Melinda Morkeh

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Education

Computer Science Integrated Masters (BA / MCompSci) - University of Oxford   **Oct 2024 - Present**
Passed first year, and achieved a distinction in the practical component.

Work Experience

INSIGHT Programme - Jane Street   **Apr 2025**
London, UK
- Selected through a competitive pool of 1000+ applicants to participate in a one-week insight programme.
- Completed 5+ hours of sessions on data structures, algorithms, and system design, and came first in an estimathon.
- Collaborated on coding tasks involving market data analysis and efficient debugging in a production style environment.

AI/ML, Database Modelling & Software Engineering Internship - Legal-Pythia LLP   **Mar 2025**
Remote
- Interned at Legal-Pythia for a week, contributed to a Python-based document reading software.
- Collaborated on version management using GitHub and enhanced file processing for an LLM.
- Made key improvements, boosting scalability and professional usability, allowing the software to be used on two more types of documents, alongside writing clear and comprehensive tests for program usage.

FOCUS Programme - Jane Street   **Jan 2025**
London, UK
- Selected for a two-day programme involving live trading simulations and time-critical problem-solving tasks.
- Gained practical insights into market making and investor strategies, consistently generating in simulations.
- Successfully resolved a high-pressure incident management challenge within a strict 20-minute deadline.

Summer Work Experience - J.P. Morgan Chase   **Aug 2023**
London, UK
- Spent one week at the technology department at JP Morgan Chase following a successful application.
- Collaborated with others to create a new bank, where my group placed first for our bank design.
- Coded a virtual robot in Java, which was then battled against twenty others, resulting in our robot placing third.

Projects

Real-Time Multi-Asset Market Data Stream Analyser | Python, asyncio, websockets, pandas, numpy, numba, Plotly Dash, Docker
- Built a low latency streaming system in Python asyncio, processing ~200 ticks/sec per symbol with sub-200 ms median latency from Binance WebSocket APIs.
- Developed real-time metrics (SMA, EMA, VWAP, volatility) and rolling correlation matrices for 3-10 assets, visualised via a Plotly Dash dashboard with price charts and volatility heatmaps.
- Added historical replay mode, CSV export, and fault-tolerant ingestion with auto-reconnect; optimised via NumPy vectorisation for ~3x speedup.

CV Scanner | Python (Django), Node.js, Tailwind CSS, React, Figma
- Collaborated with a colleague to design and develop a full-stack CV scanning application using Django for the backend and React for the frontend, reducing manual CV screening time by an estimated 70%.
- Produced a comprehensive wireframe in Figma, accelerating frontend development and ensuring consistent UI/UX.
- Built an interactive web interface enabling users to upload CVs, automatically extract structured data, and match candidate profiles to keywords from job listings, achieving 85% keyword-matching accuracy.

Algorithm Visualiser | Next.js, React, TypeScript, Tailwind CSS, Monaco Editor
- Developed an interactive educational platform that visualizes core algorithms through animated, step-by-step execution flows.
- Integrated Monaco Editor to deliver an in-browser code editor with real-time syntax highlighting and live algorithm execution.
- Engineered GIF export functionality using ffmpeg.wasm, enabling users to share over 500 algorithm animation clips monthly.
- Implemented secure user authentication via Clerk, managing authentication for a growing user base.

Skills and Interests

- Coding Languages: Python, Scala (Proficient), C, Haskell, HTML, CSS, JavaScript, TypeScript, Java, SQL (Intermediate).
- Oxford Afro-Caribbean Society IT Representative and Oxford Women in Computer Science Industry Representative.