

# 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 (VaR, ES, Euler Allocation, Copulae), 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 (numpy, scipy, pandas, polars, mpmath), Rust, VBA/C++, SQL, and cloud platforms (Google Cloud Run). Well-versed in REST API design, Salesforce, Grafana, Postman. Familiar with modern AI/ML (XGBoost, LLMs), having studied foundational concepts 25 years ago. Passionate about optimization, numerical methods (FFT, Quadrature, MGFs), and building innovative tools like ExcelBridge—a fully self-designed plugin system that brings Python-like analytics to Excel, Google Sheets, and LibreOffice without any local pre-installation of Python and its large libraries.

### 📦 Core Competencies

#### Quantitative Analysis

- Derivatives Pricing (FFT, Quadrature, MGFs, Local Vol, SABR, FD, Variance-Reduced MC, Analytical)
- MC Simulation & Copula Modeling
- Risk Metrics: VaR, ES, Euler Allocation
- Gradient Boosting / PCA / Hybrid Models

#### Technical Expertise

- Python (Pandas, NumPy, SciPy, Polars, mpmath), Rust (basic)
- VBA/Excel, C++ Quant Libraries, SQL
- Salesforce, Grafana, Postman, REST APIs
- HTML, CSS, JavaScript, Google Cloud Run

#### Risk Management

- Market, Operational & Liquidity Risk (IRRBB)
- Model Validation (Traded/Non-traded)
- Regulatory Compliance (MAS, BNM, Basel)
- Euler Allocation for OpRisk Capital

### Leadership & Strategy

- Team Leadership (Regional 5+ members)
- Pre/Post-Sales Engagement (Qontigo/Simcorp)
- Regulatory & Technical Documentation
- Workflow Automation & Optimization

### 💼 Professional Experience

## IBMR Projects Consultant Ambank Group

Mar 2025 – Present

- ▶ Optimized Dupire PDE Local Vol surface building & Autocallable valuation in Python (NumPy, SciPy, Numba) for VaR engine.
- ▶ Provided SA-CCR implementation guidance for structures that did not fit within the vanilla framework.
- ▶ Automated OOC early withdrawal detection using Python (Pandas, Polars) & SQL on a 100GB historical database.
- ▶ Created semi-automated spreadsheet and pdf tools for reporting team.
- ▶ Developed accelerated Monte Carlo frameworks (mpmath for high-precision) for derivative pricing; advised IRRBB team on prepayment modeling.

 Python (NumPy, SciPy, Pandas, Polars, mpmath, duckdb, joblib)

 SQL

 VBA

## Product Specialist Qontigo / AxiomaRisk (Simcorp)

Dec 2021 – Jun 2023

- ▶ Conducted pre/post-sales for AxiomaRisk & Performance Attribution across multi-asset classes (EQ, FX, FI, Crypto).
- ▶ Developed Python automation using AxiomaRisk API, reducing report generation time by 70%; created Python and Excel validation tools for clients via XLWings and AxiomaRisk REST API; used Postman for API testing, Grafana for monitoring.

 Python (Pandas, XLWings)

 REST API

 Postman

 Excel / VBA

 Salesforce

 Grafana

## Senior Quantitative Analyst Maybank Group

Sep 2019 – Aug 2021

- ▶ Designed Monte Carlo + bootstrap models for OpRisk capital; implemented Gaussian & t-copulae on adjusted bootstrapped points for tail-risk aggregation with Euler allocation across 8 main business units. Studied the impacts of cyber risk, climate risk and legislative risk.
- ▶ Built FFT-based convolution tools (NumPy, SciPy) for joint distribution modeling; developed Quadratic COVID-19 R<sub>0</sub> prediction model (92% accuracy).

 Python (NumPy, SciPy, Pandas)

 C++ libraries

## Head of Market Risk Model Validation Maybank Group

Mar 2014 – Mar 2019

- ▶ Led regional team validating traded/non-traded portfolios; worked with BNM, MAS, HKMA.
- ▶ Developed independent pricing engines and validators for FXO, IRO, Commodity, Equity Derivatives (C++/Python); validated IRRBB framework and deposit pre-mature withdrawal modeling approaches.

 C++ (xlw)

 Python (SciPy, NumPy, xlwings, pyxll)

 VBA

 SQL

## Senior Quantitative Analyst Ambank Group

Apr 2009 – Mar 2014

- ▶ Developed benchmark pricing models for derivatives across FX, EQ, IR; created volatility surface generators (C++/Python/VBA).

 C++

 Python (early numpy)

 VBA

## Risk Specialist Pilot Multimedia

Jun 2007 – Jan 2008

- ▶ XML-based staging tools, VB plug-ins for C# credit risk project; logistic regression for PD.

 VB6 / VBA

 C#

 XML

## Market Risk Analyst Fortis Bank (BNP Paribas)

Aug 2006 – Jan 2007

- ▷ Asian Basket option pricing and Greeks: Deelstra, Curran 2M+, Ju, Gram-Charlier, FFT, MC (C++/Python).

 C++

 Python (NumPy, FFT)

## Contracts Analyst Electrabel SA (ENGIE)

Aug 2000 – May 2006

- ▷ Spark/crack spread pricers in VBA/C++ for Murex; Winter method profiling in SAS.

 VBA

 C++

SAS

 Murex

## MBA, Global Management Hochschule

Bremen 1999 | Grade: 1.0

## BA, Business Administration Hertfordshire, UK

1998 | 2nd Upper Honours

## Certifications

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

## Hobby Projects

### ExcelBridge

Zero-install Excel add-in (server-side Python).

[github.com/geneboo/LargeFile](https://github.com/geneboo/LargeFile)

### Fit\_it!

Upload data, best-fit distributions + KDE.

[fit-it-app.run.app](https://fit-it-app.run.app)

### FunkyGraffy

Math viz on Render.

[funkygaffy.onrender.com](https://funkygaffy.onrender.com)

### SaaS Universe

Derivative pricing, Kalman, convolver, etc. (Coming soon)

### PersVa

Encrypted storage concept (private).

### FileObfuscator

AES+XOR+scrambling (private).

### VPN

Multi-layer encryption (private).

## Written Works

### Risk-Neutral Pricing via MGFs under Non-Normality

MGF drift corrections.

[HTML](#) [PDF](#)

### Mind the Gap (Under the Curve)

Quadrature compendium.

[HTML](#) [PDF](#)

### Understanding Fourier Transform

Convolution for Black-Scholes (not Carr-Madan).

[PDF](#)

### FFT Cross Correlation vs. Pearson

Addendum with Python.

[HTML](#) [PDF](#)

### Art of Buy-Side Arbitrage

Quant perspective.

[HTML](#) [PDF](#)

## Linguistics

 English – Native

 Mandarin – Fluent

 German – Intermediate

 French – Basic

 Flemish – Basic

 Cantonese – Basic

 Malay – Basic

## Cloud & AI

### Cloud Deployment

Google Cloud Run, serverless, REST API, Postman, Grafana.

### AI/ML Familiarity

LLMs (ChatGPT, Ollama, Grok, Gemini, Deepseek), prompt formulation. Python/Rust/C++ libs: numpy, scipy, pandas, polars, mpmath, cuda-py, pyo3, fastapi, scikit-learn, xgboost, copulae, ARIMA/GARCH, fftw, QuantLib.