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), 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

Mentoring

Team Lead: 39th Rank, Amazon ML Challenge 2023
Mentored a team of 4 people in the Amazon ML challenge 2023, which led us to secure 39th position.