Karl Kareem Melaimi

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Education:

Imperial College London **2018 - 2022**

MEng Electronic and Information Engineering (Computer Engineering) **Grade 2:1**

Key Topics: Probabilistic Inference, Stochastic Processes, Mathematics for Machine Learning, Statistical Signal Processing, Knowledge Graphs and inference, Deep learning, Decentralised Finance

Wembley High Technology College **2010 - 2017**

- A-Levels: Mathematics (A*), Further Mathematics (A*), Physics (A), AS-Economics(A)

Key Skills: KDB, Python (PyTorch, NumPy, Pandas, Matplotlib, etc.), C++, F#, C & Arm Assembly

Relevant Work Experience:

SquarePoint Capital, Core Data Software Engineer **Feb 2025 - Now**

Aspect Capital, Quant Researcher, Execution Research **May 2022 - Dec 2023**

- Aspect, trying to diversify it's business has shifted it's focus toward higher frequency strategies, I was an initial developer/researcher of a greenfield build of **KDB+** infrastructure tasked with producing code that could seamlessly aggregate tick data into higher frequencies (1-5 Mins)
- Strides were made in the optimisation of data retrieval, using creative methods for partitioning data on disk, as well as building command line tools for python (PyKx) based calls to KDB processes for researchers to easily use data
- Focused on **statistically cleaning quote/trade data** for Futures, FX, FX forwards, Indices & LMEs, applying asset class specific transformations to serve research teams with high quality data.
- Understanding **market microstructure** was paramount, the intricacies of different asset classes needed to be understood to build great software/statistics. My implementation of how we apply adjustments to futures given a roll schedule; calculating a better mid price using volume weighted medians for aggregation in certain asset classes or **spinning up live dashboards** to analyse the distribution of quotes/volume at different times of the day for **algo development** are examples of my work in **Q**

Aspect Capital, Investment Solutions & Quant Research Intern **March 2021 – Oct 2021**

- Notable projects: Built a simulation environment for the **Investment Solutions** team in **Python**, integrated with **PowerBI**. It applied various **vectorised** methods to transform the PnL timeseries input into key statistics (**VaR**, **CARR**, **Drawdowns** etc) and graphical visualisations in an **interactive dashboard**.
- Developed a low touch framework for **multivariate regression**, enabling colleagues to run regressions of macroeconomic variables against returns without looking at any code (**Python**, **SQL**).
- Built intraday reporting tools for the **Volatility Research** team in **MATLAB** which attributed PnL to **first** & **second order Greeks**, granting a more thorough understanding of the underlying market dynamics affecting our positions.
- Gained familiarity with the nuances of option pricing as well as experience with productionising code (**Jenkins**, **Docker**, etc)
- Worked with **Systematic Global Macro** researchers to prepare a signal for a **research review**, this is IP sensitive so no details for you!

Tudor Investment Corp, Quant Risk Analyst **July 2019 – Sept 2019**

- Developing a range of tools for the Risk team in Python (Significant Bloomberg API use) used by ~10 people across £10B AUM
- Acted as Full Stack Developer managing successful firmwide deployment across business (2k lines of production code live)

- Aiding traders in performing market analysis by providing statistical analysis and data visualisation to their workflow

Bloomberg, Global Data Analyst, Economics **Sept 2017 – Sept 2018**

Other Experience:

Jane Street, Electronic Trading Competition **October 2020**

- Developed a novel trading strategy in a simulated market maintaining top 10 PnL rank… It all went wrong when I replicated code without changing the trade direction, causing me to buy a certain instrument without selling, incurring roughly 300k of debt. I have learned my lesson!

IMC, Quantitative Trading Workshop **October 2020**

- Learned the basics of Option theory and implemented a few interesting strategies, including delta-one hedging

Facebook, Analytics Academy 2020 **October 2020**

- Performed basic statistical analysis to discover insights about user habits from multiple datasets using Python, (NumPy, Pandas, etc), and present these to a panel at Facebook

Citadel, Trading Simulation Challenge **November 2020**

- A comprehensive introduction into the roles of a hedge fund and market maker; challenges included manual market making to get to grips with the concept and then an automation challenge in Python

Projects:

- Built a **MIPS1 CPU simulator (C++)**, a **C90 to MIPS Compiler (C++)** and a **C90 to Python translator (C++)**
- Built the backend (**RESTful API in Python**) of an app for identifying & aiding the recycling of rubbish on the street, **winning** the 2019 **Google BGN Hackathon**
- Developed real-time traffic sign detection software with a **Xilinx PYNQ-Z1 FPGA**, using **Vivado HLS & C**

Skills and Interests:

- Frequently practice Judo (Brown belt), competing regularly in national competitions
- Member of the **Amos Bursary** which aims to enhance the professional careers of young black men through the provision of knowledge alongside academic, cultural and professional events
- Lover of improving health through exercise; level 3 Personal Trainer, Spin cycle/Boxercise/Strength & Mobility instructor teaching classes multiple times a week after work
- Lover of all music!! This includes RnB, Grunge, House, Soulful house, Rock, Neo-Soul, Jungle, DnB, Funk, etc… Ask me for a Spotify playlist :)