

SWARNAJIT ROY

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Education

Christ (Deemed to be University), Bengaluru

Bachelor of Technology in Electronics & Computer Science Engineering (AI & ML)

Aug 2023 – May 2027

CGPA: 3.55/4.00

Experience

AI Chatbot Developer Intern

Oct 2025 – Nov 2025

Minu Travels

West Bengal, India

Designed and Implemented a **production-ready RAG-based AI system**, processing **100+ business documents** using automated ingestion, chunking, embeddings, and **FAISS retrieval** with confidence-based fallback logic for reliable responses.

AI Intern

Apr 2025 – Jul 2025

IEEE Computer Society, Bangalore

Karnataka, India

Architected and Implemented a **deepfake detection system** using **ensemble deep learning (EfficientNet, ResNet, Vision Transformer)**, with end-to-end data preprocessing, weighted sampling, and evaluation pipelines, achieving reliable real vs. fake classification performance.

Artificial Intelligence & Machine Learning Intern

Jun 2025 – Jul 2025

All India Council for Technical Education (AICTE) – Edunet Foundation

Remote

Designed a **machine learning prediction system** with an implementing **data preprocessing, feature engineering, regression modeling, and MAE-based evaluation**, deployed via an interactive analytical interface.

Projects

Tekshila — AI Documentation & Code Quality Assistant

🐙 GitHub

Built an AI system that analyzes codebases to **automatically generate documentation**, **detect code quality issues**, and **create annotated pull requests** using LLMs and GitHub APIs.

Agragrati — AI Resume Intelligence Platform

🐙 GitHub

Built an **AI-driven resume parsing and job-matching system** leveraging **LLM-based skill extraction** and **structured relevance scoring**, integrated with **external job APIs** to deliver accurate, data-driven candidate–role matching.

Technical Skills

- **Languages:** Python, SQL, Java
- **Machine Learning:** Supervised & Unsupervised Learning, Deep Learning, Model Evaluation
- **Generative AI:** Large Language Models (LLMs), Retrieval-Augmented Generation (RAG), Prompt Engineering
- **Frameworks & Tools:** PyTorch, scikit-learn, Hugging Face, FAISS, FastAPI, Docker, Git
- **Data & APIs:** Data Preprocessing, Feature Engineering, REST APIs

Research & Publications

International Conference on Smart Materials, Advanced Manufacturing & Industrial Applications

Dec 2025

Paper: *A Comparative Analysis of Single and Stacked Machine Learning Models for Battery Life Estimation*

Conducted a comparative study of **stacked machine learning models** for battery life estimation, achieving $R^2 \approx 0.98$ and **MAE ~ 1.5 hours** through a novel **Battery Degradation Factor**-based feature formulation.

International Conference on Sustainable Analytics and AI (SaaAI'25)

Aug 2025

Paper: *Quantum Hybrid Steganography Model*

Conducted a research proposing a **quantum–classical hybrid steganography framework**; demonstrated **88.06% security strength**, **SSIM ≈ 0.996** , and a **reduced bit error rate of $\sim 4.3\%$** using simulated **quantum key distribution**.

Certifications & Recognitions

- **AI Agents Bootcamp** — LetsUpgrade (with NSDC, ITM Edutech, GDG MAD)
- **Generative AI Foundations** — AWS Academy
- **Build RAG Chatbot with Python** — LetsUpgrade (with NSDC, ITM Edutech, GDG MAD)
- **Tata Group Data Analytics Job Simulation** — Forage (AI-powered data analysis and strategy design)
- **Winner** — Gen'AI Work-a-thon
- **First Place** — Extra-Curricular Activities — CUESTIC EC Club, Christ University (2024–2025)
- **Leadership Role** — Wing Head, Skill Development & Training (IIIC) — Led technical training initiatives and workshops at Christ University