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Summary

- Lead quant portfolio strategist with 13+ years of experience across international financial institutions
- Key expertise: portfolio construction and analytics, global markets, quant & academic research, policy work

Professional Experience

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

- Lead and mentor a team of six quants on global markets and macro models, asset allocation and portfolio construction
- Develop and implement portfolio systems and analytics for \$100+ bn multi-asset portfolios
- Steer quant models systems 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)

ADIA Senior Quant Researcher, Portfolio Construction & Macro 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 Quant Macroeconomist Washington DC, 2016-2022

- Macro quant modeling: GDP nowcasting, inflation forecasting, debt projections, macro stress-tests, etc.
- Led technical assistance missions to 30+ countries on quantitative models for financial operations.
 - Developed central banks liquidity management and risk frameworks and FX reserves management tools
- Policy work on IMF funding programs and financial surveillance for EM countries mostly

European Central Bank Portfolio Manager and Market Operations Expert Frankfurt, 2013-2016

- Managed RMB and JPY reserve portfolios and supported QE market operations
 - Portfolio management and risk modeling for rates and FX portfolios
 - Direct exposure to monetary policy implementation and large-scale QE programs

Education

Ph.D. Quantitative Finance, Peking University	Beijing 2013
<i>Entire six-year quant curriculum completed in Chinese Mandarin in Beijing</i>	
M.Sc. Quantitative Macro & Finance, Ecole Normale Supérieure de Paris-Saclay	Paris 2009
<i>First-ranked at France's national entrance exam (Normalien).</i>	
M.Sc. Mathematics and Statistics, ENSAE Paris	Paris 2007
Undergrad Mathematics (CPGE) Henri IV	Paris 2005

Skills

- **Analytics:** Optimization, simulation, density modeling, machine learning, AI & LLM
- **Risk quantification:** VaR, CVaR, ES, stress-testing, credit & FX risk modeling, pricing tools
- **Risk factors models:** Blackrock BRS, MSCI Barra, PCA-custom models
- **Programming:** Python (quant libraries, CI/CD, AWS), SQL, Databricks (platform)
- **Data:** Bloomberg, Factset, Macrobond, CEIC, alternative datasets
- **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 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

- *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+ 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

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)