Maxime Antoine

Lead quantitative software engineer

maxime.antoine2@gmail.com
+65 8626 5710

A highly motivated, self-starter and enthusiastic quant engineer with 14 years of experience in quantitative and trading application development for the financial industry.
I bring a passion for innovation and a track record of delivering high-performance solutions to complex financial challenges

---

Experiences

Trading engine development

Bitmex - Since May 2024 - Singapore

- Building a next generation trading engine for the OG crypto derivatives exchange.
- Multi-asset margining, liquidation, ADL and insurance fund management in a high performance and low latency distributed environment with up to 250x leverage.
- Main technologies: Java, KDB, SQL.

Quant Engineering

Bullish - January 2023 to May 2024 - Singapore

- Bullish is a regulated digital asset exchange that delivers reliable, low-cost liquidity and enables customers to earn income from automated market making.
- Design and development from scratch of a margin trading system with peer to peer lending handling >40m/day notional at the time of leaving.
- Design and development from scratch of a perpetual futures trading system, including auto market-making, handling >2.5bn/day at the time of leaving.
- Delivered improvements to the auto market maker at the core of the Bullish exchange and researched portfolio margining and options.
- Mentoring of junior members of the team.
- Main technologies: Java, Python, SQL.

VP - Global Markets - FX eTrading Strats

Nomura - September 2020 to January 2023 - Singapore

- E-Trading Strategy sits within Nomura’s Global Markets division as part of the Digital Office, following a “strats” model rather than being a more traditional IT function.
  We are a user oriented team operating globally in Tokyo, Singapore, London and New York.
  We are responsible for all E-Trading platforms in the dealer-to-client and dealer-to-dealer spaces, including pricing, execution and price distribution, across cash and derivatives.
- Worked with a large team of consultants to deliver a successful rebuild of Nomura Live, Nomura's FX Single Dealer Platform.
  (Technologies: React, Openfin, Java, Caplin FX, LMAX disruptor, KDB, SQL).
- Designed, developed and successfully released a new desktop UI for traders to configure and stream FX curves.
  This greatly improved both traders control over the curves and streaming latency.
  (Technologies: C# WPF, Tibco).
- Developed a fast historical blotter that can search, sort and filter millions of trades.
  (Technologies: Java, LMAX disruptor, Caplin).

AVP - Equity eTrading Technology

Credit Suisse - January 2019 to September 2020 - Singapore

- Design and development of components for the cash equity trading system following micro-services architecture principles, including:
- A trading mandate system from scratch including the front-end in React, back-end in C#, Redis, SQL and a full coverage of unit and end-to-end tests.
- A client portfolio pricer for the equity financing desk using F# and React.
- Promotion and implementation of agile methodologies (TDD/BDD, continuous integration, continuous delivery, containerization, ...) in the team.

Senior Quantitative Developer

Capitalab (BGC Partners) - December 2017 to December 2018 - Singapore

- CapitaLab is a quantitative financial technology group within BGC Partners, responsible for optimising portfolios of financial derivatives for large investment banks and buy-side clients.
- Tech lead embedded in the quant team I was responsible for the architecture, performance and scalability of the portfolio optimisation engine.
- Delivered exponential performance gains in the portfolio compression engine: from 2h30 to 3 mins through algorithmic complexity reduction and better use of data structures.

Skills

Languages

- French (native langage)
- English (fluent)
- Mandarin (basic)

Technology

- General programming (Python, C#, Java)
- Functional Programming (F#)
- AI driven development (GitHub Copilot, GPT 4)
- Web Applications (React, REST, web sockets)
- Algorithms and data structures
- OOP Design Patterns
- Domain Driven Design
- Microservices Architecture
- Low latency coding

Finance

- Structure, pricing and risk of standard derivatives
- Interest rate term structure modelling
- Linear optimisation in high dimensions
- Strategies back testing
- Monte Carlo

- Halved the memory used by the risk calculation engine by fixing memory leaks and improving the multi-processing implementation.
- Improved the test framework: 3x test cases for 25% of run time through better parallelisation.
- Optimisation of SQL queries joining tables with billions of lines through indexing.
- Coached the quants on clean code, system design and test automation principles.
- Main technologies: Python, SQL Server, F#, multi-processing.

Senior Software Engineer

eFront - October 2016 to November 2017 - Singapore

- eFront is the leading software provider for the alternative investments and risk management areas of the financial services industry.
- Design and development of enhancements and new functionalities for APAC FrontInvest clients (C#, Javascript, SQL) both in office and at clients premises.
- Key clients include GIC, Temasek, Mac Quarie, Khazanah, ADIA, ...

Quantitative Developer - Fixed Income

BNP Paribas CIB - November 2014 to September 2016 - Singapore

- Design & development of in-house tools for APAC FIT desks including:
- • An intraday PnL Forecast tool for Treasury APAC desks (Python).
- • A service providing real-time transfer rates for internal clients + corresponding contribution tools for treasury desks - 800+ users across APAC region (AngularJS, C#, SQL Server, Windows service).
- Improved team development practices by promoting SOLID and agile principles, TDD and streamlining the development pipeline through better use of source control and CI/CD.

Assistant Manager - FI / ALMT Valuation & risk control

BNP Paribas CIB - November 2012 to November 2014 - Hong Kong

- As part of the global fixed income risk and valuation control group:
- Lead the implementation of risk control procedures for ALM-Treasury for APAC scope
- Design and development of various IT tools (Python, Excel/VBA, C#/WPF) to automate team tasks
- Exposure to regulatory (Volcker rule,) and operational risk (rogue trading or "fat finger" prevention) problematics

Software Engineer

BNP Paribas CIB - October 2011 to November 2012 - London

- As part of the global fixed income risk and valuation control group:
- Business process analysis, requirement gathering and training of the end users.
- Design and development of an application to automatize the yield curve IPV process across the different participant teams (Europe, Americas, Asia).
- Exposure to yield curve construction and IR products valuation methodologies (FRA, bonds, swaps, IR options, swaptions, ...)
- Technologies: Excel/VBA, SQL Server, C#, ASP.NET MVC.

Software Engineer

Société Générale CIB - February 2011 to August 2011 - Paris

- Recast a tool aiming to predict end of day volumes across different parts of the company's SI.
- • Re-engineered and improved the proof of concept (VBA).
- • Designed and developed a new production version as a web application (PHP, Oracle).

Software Engineer

42 Capital - May 2010 to September 2010 - Paris

- Development of a position monitoring and risk management application for the company's trader (C# WPF, WCF, SQL Server).
- Backtesting of proprietary quantitative trading strategys with R.

Education

"Classes préparatoires aux Grandes Ecoles"

Lycée Claude Fauriel

September 2006 to June 2008

Undergraduate studies in mathematics, physics and chemistry (MPSI & MP) in preparation for competitive entrance exams to the top French engineering schools.

Engineering degree - Master's degree in computer science

EFREI - Ecole Française d'Electronique et d'Informatique

September 2008 to August 2011

Major in computer science with minor in financial maths.