Subhajit Paul

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Research Interests

My research interest is at the conglomeration of **Formal Verification** and **Generative Artificial Intelligence**. I am particularly interested in developing frameworks to simplify and automate verification workflows in **Electronic Design Automation (EDA)**.

Education

The Neotia University
B.Tech. in Computer Science & Engineering   *Sep 2020 – Jun 2024*
CGPA: 9/10

Jhapardah Duke Institution
HS Education with PCM   *Jan 2018 – Feb 2020*
Percentage: 82

Experience

Indian Statistical Institute   **Kolkata, India**
Project Linked Person   *Jul 2024 – Present*
- Developed a novel framework to generate SystemVerilog Assertions using LLMs as a backbone to support reliable RTL development.
- Researched the usefulness of LLMs in Model Reconciliation for robotic path planning.
- Researching the application of the Agentic workflow in EDA for verification environment generation.

Xetalabs India   **Guwahati, India**
ML Engineer Intern   *Jan 2024 – Jul 2024*
- Created an LLM-powered chat application for "Northeast Frontier Railway" to enable quick QA on their notice database.
- Developed an OCR-to-vectorization pipeline for automated information retrieval from document images.

Publications

LISA: LLM-Informed SystemVerilog Assertion Generation   **Indian Statistical Institute, Kolkata**
Subhajit Paul, Ansuman Banerjee, Sumana Ghosh   *2025*
Accepted at IEEE Computer Society Annual Symposium on VLSI (ISVLSI 2025).

LLM-Guided Reconciliation for Explainable Robotic Path Planning   **Indian Statistical Institute, Kolkata**
Subhajit Paul, Ansuman Banerjee.   *2025*
Accepted at IEEE Autonomic Computing and Self-Organizing Systems (ACSOS 2025).

SuperSAGA: A Supervisor-Subordinate Agent for Assertion Generation   **Indian Statistical Institute, Kolkata**
Subhajit Paul, Ansuman Banerjee, Sumana Ghosh   *2026*
Accepted at 31st Asia and South Pacific Design Automation Conference (ASP-DAC 2026). To Appear.

Projects

Chat with 'Golpokotha' (Final Year Project)   **Jan 2024 – Jun 2024**
- Developed an LLM chatbot with memory using the Mistral 8x7B model as backbone.
- Tools: NextJS, Huggingface.
- Programming Language: JavaScript.
- **LINK:** https://subhajit-paul.vercel.app/ml/llm

PSYCLE: Wallpaper Recommendation App   **Aug 2023 – Dec 2023**
- Created an Android app that asks a random question to sense user's mood and recommend wallpapers.
- Trained and deployed a lightweight language model for emotion classification.
- Tools: AWS EC2, Firebase, Android Studio.
- Programming Languages: Python, Java.
- **GitHub:** https://github.com/Subhajit-Paul/psycle