Manuj Mishra

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EDUCATION

University of Oxford – ***MSc Advanced Computer Science*** *Oct 2022 – Oct 2023*

Imperial College London – ***BEng Joint Mathematics and Computer Science (First Class)*** *Sep 2019 – Jul 2022*

- **Ranked 1st in cohort**, received Governor's Award for best overall performance (84%)
- Key Modules: Software Engineering Design (91%), Algorithms II (84%), Numerical Analysis (98%), Compilers (90%)

King's College London Mathematics School – ***A-Levels (4 A*s)*** *Sep 2017 – Jun 2019*

- Sixth Term Examination Paper (STEP) I - Grade 1 (**Top 300** students in UK); British Mathematics Olympiad - Merit

Tiffin School – ***GCSE (12 A*s)*** *Sep 2012 – Jun 2017*

WORK EXPERIENCE

Rebellion Defence – ***Machine Learning Engineering Intern*** *Jun 2022 - Sep 2022*

- Developed production-grade ETL pipelines using Dagster data orchestration to instigate runs based on external state changes
- Built, benchmarked, and integrated PCA-based data drift detection models using sklearn to monitor changes in distribution
- Replicated results from recent academic papers using PyTorch to configure, train, and tune ML models for object detection

American Express – ***Software Engineering Intern*** *Jun 2021 – Aug 2021*

- Automated supplier registration process for Buyer Initiated Payments team reducing onboarding time from days to minutes
- Built a Java Spring Boot microservice utilising HMAC tokens to establish secure connectivity to external APIs
- Delivered guild sessions on functional programming to 30 tech interns covering lazy evaluation and type inference in Haskell

Wave Wellbeing – ***Co-founder*** *Jun 2021 – Nov 2021*

- Initiated a programme to help new students navigate the stresses of university life via trained student wellbeing mentors
- Developed a web app for 50+ students to track and share moods with mentors using React, Django (Python), and PostgreSQL
- Integrated an NLP machine learning engine, leveraging sentiment analysis to identify negative trends in students' moods
- Established relationships with 22 key stakeholders including charities, researchers, competitors, and counsellors

Imperial Centre for Higher Education Research – ***Software Engineer*** *Jul 2020 – Sep 2020*

- Developed an app using Flutter and Django for 1000+ annual participants in an award programme to track their progress
- Collaborated with 2 engineers to spearhead the deployment of a successful prototype, now being tested campus-wide
- Conducted 3 focus group sessions to iteratively gather feedback and guide specification development with key stakeholders

PROJECTS

Solana Research Project - ***Imperial Centre for Cryptocurrency Research*** *Aug 2021 – Sep 2021*

- Investigated properties of the Solana blockchain and consensus mechanism in comparison to other proof-of-stake chains
- Implemented and deployed an escrow smart contract on the Testnet cluster using Rust and the Solana SDK

Algorithmic Trading Bot - ***Spark University Hackathon*** *Jul 2020 – Sep 2020*

- Developed an algorithmic trading bot yielding 39% profit over 8 weeks to win 2nd place prize in Luno Trading Challenge
- Implemented technical indicators (e.g. RSI, MACD, EMA) in Go and deployed bots to AWS EC2 instances
- Analysed and benchmarked algorithms using Python to back test on 6 months of historical price data from Kaggle

Queueing simulation - ***King's Certificate Research Project (funded by Dyson)*** *Sep 2017 – May 2018*

- Devised new strategies to reduce queueing times in Dyson's cafeterias by 70% within a team of 4 student researchers
- Implemented visualisations in Python to analyse novel queueing strategies and presented findings to stakeholders
- Analysed data from practical experiments to verify statistical models derived from current literature on queueing theory

AWARDS AND SKILLS

Academic Awards

- Governor's Award (Ranked top in cohort)
- Corporate Partnership Prize (Distinguished thesis)
- Dean's List 2022 & 2023 (Top 5 in cohort),
- IBM Group Project Prize 2022 (1st / 50 teams)

Languages

- Python, Java, C, Haskell, Go, Rust, Javascript

Hackathons

- IC Hack 2023 (Winner - Moonshot Category)
- United Nations Privacy Hackathon 2023 (Winner)
- IC Hack 2022 (Runners up - Most Entrepreneurial)
- AstraZeneca Neurodiversity Hackathon (2nd / 30 teams)
- IC Hack 2020 (Runners up - Newcomers Category)
- Spark University Hackathon (2nd / 30 teams)