Andreas D Campbell

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Software engineer with a focus on low-latency systems and real-time analytics computation for FX and rates trading. Hard-working problem-solver looking for a collaborative environment to deliver robust, production-ready solutions.

EXPERIENCE

FXEM Trading and Risk, Technology Associate, Morgan Stanley, London, England   Aug 2023 – Present
- Developing a low-latency real-time risk engine (C++, Python, Bash, Perl) calculating intraday risk and PnL for FX and linear rates products, enabling traders to hedge $bn daily notional.
- Leading the development and on-boarding of new financial products within the risk engine by extending the risk library.
- Developed real-time monitoring tools (Python) tracking server health (CPU/memory) and financial curve validity, ensuring model alignment with live market data.
- Enhanced risk model reliability via rigorous regression testing and manual checks, ensuring consistency/improvement across releases.
- Primary liaison between Traders/Quants and Tech for production issues and new trading model/portfolio onboarding whilst on-call.

Software Engineering Intern, Amazon Web Services, Cagliari, Italy   Jun 2022 – Sep 2022
- Boosted performance by 40% in client data transfer speeds by developing Windows-to-Linux file system redirection for AWS's remote display protocol (C, Rust, Protobuf), using low-level POSIX optimisations.

Technology Placement, Morgan Stanley, London, England   J un 2021 – June 2022
- **Full-Stack Developer** using financial APIs to detect market trends/anomalies for bankers (Java/Spring, Angular/TS, MongoDB).
- **Data Engineering**: Transformed EUREX options/futures data using ETL tools for analytics.
- **AI/Algorithms**: Placed 3rd in firm-wide competition by implementing heuristic-driven minimax algorithm (Python) for Ultimate Tic-Tac-Toe.

Founder, BugHub, Newcastle, England   Sep 2019 – Sep 2020
- Founded a startup providing security audits for early-stage companies; identified critical vulnerabilities (SQLi, XSS, CSRF) across 3 UK clients.

Researcher, BugCrowd, Remote   Jan 2017 – Sep 2019
- Identified security vulnerabilities in enterprise web applications, including data exposures at Uber and unauthorised redirects at SkyScanner and Under Armour.

EDUCATION

Newcastle University, Newcastle, England   Sep 2019 – June 2023
1:1 First Class in BSc Computer Science with Industrial Placement
- **Dissertation**: *"Can mimicking human experiences, emotions and writing style lead to a more impactful experience with AI?"* – Engineered models (Python, Gaussian dist., error injection) mimicking human writing/emotions; 75.3% of survey participants mistook outputs for human-generated text.
- **Low-Latency Systems:** Reliable UDP File Transfer (C), IPC Integrity (C). **ML/Data:** Banking expense classifier (Python, Scikit-learn, pandas), CNN Image Classification on CIFAR-10 (TensorFlow/Keras), Protein sequence analysis (pandas). **Security:** Secure Java Lottery Web App (Tomcat, MySQL) featuring password hashing, encryption, SQLi filtering.

SKILLS

Computer Languages: C++, Python, Java, C, Bash, Perl, Typescript, Rust, SQL
Familiar Technologies: Linux, CPS, Docker, Prometheus, Grafana, Eigen, Boost, Redis, Kafka, Train, pandas, Keras, TensorFlow, Matplotlib, MySQL, Django Framework, Spring, MongoDB, Apache Servers, Angular, Jenkins, Protobuf, AWS (EC2)

INTERESTS

Team Leader, Refuge Network International, London, England   Sep 2021 – Jun 2022
Volunteer, Grassmarket Community Project, Edinburgh, Scotland   May 2018 – Jun 2019
Interests/Sports: Boxing / Ice Hockey / Open water swimming / Chess / Music Production