

Swapnil Dutta

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WORK EXPERIENCE

Anonymous Digital Marketing Pvt Ltd.

Kolkata, India

Full Stack Engineer

Jun 2024 – Aug 2024

- Engineered a robust web application for employee management and fraud prevention that decreased employee fraud by 15% while enhancing onboarding efficiency by 60% across more than 50 businesses in the food and beverage sector.
- Architected and maintained a scalable cloud infrastructure on AWS (EC2, S3, Lambda, SES) that facilitated seamless integration with Docker and GitHub CI/CD tools, significantly reducing deployment times by 40%.

ADRDE, DRDO (Research & Development)

Agra, India

Machine Learning Intern

May 2024 – Jul 2024

- Aggregated and analyzed 50TB of 4-dimensional weather data from ECMWF ERA5, MERRA-2, and NCEP/NCAR using Xarray and Dask, resulting in the identification of over 20 significant weather patterns through dynamic visualizations crafted with Seaborn and Matplotlib.
- Applied advanced normalization and standardization techniques to convert datasets into Analysis Ready Cloud Optimized (ARCO) ZARR format, enhancing data retrieval speed by 40% and improving training efficiency for machine learning models with a dataset accuracy increase of up to 15%.

PROJECT EXPERIENCE

ADK Agent Tutor

May 2025 – Jun 2025

- Developed an AI tutoring framework using Google's Agent Development Kit (ADK) that orchestrates subject-specific sub-agents (Math, Physics) driven by Gemini for interactive student engagement, resulting in improved learning outcomes through personalized AI-driven instruction.

Fashion Tagging Engine

May 2025 – Jun 2025

- Engineered a computer vision-based fashion tagging engine that analyzes video and image content to identify fashion items and find similar products from catalogs, leveraging advanced image processing techniques and similarity matching algorithms for accurate product recommendations.

InfoRAG

Jan 2025 – Feb 2025

- Built a highly adaptable Retrieval-Augmented Generation (RAG) system with Next.js and FastAPI featuring hybrid vector and keyword search, metadata filtering, and OpenAI/Gemini model support, achieving 90% response accuracy across five professional domains while reducing system latency by 40%.

Mario-RL

Jan 2024 – Mar 2024

- Implemented Double Deep Q Networks (DDQN) for training an AI agent in Super Mario Bros using Python, achieving 30% increase in learning stability and reducing overestimation bias while establishing a comprehensive development environment that reduced setup duration by 40%.

EDUCATION

KIIT University

Bhubaneswar, India

B.Tech. in Computer Science and Engineering

Graduation Date: Jun 2026

TECHNICAL SKILLS

Languages: Python, Typescript, Go, SQL, C, HTML/CSS/JS, Bash, Rust

Libraries: FastAPI, Flask, Streamlit, Matplotlib, Pandas, Xarray, Dask, Pytorch, Next.js, Hono, Bun

DevOps: AWS, Docker, DigitalOcean, Azure, Prometheus, Grafana, Git, GitHub

CERTIFICATES

Oracle Cloud Infrastructure 2024 Certified AI Foundations Associate