Gene Boo Ee Jin

Quantitative Risk & Analytics Specialist

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Professional Summary

Quantitative risk specialist with 20+ years of experience in financial derivatives, risk modeling, and data analytics. Proven expertise in developing and validating risk models across multiple asset classes, leading technical teams, and delivering client-focused solutions. Adept at Python, VBA, and cloud-based platforms with a passion for optimization and innovation. Strong background in both buy-side and sell-side environments with regulatory compliance experience (MAS, BNM, Basel).

Core Competencies

Quantitative Analysis

- Financial Derivatives Pricing
- Monte Carlo Simulation
- Copula Modeling
- Gradient Boosting / FFT / PCA / Hybrid Modeling
- Risk Metrics (VaR, ES)

Technical Expertise

- Python (Pandas, NumPy)
- VBA/Excel Financial Modeling
- C++ Quantitative Libraries
- SQL & Database Management
- RESTful API Integration

Risk Management

- Market & Operational Risk
- Traded & Non-traded Risk
- IRRBB & Liquidity Risk
- Model Validation Frameworks
- Basel Compliance

Leadership & Strategy

- Team Leadership (5+ members regionally)
- Pre/Post-Sales Engagement
- Regulatory Communication
- Workflow Optimization
- Policy/Model/Technical Documentation

Professional Experience

IBMR Projects Consultant — Ambank Group
Mar 2025 - Present

- Provided SA-CCR implementation guidance across multiple asset classes
- Optimized Dupire PDE Local Volatility surface building in Python for VaR-testing engine
- Optimized Autocallable contract valuation in Python
- Developed accelerated Monte Carlo frameworks for derivative pricing
- Provided implementation guidance on IRRBB pre-payment modeling

Technologies: Python, Excel VBA

Product Specialist — Qontigo, AxiomaRisk (now Simcorp)
Dec 2021 - Jun 2023

- Directed pre/post-sales for AxiomaRisk and Performance Attribution solutions
- Conducted buy-side client demos across multi-asset classes (EQ, FX, FI, ESG, Crypto, Private Assets)
- Developed Python automation scripts using AxiomaRisk API, reducing report generation time by 70%
- Created Excel integration tools using XLWings for real-time market data access
- Collaborated with engineering teams to resolve complex client technical issues

Technologies: Python, Pandas, Jira, Salesforce, AxiomaRisk API, Postman

Senior Quantitative Analyst — Maybank Group
Sep 2019 - Aug 2021

- Designed Monte Carlo + bootstrap models for Operational Risk capital allocation
- Implemented Gaussian & t-copulae for tail-risk aggregation and Euler Allocation across 8 business units
- Built COVID-19 R_0 prediction model using polynomial regression (92% accuracy)
- Built FFT-based convolution tools for joint distribution modeling
- Developed Python-based custom multimodal distribution fitting tools

Technologies: Python, Excel VBA, SQL

Head of Market Risk Model Validation — Maybank Group
Mar 2014 - Mar 2019

- Led regional 5-member team validating traded/non-traded portfolio value and risk
- Presented validation results to senior management and regulators (BNM, MAS, HKMA)
- Developed independent pricing validation tools for FXO, IRO, Equity Derivatives
- Authored model documentation standards adopted bank-wide
- Designed IRRBB framework for non-maturing assets/liabilities

Technologies: Python, Excel VBA, C++, R, Matlab, MySQL

Senior Quantitative Analyst — Ambank Group
Apr 2009 - Mar 2014

- Developed benchmark pricing models for derivatives across FX, EQ, IR asset classes
- Created volatility surface generators and correlation modeling tools
- Mentored junior team members on quantitative techniques

Risk Specialist for a Software Project — Pilot Multimedia (now disbanded)
Jun 2007 - Jan 2008

- Developed staging tools for reading XML-based formulae into C# proprietary software for Credit Risk
- Implemented logistic regression-based tools for PD

Market Risk Analyst — Fortis Bank SA (now BNP Paribas Fortis)
Aug 2006 - Jan 2007

- Developed Asian Basket option pricing and Greek models for the market risk department

Contracts Analyst — Electrabel SA (now ENGIE)
Aug 2000 - May 2006

- Developed spark spread and crack spread pricers in VBA & C++ for the Middle Office
- Worked with Murex to incorporate Energy Derivatives into the risk engine
- Developed Winter method-based hourly profiling tool in SAS to capture hourly power profiles

Education

MBA, Global Management
Hochschule Bremen, Germany
Graduated: Sep 1999 | Grade: 1.0

BA, Business Administration
University of Hertfordshire, UK
Graduated: Mar 1998 | 2nd Upper Honours

Certifications

- AICB - Risk Management: Principles & Framework
- AICB - Risk Models, Capital & ALM
- Microsoft Visual Basic 6

Hobby Projects

FunkyGraffy

Edutainment math visualization platform

funkygraffy.onrender.com
Google Cloud mirror

Convolve!

Empirical convolution tool for joint distribution modeling

Coming Soon

Fit_it!

Continuous distribution fitting engine

fit-it-app.../run.app

Cermin Mata Ho

Client-side business site editable directly via Excel

geneboo.github.io/GBnfo/OptiStyle.html

Fourier Epicycle

Upload SVGs to generate animated Fourier vector drawings

Coming Soon

Gene's SaaS Universe

Mini SaaS REST endpoints supporting derivative pricing, quant analysis, Kalman filter & gradient boosting-based forecasting tools

Coming Soon

Written Works

Understanding Fourier Transform

Deep foundations of Fourier Transform and its application in convolution-based option pricing, with Python implementations.

PDF

FFT Cross Correlation vs Pearson Correlation

Demonstrates FFT-based correlation as a fast alternative to Pearson correlation. Includes Python code & quant examples.

HTML PDF IPYNB

Analytical Black-Scholes-like Pricing for European Options under Any Distribution

Applying moment-generating functions to derive drift corrections under the risk-neutral measure. A bridge between probability and pricing under any distribution.

HTML PDF

Art of Buy-Side Arbitrage Strategy

Arbitrage strategies from the perspective of buy-side quant operations.

HTML PDF

Mind the Gap (Under the Curve)

A comprehensive personal compendium on numerical integration, quadrature, and applications in financial engineering.

HTML PDF

Linguistics

English - Native
Mandarin - Fluent
German - Intermediate
French - Basic
Flemish - Basic

Portfolio

Personal Portfolio

geneboo.github.io/GBnfo