Code AI Agent Builder Platform* *Demo Link* Hackquest Link

🏆 ***2nd Prize Winner*** **among 75+ teams at Binary Hackathon 2025, Kalyani Government Engineering College**

- Developed a full-stack platform enabling users to build custom AI agents using natural language prompts and tool integrations (via checkboxes).
- Integrated task-specific capabilities such as private database analysis, web scraping, web/Wikipedia search, Google OAuth mail sending, meeting scheduling, GitHub repo analysis, and YouTube video summarization.
- Designed a dynamic interface using **React.js** and **TypeScript**, with persistent agent state like ChatGPT's conversation history.
- Enabled real-time agent interactions and task executions through modular integrations, enhancing usability for non-technical users.
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HireSight | AI-Powered HR Automation Platform

Tech Stack: React, TypeScript, Node.js, Express, MongoDB, AWS S3, Flask, Gemini AI

- Developed a full-stack HR recruitment platform enabling company HRs to create job posts, manage applications, and track candidate progress through a responsive React and Tailwind CSS dashboard.
- Enabled PDF-based job post creation by parsing uploaded resumes and JD files through a Gemini-powered Python API, storing files on AWS S3.
- Integrated a context-aware AI Assistant using Gemini 2.0 that dynamically answers HR queries based on job posts and candidate profiles using vector similarity search.
- Delivered features like application tracking, AI-powered summaries and real-time analytics.

DeepTruth | *AI Image, video, and audio detection full stack application* **Source Code: MlOps** **Source Code: Website**

- Built an AI-powered full-stack tool using **Python (Flask)** and **React.js** to classify AI-generated vs. human content in images, videos, and audio.
- Integrated machine learning models with backend APIs, achieving **95% classification accuracy**.
- Designed a responsive UI with **TailwindCSS** and implemented **JWT-based authentication** system for user management.

Heartify | AI-Powered Heart Health Monitoring System **Source Code** Live Link
Tech Stack: React, TypeScript, Flask, MongoDB, Socket.IO, scikit-learn, JWT

- Designed and developed a full-stack heart health monitoring app that predicts cardiovascular risk using machine learning and real-time vitals data.
- Integrated a trained Random Forest model (via Flask) with a dynamic React + TypeScript frontend to deliver instant risk assessments.
- Enabled live heart rate tracking using MongoDB Change Streams and WebSocket updates through Socket.IO.
- Built a rich UI dashboard showing BPM stats, modal-based health reports, and detailed ML form inputs for analysis.
- Secured the app with JWT authentication and implemented protected routes, user sessions, and role-aware access.
- Emphasized smooth user experience with real-time animation, analytics page, and responsive UI design for mobile and desktop.

Research and Publications

Semantic Edge Detection on Satellite Imagery Using PSPNet
1st Prize – Poster Presentation, IEEE AISC 2024 (Artificial Intelligence and Sustainable Computing) **CERTIFCATE LINK**
Co-authored a research paper utilizing Pyramid Scene Parsing Networks (PSPNet) for semantic edge detection in satellite imagery, focused on environmental landscape segmentation. Achieved superior performance over traditional methods (e.g., Multi-Otsu Thresholding) across metrics like MSE, PSNR, and Mean Correlation. Presented at AISC 2024, co-organized by B.P. Poddar Institute and University of Calcutta.

PSPNet-Based Deep Segmentation for Remote Sensing Applications *(Under Review)*
Contributed to an ongoing research effort submitted for publication, centered on advanced PSPNet architectures for high-resolution edge detection in remote sensing data. Emphasizes landscape segmentation, ecological monitoring, and optimized model pipelines for environmental data processing. Currently under peer review.