PRAPTI MAITRA
Software Engineer
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EDUCATION

UNIVERSITY OF EDINBURGH — Edinburgh, UK
Bachelor of Science (Honours) — Sept 2019 - July 2024

Major in Computer Science and Mathematics
Grade: Upper Second Class (2:1)
Coursework: Introduction to Computation, Software Engineering; Operating Systems; Algorithms and Data Structures; Computer Communications and Networks; Computer Security; Principles and Design of IoT Systems; Object Oriented Programming (OOP); Financial Mathematics ; Partial Differential Equations; Stochastic Calculus; Statistics; Probability;
Societies: Hoppers Informatics Society, Hack The Burgh, Informatics Tutoring Scheme, Maths Outreach Team, TEDxUniversityofEdinburgh, Edinburgh Junoon

WORK EXPERIENCE

SYNERGY GULF. (trading and consulting firm) — Doha, QA
Freelance Web Developer — March 2025 – Present

- Rebuilt the company's B2B website using Tailwind CSS, improving performance, design responsiveness, and overall user experience across devices.
- Worked directly with business stakeholders to gather requirements and ship updates iteratively under tight deadlines.
- Delivered a scalable and SEO-friendly front-end architecture, improving client engagement and credibility in the sustainable energy sector.

PRIMARK. (retail company) — Edinburgh, UK
Retail Assistant (Temp, Holiday Hire) — Nov 2024 – Dec 2024

- Supported customer service and checkout operations during the peak holiday season, handling high footfall with speed and professionalism.
- Assisted shoppers with queries and stock availability, demonstrating strong communication and people skills.
- Worked flexibly across departments, adapting quickly to store needs and fast-paced retail demands.

HEALYNC LLP. (health-tech startup) — Kolkata, IND
Data Science Internship — May 2022 – Aug 2022

- Performed data extraction and analysis of over 500 patient records from a MongoDB database to generate insights on healthcare delivery metrics.
- Designed a PowerBI dashboard that helped doctors quickly identify treatment gaps across three key patient groups.
- Participated in standups and code reviews as part of an agile environment, ensuring continuous feedback and team alignment.
- Worked in a cross-functional team and reduced project turnaround time by 2 weeks.

PROJECTS

CRYPTO PORTFOLIO API

- Built a scalable RESTful API using Go, PostgreSQL, and JWT to allow users to manage cryptocurrency portfolios, track asset performance, and perform secure account operations.
- Deployed application on cloud platform Heroku, with a focus on fault tolerance and real-time responsiveness in financial data handling.
- Initiated and completed independently as a deep-dive into how financial systems operate under real-world constraints.

OPENDBML - IN-DATABASE ML FRAMEWORK

- Developed and expanded an end-to-end data preparation Python API that performs ETL processes for in-database machine learning (IDML) systems.
- Integrated data conversion support for 2 additional IDBML systems, expanding the API's compatibility from 1 to 3 systems.
- Added 6 new features, including train/test splitting, one-hot encoding, dimensionality reduction, and exploratory plotting.
- Benchmarked model performance across all three frameworks, comparing runtime and RMSE to evaluate system-specific trade-offs.

HUMAN ACTIVITY RECOGNITION APP

- Built and trained a bi-LSTM model in Python using TensorFlow/Keras, achieving 97.7% accuracy in classifying physical activities from sensor data.
- Cleaned and preprocessed time-series data using Pandas, NumPy, and scikit-learn to optimise model performance.
- Converted and deployed the model with TensorFlow Lite for real-time inference in a Kotlin-based Android app as part of a cross-functional team project.
- Utilised Git for version control to support agile collaboration, seamless code integration, and efficient peer reviews.

DRONE DELIVERY SYSTEM

- Built a Java application to calculate the most efficient delivery route for a pizza delivery drone, with minimal battery usage and avoiding no-fly zones.
- Used a Greedy Algorithm to find the closest delivery points and optimise the route based on available battery moves.
- Created GeoJSON files to map out the optimal delivery path, allowing easy visualisation of drone routes.

SKILLS & CERTIFICATES

Programming Languages: Python, Java, Golang, C++, JavaScript, Kotlin
Frameworks: React.js, HTML/CSS, Next.js
Backend & Databases: REST APIs, PostgreSQL, MongoDB, SQL
DevOps & Tools: Git, GitHub, Heroku, Bash (shell scripting), VS Code, Maven, Gradle
Data & ML Tools: Power BI, Jupyter Notebook, NumPy, Pandas
Other: Linux, QEMU, GDB, LaTeX
Certificates: Introduction to DevOps (Coursera), Introduction to Machine Learning (Coursera), J.P. Morgan Software Engineering Virtual Internship (Forage)