

## Summary

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- Lead quant strategist managing quantitative teams to oversee \$100+bn multi-asset portfolios
- Specialized in designing strategic risk frameworks, early warning systems, and advanced market analytics to support institutional decision-making

## Professional Experience

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**GIC** Lead Quant Strategist, Senior Vice-President, Global Markets Multi-Assets Singapore, since 2023

- Lead and mentor a team of six quants on portfolio management and risk models, quant market research
- Design and implement portfolio construction and risk models for \$100+bn multi-asset portfolios
- Develop and maintain portfolios risk systems (CVaR & DD limits, risk exposures, multivariate risk factors, stress-tests, early warning signals, etc.), automatize risk reporting, engagement with discretionary managers
- Steer quant research using Machine Learning/AI/LLM on rates, FX, and credit markets

**ADIA** Senior Quant Researcher, Portfolio Analytics & Market Research Abu Dhabi, 2022-2023

- Portfolio construction and risk models, supporting ADIA CIO's strategic and tactical allocation
- Quant research on global rates, FX, credit and commodity markets

**International Monetary Fund** Global Advisory, Financial Sector Expert Washington DC, 2016-2022

- Led technical assistance missions to 30+ central banks on quantitative models for financial operations
  - Risk and liquidity management frameworks and FX reserves management tools
- Policy work on IMF funding programs and financial surveillance for EM countries
- Academic publications on macro risk modeling (Growth-at-Risk), forecasting, nowcasting

**European Central Bank** Portfolio Manager and Quant Researcher Frankfurt, 2013-2016

- Managed RMB and JPY reserve portfolios and supported QE market operations
  - Portfolio management and risk modeling for ECB rates and FX portfolios

## Education

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**Ph.D. Quantitative Finance**, Peking University Beijing 2013

*Entire six-year quant curriculum completed in Chinese Mandarin in Beijing*

**M.Sc. Quantitative Macro & Finance**, Ecole Normale Supérieure de Paris-Saclay Paris 2009

*First-ranked at France's national entrance exam (Normalien)*

**M.Sc. Mathematics and Statistics**, ENSAE Paris Paris 2007

**Undergrad Mathematics (CPGE)** Henri IV Paris 2005

## Skills

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- **Quant skills:** Statistics & machine learning, convex optimization, bootstrapping, density models, AI & LLM
- **Risk models:** VaR, CVaR, ES, stress-testing, early-warning signals, credit & FX risk modeling, pricing tools
- **Risk factors systems:** Blackrock BRS, MSCI Barra, Axioma, PCA-custom risk factors
- **Tech stack:** Python, Github CI/CD, Airflow schedulers, SQL, AWS, Databricks & databases management
- **Data:** Bloomberg, Wind, Factset, Macrobond, CEIC, alternative datasets
- **Languages:** English (fluent), Chinese (conversational), French (native)

## Python Packages

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- Distributional GARCH model to design VaR-based FX Interventions for Central Banks, [varfxi repo](#)
- Density Forecasting and Risk Modeling for Macro Series, [gar repo](#)
- Conditional Density Projection via Quantile Regressions, Resampling and Multifit Models, [quantproj repo](#)
- Robust Density Estimation via Over-Parametrized Gaussian Skewed Models, [robustdensity repo](#)
- Partial Least Squares Wrapper for Data Reduction based on Scikit, [plswrapper repo](#)
- Quantile Spacing - solving for quantile crossing, from Schmidt and Zhu (2016), [quantilespacing repo](#)
- Quantile Local Projections, [quantileproj repo](#)
- Granular Instrumental Variables - from Gabaix and Koijen (2020), [granulariv repo](#)
- Cluster Analysis Wrapper with Performance Metrics and Visualization Tools, [clusterwrapper repo](#)

## Academic Research

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- *Financial Conditions in Europe: Dynamics, Drivers, and Macroeconomic Implications*, [IMF WP \(2024\)](#)
- *Technology and the Geography of FX Markets*, [Journal of International Money and Finance \(2023\)](#)
- *FX Interventions: A Risk-Based Framework*, [IMF WP \(2020\)](#)
- *Predictive Density for Global Growth*, [IMF WP \(2020\)](#)
- *Growth at Risk: Applications in IMF Surveillance*, [IMF WP \(2019\)](#)
- *Can Countries Manage Their Financial Conditions Amid Globalization?*, [IMF WP \(2018\)](#)
- *Trading Without a View: Fast Trading, Entropy and Underreaction in the FX Market*, [ECB WP \(2018\)](#)
- *Household Savings in China : The Role of the Housing Market and Borrowing Constraints*, [BdF WP \(2014\)](#)

## Policy Research

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- *United Arab Emirates: TA Report - Liquidity Management and Forecasting*: [IMF TA report \(2022\)](#)
- *Jordan: TA Report - Forecasting Framework for Currency in Circulation*: [IMF TA Report \(2022\)](#)
- *House Price Synchronization: What Role for Financial Factors?:* [IMF GFSR \(2018\)](#)
- *Financial Conditions and Growth at Risk*: [IMF GFSR \(2017\)](#)
- *High-Frequency Trading, Information and Market Volatility: the Role of Dark Pools*: [ECB FSR \(2017\)](#)
- *The Role of Currency Invoicing for the Transmission of Exchange Rate Movements*: [ECB IRE \(2015\)](#)

## Country Missions

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Policy experience with 30+ countries missions for IMF programs, technical assistance, FSAP, Article IV etc.

- **Mauritania:** monetary operations (2023)
- **Bosnia:** FX management (mission chief, 2022)
- **Burundi:** monetary operations (2022)
- **Algeria:** monetary operations (mission chief, 2022)
- **United Arab Emirates:** monetary operations (co-mission chief, 2021)
- **Namibia:** liquidity forecasting (mission chief, 2021)
- **Jordan:** liquidity forecasting (mission chief, 2021)
- **Djibouti:** liquidity forecasting (mission chief, 2021)
- **Hong Kong SAR:** FSAP, systemic liquidity and stress-testing (2021)
- **WAEMU:** FSAP, stress-testing (2021)
- **D.R Congo:** IMF program negotiations (2020)
- **Tunisia:** liquidity forecasting (2020)
- **South Korea:** FX reserves management (2020)
- **Morocco:** FX interventions (2020)
- **P.R China:** Risk modeling (mission chief, 2019)
- **India:** Financial modeling (2019)
- **Philippines:** Financial modeling (2019)
- **Malaysia:** Financial modeling (2019)
- **Singapore:** Financial modeling (2019)
- **Israel:** IMF Article IV, external sector (2019)
- **Albania:** IMF Article IV and post-program (2018, 2019)
- **Peru:** FSAP, systemic liquidity and stress-testing (2017, 2018)
- **PR China:** ECB negotiations, RMB Eurosystem portfolio (2015)

## Teaching

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I taught financial modeling and financial operations to countries officials and central bankers around the world, often via IMF technical assistance centers.

- **Singapore:** [FX Intervention Rules](#) (2023)
- **Singapore:** liquidity forecasting (2022)
- **Ghana:** liquidity forecasting (2022)
- **Kuwait:** liquidity forecasting (2021, 2022)
- **Slovenia:** liquidity forecasting (2022)
- **IMF Washington DC:** density modeling (2021)
- **Kazakhstan:** liquidity forecasting (2021)
- **Guatemala:** liquidity forecasting (2021)
- **Austria:** density modeling (2021)
- **Malaysia:** density modeling (2020)
- **IMF Washington DC:** Python (2019)
- **Sciences Po and ENSAE Paris:** Econometrics and macroeconomics (2010-2012)