Joseph Cumming

Singapore | +65 86094146 | joe@joecumming.com | https://joecumming.com

Summary

Experienced IT executive with 20+ years leading front-to-back risk and trading platforms at global financial institutions. Proven expertise in quantitative IT delivery, data analytics integration (Vertex AI), and high-performance risk/pricing systems. Based in Singapore with extensive APAC experience; seeking to leverage deep technical and domain knowledge in sovereign wealth technology operations.

Experience

ANZ — **Jan 2023 - Present**
Quant Delivery Manager — Singapore
https://www.anz.com.au

Responsible for the delivery of the Quantitative Trading Strategies platform; investigating IT systems for the realization of trading strategies to optimize hedging and cost performance.

Built role-based custom docker images in GCP for analysis dashboards based on JupyterHub to seamlessly integrate the local platforms and packages to the cloud. Wrote generic facades to dynamically select from local or cloud stores depending on requirements. Designed and implemented Python-based data pipelines for trading signal backtesting.

Currently integrating the Vertex AI platform into data analysis, code generation, back-testing and report summarization.

Daiwa Capital Markets — **Apr 2009 – Jan 2023**
Head of Risk IT (London) — London & Tokyo
https://www.uk.daiwacm.com

Head of the IT team responsible for support and development of the bank's Market and Credit risk platforms. Built market risk engine pricing a variety of instruments across desks and platforms to arrive at a consensus VaR realtime and end-of-day. Extended credit risk systems to provide intraday PFE exposure and limit monitoring.

Full-stack development with Java server and C# WPF client and Angular web applications.

Derivatives Quantitative Integration Team (Tokyo)

Responsible for support and development of pricing tools for the Equities Trading desk.

Developed global trade price discovery platform used for pricing indications to allow traders in London, Hong Kong and Tokyo to share information.

Developed and support most of the day-to-day risk and pricing spreadsheets used by the desk. This role used a combination of C++, C#, Excel, OLEInterop and ExcelDNA.

RBS Financial Markets / ABN AMRO — **Mar 2006 – Mar 2009**
Senior Developer — London
https://www.rbs.com

Senior Developer in Rates Product Development Group

Part of quant IT team developing and supporting the bank's main pricing libraries. The main focus is the speed and efficiency of the central pricing algorithms and front-end clients. The majority of the development is cross-platform C++ using Boost and STL libraries.

Achievements include reworking of Monte Carlo simulation routines to be multi-threaded; introduction of quasi-random sequences and integrator methods to Monte Carlo products. Integration of 'Forth' language inside pricing models to allow for scripted development of generic product payoff formulas & development of new user-interfaces for generic products in Excel.

Developed of a swig interface to the excel libraries, allowing for easy linking to non-excel interfaces. This allowed for the development of a stable risk system outside of excel written in C#.

Citadel Investment Group — **Feb 2005 – Dec 2005**
Senior Developer — London
https://www.citadel.com

Senior Developer working in the Market Data & Pricing Team, responsible for pricing applications dealing with credit default swaps and convertible options. Work is primarily C++ based, developing & maintaining services used in risk analysis, pricing and arbitrage.

Responsible for the convertible options pricing spreadsheet which was a pricing and position-keeping spreadsheet written in Excel VBA / COM used by front-office traders. Close liaison with traders to gather and implement enhancements was an essential part of the role.

Department reduced by 60% due to business losses.

RBS Financial Markets — **Jan 2003 – Feb 2005**
Technology Manager — London
http://www.rbs.com

Technology Manager in Interest Rate Derivatives & X-Product analytics. Part of the Common Analytics group, whose function is to provide a framework of common analytical models for use in pricing in all areas the bank. The core system is written in C++ and the code base is designed to be built on several platforms and compilers from Windows VC6&7 to Solaris gcc/forte and Linux/gcc.

The system has multiple proxy layers allowing it to interface with multiple applications. Clients can access the libraries in a uniform way from C++, VB, Excel, COM, Corba & Python. Directly involved in the design, coding & pricing of vanilla instrument libraries.

JPMorgan Chase — **Nov 2000 – Jan 2003**
Technical team leader — Bournemouth
https://www.jpmorganchase.com

Technical team leader for European Funding Initiative. This is a web based application designed to allow users to make funding decisions based on cash positions as trades settle intra-day. Data is received from a gateway and transformed through different MQ routes to a database where it is then distributed to web clients.

Technical team leader for Enterprise Reference Data project. A distributed application written in Java exposing reference data from distributed databases to clients around the bank. I achieved a 30% increase in performance of this application by reducing the complex interaction of the multiple classes to a simplified approach and by demonstrating the use of connection pooling and stored procedures.

Goldman Sachs — **May 1998 – Nov 2000**
Technical team leader — London
https://www.goldmansachs.com

Technical team leader for London division of the 'Client Coverage Workstation'. This is a global application written in C++ employing a distributed architecture connecting via a CORBA layer to various application servers and databases around the world. This application is the first to allow all GS offices to view the same real-time client data. Involved in all aspects from planning & design to coding, testing, rollout and support.

DERA (now QinetiQ) — **Mar 1994 – Mar 1998**
Project manager — Dorset, UK
https://www.qinetiq.com

Project manager of Target Motion Analysis group leading a team of four; engaged in research and development of Sonar Data Fusion & Passive Classification techniques. Developed global optimization routines to solve for localisation of emitters in a chaotic environment using propagation field analysis.

Previously project manager of sonobuoy division responsible for preparing research proposals and conducting preparations for a sea trial in collaboration with NATO.

Education

Eindhoven University of Technology — **1992**
Pure Mathematics — Postdoctoral research
https://www.tue.nl

- Postdoctoral research with S L J van Eijndhoven into the extensions of generalized functions as projections of Schauder spaces

University of Strathclyde — **1987 - 1989**
Pure Mathematics — PhD
https://www.strath.ac.uk

- Thesis: *A constructive approach to generalized functions*
- Published original results unifying generalized function theories using functional analysis and topology

University of Washington — **1987 - 1989**
Pure Mathematics — MA
https://www.washington.edu

- Graduate school covering real analysis, complex analysis, abstract algebra, functional analysis & differential topology

University of Strathclyde — **1983 - 1987**
Pure and Applied Mathematics — Bachelor of Science
https://www.strath.ac.uk

- BSc (Hons) 1st Class, Pure and Applied Mathematics.

Technical Skills

Core Languages
●●●●●
C/C++, Java, C#, Javascript, Python, Perl, VBA

Front End
●●●●●
MS-Forms, WPF, HTML5, CSS3, JQuery, Angular, Bootstrap

Databases
●●●●○
Sybase, Oracle, SQLServer, MySQL

Core Frameworks
●●●●●
Boost, WCF, Guice, Spring Boot, Hibernate, Jetty, REST, ExcelDNA

Build Frameworks
Proficient
●●●●●
CppUnit, MSTest, Mockito, Junit, PyUnit, Maven, Gradle

Methodologies
●●●●●
RAS, Agile, Scrum, TDD

Languages

Dutch
Conversational
●●●●○

German
Basic
●●○○○