

# Karl Kareem Melaimi

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## Education:

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Imperial College London

2018 - 2022

MEng Electronic and Information Engineering (Computer Engineering), 4th year modules:

- Wavelets, Representation Learning & their Applications
- Optimisation
- Adaptive Signal Processing & Machine Intelligence
- Mathematics for Machine Learning
- Probability & Stochastic Processes
- Probabilistic Inference
- Deep Learning

3<sup>rd</sup> year grade: 67.7%

Wembley High Technology College

2010 - 2017

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

## Relevant Work Experience:

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Aspect Capital, Investment Solutions & Quant Research Intern

March 2021 - Oct 2021

- Notable projects (used often to answer period specific client queries): 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 macro variables (scraped from BBG) against returns without looking at any code.
- Built intraday reporting tools for the **Volatility Research** team in **MATLAB** which attributed PnL to **first** and **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!
- Efforts culminated in a **full time offer** as a **Quantitative Researcher**!

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

Kaiku, (<https://www.kaiku.co/>) - Strategy & Deals

October 2018 - December 2019

- Reaching out to & handling **manual onboarding** of our start-ups & Investors
- **Leading** the product team, deciding/creating the content for our website & social media
- Consulting entrepreneurs, interviewing understand content requirements and start-up user needs

Bloomberg, Global Data Analyst, Economics

Sept 2017 - Sept 2018

- Carrying out data analysis within **Python**, using Pandas/NumPy/Matplotlib.
- Created a script used in monthly meetings to provide insights into stale tickers
- Data manipulation within **Excel/VBA** and internal Bloomberg tools for parsing data

- 100% of client queries answered within Service-Level agreement time

## Other Experience:

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### 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. Please ask me about this!

### 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:

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- 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:

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- Proficiency in Python (NumPy, Pandas, Matplotlib, etc.), C++, C & Arm Assembly language
- I have an interest in trivia and casual problem solving demonstrated by my participation and 3<sup>rd</sup> place position in the Jane Street CStimathon
- 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
- Level 3 Personal Trainer and Spin Cycle Instructor
- Lover of all smooth, sexy, sultry music!! This includes RnB, Soul, Neo-Soul, Funk, etc...