Andreas Campbell

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Profile

Software Engineer specializing in low-latency systems and real-time risk computation for FX/rates trading (C++, Python, Linux). Proven experience building a mission-critical risk engine at Morgan Stanley and optimising high-performance protocols at AWS. Combining deep systems programming expertise with quant finance exposure and a 1:1 Computer Science degree.

Employment History

Aug 2023 — Present

London

Technology Associate at Morgan Stanley

- **Developing** a low-latency real-time risk engine (C++, Python, Bash, Perl) calculating intraday PnL for linear rates products, enabling traders to hedge $bn daily notional.
- **Leading** the development and onboarding of new financial products within the risk engine by extending our risk library.
- **Developed** real-time monitoring tools (Python) tracking server health (CPU/memory) and financial curve validity, ensuring model alignment with live market data.
- **Deploying** new releases across 7 global plants for 3 repositories.
- **Enhanced** risk model reliability via rigorous regression testing and manual checks, ensuring consistency/improvement across releases.
- **Key Collaborator**: Primary liaison between Traders/Quants and Tech for production issues and new trading model/portfolio onboarding.

Jun 2022 — Sep 2022

Cagliari

Software Engineering Intern at AWS

- **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.
- Contributed to a secure, high-performance protocol for cloud desktop/application streaming.

Jun 2021 — Jun 2022

London

Technology Placement at Morgan Stanley

- **Full-Stack Development**: Developed a client engagement web app (Java/Spring, Angular/TS, MongoDB) using financial APIs to detect market trends/anomalies for bankers.
- **Data Engineering**: Transformed EUREX options/futures data using ETL tools for analytics.

Links

GitHub

LinkedIn

Skills

C++

Java

Python

Bash

Linux

Redis

Kafka

Protobuf

AWS (EC2)

Languages

German

Hobbies

Boxing, Ice Hockey, Open water swimming, Chess, Guitar and Bass

- **AI/Algorithmics**: Placed 3rd in firm-wide competition by implementing heuristic-driven minimax algorithm (Python) for Ultimate Tic-Tac-Toe.

Sep 2019 — Sep 2020

Newcastle upon Tyne

Founder at BugHub

- **Founded** a startup providing security audits for early-stage companies; identified critical vulnerabilities (SQLi, XSS, CSRF) across 3 UK clients.

Jan 2017 — Sep 2019

Researcher at BugCrowd

- **Identified** security vulnerabilities in enterprise web applications, including data exposures at Uber and unauthorized redirects at SkyScanner and Under Armour.

Education

Sep 2019 — Jun 2023

Newcastle upon Tyne

Newcastle University

BSc Computer Science with Industrial Placement, 1:1

- **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.
- **Key Projects**:
  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.

Aug 2012 — Jul 2019

Edinburgh

George Heriot's School