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Summary

- Lead quant portfolio strategist with 13+ years of experience across GIC, ADIA, IMF & ECB
- Machine learning & AI for asset allocation and global markets analytics, team leadership

Professional Experience

GIC Lead Quant Portfolio Strategist, Senior Vice President Singapore, since 2023

- Engineer asset allocation framework and risk analytics for \$ 100+ bn multi-asset portfolios
 - Optimizing the balance between liquidity needs and long-term capital appreciation
- Steer quant models using Machine Learning/AI/LLM on rates, FX, and credit markets
- Design and oversee portfolios risk tools (multivariate risk factors, stress-tests, early warning signals)
- Mentor a team of six quants on asset allocation, portfolio construction and global markets analytics

ADIA Senior Quant Portfolio Strategist, Senior Researcher Abu Dhabi, 2022-2023

- Quantitative insights to the CIO to drive tactical tilts in global markets, with a focus on inflation hedging and sovereign risk
- Macro quant research on global rates, FX, credit and commodity markets, sovereign risk, inflation, etc.

International Monetary Fund Macro Quant Modeler Washington DC, 2016-2022

- Macro analysis: sovereign risk, macro stress-tests, nowcasting, inflation forecasting, debt projections, etc.
- Financial surveillance for EM & low-income countries and negotiations for IMF programs
- Mission chief and technical contributor on technical assistance missions to 30+ countries

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

- Managed RMB and JPY reserve portfolios, QE implementation & Greek banks emergency liquidity
- Global FX and rates models (inflation forecasting, FX fair value, curve and term premium, etc.)

Education

Ph.D. Quantitative Macro & Finance, Peking University Beijing 2013

Entire 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

- **Analytics:** Statistics & machine learning, AI & LLM, convex optimization, bootstrapping, density models
- **Tech stack:** Python, Github CI/CD, cloud computing (AWS & Databricks), Airflow schedulers, big data
- **Data:** Bloomberg, Macrobond, Haver, CEIC, Wind, Factset, alternative datasets
- **Risk models:** VaR/CVaR, stress-test, early-warning signals, rates & FX risk, sovereign risk, FSI
- **Risk factors systems:** Blackrock BRS, MSCI Barra, Axioma, PCA-custom risk factors
- **Languages:** English (fluent), Chinese (conversational), French (native)

Python Packages

- 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 Seikit, [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

- *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

- *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

Policy experience with 30+ country missions on technical assistance, policy negotiations and financial surveillance

Asia, Europe & LATAM

- **P.R China:** Financial stress models (mission chief, 2019)
- **P.R China:** ECB negotiations, RMB Eurosystem portfolio (2015)
- **India:** Sovereign risk models (2019)
- **South Korea:** FX reserves management (2020)
- **Hong Kong SAR:** FSAP, systemic liquidity and stress-testing (2021)
- **Philippines:** Sovereign risk models (2019)
- **Malaysia:** Sovereign risk models (2019)
- **Singapore:** Sovereign risk models (2019)
- **Albania:** IMF Article IV and post-program (2018, 2019)
- **Bosnia:** FX management (mission chief, 2022)
- **Peru:** FSAP, systemic liquidity and stress-testing (2017, 2018)

Middle-East & Africa

- **Israel:** IMF Article IV, external sector (2019)
- **United Arab Emirates:** central bank operations (co-mission chief, 2021)
- **Jordan:** liquidity forecasting (mission chief, 2021)
- **Morocco:** FX interventions (2020)
- **Algeria:** central bank operations (mission chief, 2022)
- **Tunisia:** liquidity forecasting (2020)
- **WAEMU:** FSAP, stress-testing (2021)
- **Mauritania:** central bank operations (2023)
- **Namibia:** liquidity forecasting (mission chief, 2021)
- **Djibouti:** liquidity forecasting (mission chief, 2021)
- **D.R Congo:** IMF program negotiations (2020)
- **Burundi:** central bank operations (2022)

Teaching

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)