

Joey Dwonczyk

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QUANTITATIVE DEVELOPER

Quantitative developer with expertise in designing and implementing sophisticated financial models for derivatives pricing, focusing on credit and structured equity products. Experienced in Python, C#, Flutter, Node and Web for quantitative analysis and financial engineering. Proven track record of working with trading desks to develop robust risk management solutions, pricing tools (VBA + Excel + Python + C#), and optimization strategies for financial instruments.

TECHNICAL SKILLS

Languages	: Python, Typescript + Javascript, HTML, CSS, SASS, Dart, C#, C++, R, VBA, Solidity
Frameworks	: Node.js, Flutter, React, Redux, Express.js, Firebase, Web3Auth
Libraries	: Flask, Pandas, Tensorflow, Keras, OpenCV, HuggingFace, YahooFinance, QuantLib <i>to name a few</i>
Financial Models	: CDS Pricing, Monte Carlo Simulations, PDE Solving, Vanilla Equity Options, Rate Swaps, OTC Eq. Options, IR Bonds, Inf-li Bonds, FX Swaps, Equity Basket Options
Cloud & DevOps	: AWS (EC2, S3, SES), Docker, GCP, Heroku
Databases	: Neo4j, SQL, MongoDB, PostgreSQL
Blockchain	: Fuse Blockchains, Solidity Smart Contracts

EXPERIENCE

Founder, Joey's Jars

London, UK

Jan 2024 – Present

Remote

- Launched and scaled a health-focused food tech business, overseeing operations, sales, and app development for corporate wellness.
- Developed a Shopify platform with custom features and began building a fitness tracking app with smart fridge integration using a Flutter | Firebase | (GoogleAuth / OAuth) | Python FastAPI Back-end hosted on Heroku | CI CD Environment automated testing in git commit pipeline.

CTO, Founder, vegi

Liverpool, UK

Summer 2021 – Dec 2023

Remote

- Designed and developed a comprehensive eco-conscious debit card platform, implementing the full application suite from scratch with a 2 PostgreSQL databases connected to a **NodeJS** EC2 hosted back-end for client data alongside a basic Sailsjs back-end for administrative operations. I then wrote and scaled a cross-native flutter (dart) application for clients to use to buy products on, for merchant businesses to administrate from and to facilitate the connection I built between the dart code stack and Ethereum layer 2 blockchain for piping payments. I built intricate algorithms for real-time cashback based on product eco-ratings which were rated using a python FastAPI fully async, multi-pool, back-end I hosted in a docker container to then run from a Heroku server which was the most cost effective solution for the engine. **The application I wrote from scratch was valued at £120,000 circa December 2022.**
- Dockerized complex Conda (**Python**) containers for machine learning algorithms and managed the entire AWS cloud infrastructure, lambda serverless functions, including S3, SES, and EC2 to host our PostgreSQL databases.
- Led the backend development with NodeJS and integrated Google authentication and experimenting with a Neo4j graph database for storing product embeddings.
- Responsible for communication of technology + payments infrastructure to all merchant clients to facilitate on-boarding and satisfy their technical requirements.
- Organised the second major fund-raise of £100K in end of 2022 building pitch assets and projections.

Senior Associate, Structured Equity Trading Desk

River and Mercantile Derivatives (now Schroders Bank)

2021 – Present

London, UK

- Executed OTC equity derivatives trades, live pricing against counterparties, and best price execution using platforms such as Tradeweb, Longview, Markitwire, and OTCX.
- Designed and structured equity strategies for pension schemes, balancing client risk preferences with market conditions, including hedging strategies and FX exposure management.

- Conducted risk management analysis, ensuring collateral sufficiency, MTM calculations, and autonomous client position checks using Risk01s and valuation time series.
- Managed portfolio structuring, strategy monitoring, and automation of client reporting, enhancing client diversification and reducing business risk.
- Supported prospective client pitches by preparing decks and presenting structured strategies based on market insights and client needs.

Senior Associate, Quantitative Engineering Desk
River and Mercantile Derivatives (now Schroders Bank)

2017 – 2020
 London, UK

- Developed and maintained financial curve builders used for discounting and projecting values in the valuation of financial products, including bonds and swaps.
- Built and maintained bond valuation models, adding new functionality to the VBA Excel add-in for communicating with internal systems via HTTP.
- Enhanced swap leg pricing by simplifying logic and updating statistical analysis processors for interest and inflation swaps, using correlation analysis of time-series data.
- Implemented a SignalR streaming service in a web API to process real-time ticks from Bloomberg, rebuild financial curves, and stream updates to clients.
- Utilized Python for time-series analytics, clustering, PCA, and client/counterparty actions, using tools like Scikit-learn, Numpy, and Pandas.

EDUCATION

University of Warwick
Integrated Master of Mathematics and Statistics

2011 – 2015
 First Class Hons

Fitch Learning
Certificate in Quantitative Finance

2019
 Distinction

Cambridge Spark
Certificate in Applied Data Science

2020
 Distinction

PROJECTS

Basket CDS Pricer

Python, QuantLib, C++

[Source Github](#)

- Built a sophisticated pricing model for basket credit default swaps (CDS), employing Monte Carlo simulations and PDE solving for accurate pricing and risk assessments.

Structured Equity Pricing Tool

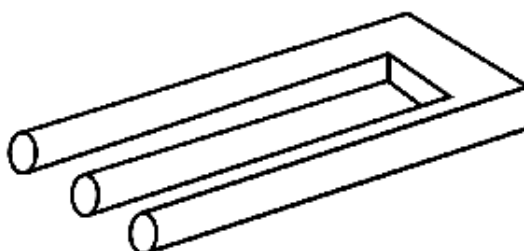
VBA, C#

[Proprietary](#)

- Developed an equity derivatives pricing tool to price and risk-manage exotic options and variance swaps, utilizing advanced financial modeling techniques.

CERTIFICATIONS

- Basic Solidity Smart Contracts Training
- [Certificate in Quantitative Finance](#)
- [Certificate in Applied Data Science](#)



Perspective