Swapnil Dutta

swapsnil12@gmail.com | LinkedIn | GitHub | Portfolio

Education

KIIT University — Bhubaneswar, India
B.Tech. in Computer Science and Engineering — *Sep 2022 – Present*

Experience

Anonymous Digital Marketing Pvt Ltd. — Kolkata, India
Full-Stack Developer — *May 2024 – Aug 2024*

- Developed a highly available web app for employee management and fraud prevention for the Kolkata sector of the National Restaurant Association of India, reducing employee fraud by 35% and boosting onboarding efficiency by 60% for over 200 businesses in the FnB sector.
- Configured and managed cloud infrastructure on AWS (EC2, S3, Lambda, SES), integrating Docker and Github CI/CD to automate build & deployment pipelines, achieving 99.9% uptime.

Aerial Delivery Research and Development Establishment — Agra, India
Machine Learning Trainee — *May 2024 – July 2024*

- Aggregated and analyzed 4-dimensional weather data from sources like ECMWF ERA5, MERRA-2, and NCEP/NCAR using Xarray and Dask for efficient parallel processing. Created dynamic visualizations and graphs using Seaborn and Matplotlib to understand the distribution of variables, identify patterns, and detect outliers.
- Applied normalization and standardization techniques to the data before converting it into Analysis Ready Cloud Optimized (ARCO) ZARR format using Xarray. This format was used as training and testing data for the machine learning model, ensuring efficient data handling and retrieval.
- Built a RESTful API with Flask in Python to showcase the plotted data and graphs in real-time. The API was designed to handle large datasets and provide interactive visualizations to stakeholders.
- Containerized the entire application using Docker, ensuring consistent deployment across different environments.

Projects

LunarLander-DQN | *Python, Deep Q-Network* — Ongoing

- LunarLander-DQN implements DQN with all its extensions, based on Rainbow: Combining Improvements in Deep Reinforcement Learning to increase the efficiency of training the model and reduce the overestimation of bias.

Mario-RL | *Reinforcement Learning, NES-py*

- Implemented Double Deep Q Networks for reducing the overestimation bias and the variance of the Q-learning update, and thus improving the stability and performance of the algorithm.

Technical Skills

Languages: Python, Typescript, SQL, Go
Frameworks/Libraries: Matplotlib, Pandas, Xarray, Dask, Pytorch, Next.js, Hono, Bun

Certificates

Oracle Cloud Infrastructure 2024 Certified AI Foundations Associate — July 2024