

# Swastika Bhattacharjee

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## EDUCATION

<b>University of Kalyani</b> <i>B.Tech in Electronics and Instrumentation Engineering (EIE)</i>	Kalyani, West Bengal 2024 – 2028
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## EXPERIENCE

<b>Research Intern (Autumn Internship)</b> <i>IDEAS-TIH, Indian Statistical Institute (ISI) Kolkata</i>	Kolkata, West Bengal Aug 2025 – Nov 2025
<ul style="list-style-type: none"><li><b>Guide:</b> Mr. Avijit Guha   <b>Project:</b> The Fitness Guide Agent</li><li>Completed a 10-week internship focusing on Agentic AI systems, developing a health recommendation engine.</li><li>Attended 30+ hours of specialized training in Machine Learning (Regression/Classification), Deep Learning, and NLP fundamentals.</li><li>Successfully submitted a project report and received certification for 120+ hours of dedicated research and development work.</li></ul>	

## PROJECTS

<b>GenZ AI Chatbot (Agentic AI)</b>   <i>Python, Streamlit, Gemini API, Tool Calling</i>	<a href="#">Live Demo</a>   <a href="#">GitHub</a>
<ul style="list-style-type: none"><li>Engineered a persona-driven AI agent using <b>Google Gemini 2.5 Flash</b>, utilizing advanced system prompting to strictly enforce linguistic patterns (slang, emojis) without breaking character.</li><li>Implemented <b>custom tool-calling logic</b> that autonomously detects user intent to trigger a "Meme Generator" function, dynamically rendering images alongside text.</li><li>Developed a responsive frontend with <b>Streamlit</b>, utilizing session state for context retention and Streamlit Secrets for secure API key management.</li></ul>	

<b>NeuroFlow - ADHD Friendly Assistant</b>   <i>Python, Langflow, Streamlit, OpenAI/Gemini</i>	<a href="#">Live Demo</a>   <a href="#">GitHub</a>
<ul style="list-style-type: none"><li>Developed an accessible AI productivity tool designed to reduce cognitive load for neurodivergent users by breaking complex goals into manageable micro-tasks.</li><li>Integrated <b>LangFlow</b> to orchestrate agentic workflows that adaptively guide users through tasks using a non-overwhelming, step-by-step interface.</li><li>Designed a clean, distraction-free UI using Streamlit to enhance user focus and task completion rates.</li></ul>	

<b>The Fitness Guide Agent (ISI Internship Project)</b>   <i>Python, Streamlit, Data Science</i>	<a href="#">Live Demo</a>   <a href="#">GitHub</a>
<ul style="list-style-type: none"><li>Developed "The Fitness Guide Agent" under the guidance of Mr. Avijit Guha at ISI Kolkata, focusing on personalized wellness.</li><li>Integrated <b>Streamlit</b> for widget handling and database management to create an interactive health recommendation system.</li><li>Utilized Machine Learning techniques for data visualization and personalized user feedback based on health metrics.</li></ul>	

<b>Mini GPT (LLM from Scratch)</b>   <i>Python, PyTorch, Transformers</i>	<a href="#">GitHub</a>
<ul style="list-style-type: none"><li>Implemented a character-level <b>Generative Pre-trained Transformer (GPT)</b> from scratch using <b>PyTorch</b>, building core components like Self-Attention, Multi-Head Attention, and LayerNorm manually.</li><li>Trained the model on the <b>Tiny Shakespeare dataset</b> to generate coherent, Shakespearean-style text, optimizing hyperparameters to minimize validation loss.</li></ul>	

<b>Amazon Sentiment Analysis (NLP)</b>   <i>Python, NLTK, Scikit-learn, Pandas</i>	<a href="#">GitHub</a>
<ul style="list-style-type: none"><li>Developed a sentiment analysis pipeline to classify customer reviews, implementing text preprocessing (tokenization, stop-word removal, lemmatization) using <b>NLTK</b>.</li><li>Trained and evaluated classification models (Naive Bayes, Logistic Regression) using <b>Scikit-learn</b> to detect positive and negative sentiment patterns.</li><li>Visualized dataset insights and sentiment distributions using <b>Matplotlib</b> and <b>Seaborn</b> to drive data-driven decision making.</li></ul>	

## TECHNICAL SKILLS

<b>Languages:</b> Python, C++, JavaScript, SQL
<b>AI &amp; LLM:</b> Agentic AI (CrewAI, LangGraph, LangFlow), PyTorch, Transformers, RAG, Gemini API, OpenAI API
<b>Web Development:</b> Streamlit, Django, FastAPI, Next.js, Astro, HTML/CSS
<b>Developer Tools:</b> Git, GitHub, VS Code, Google Cloud Platform (GCP), Streamlit Cloud

## ACHIEVEMENTS

<b>LeetCode:</b> Solved 850+ coding problems; consistent problem solver.
<b>Content Creation:</b> Run a YouTube channel ( <a href="#">@Swastika-j6x</a> ) documenting AI/ML learning journey and project showcases.