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Summary

- Lead quantitative 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
  - Optimize between returns opportunities, risk appetite and liquidity needs
- Steer Machine Learning/AI/LLM quant models on rates, FX, and credit markets for portfolio positioning
- Architect institutional-grade portfolio risk tools (multivariate risk factors, stress-tests, early warning signals)
- Mentor a team of six quants focused on asset allocation and sophisticated portfolio construction

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

- Quantitative models to support CIO strategic allocation and tactical tilts, inflation hedging and sovereign risk
- Advanced macro research across global rates, FX, and commodity to identify long-term investment themes

International Monetary Fund Quant Macroeconomist   Washington DC, 2016-2022

- Analytics: sovereign risk, macro stress-tests, nowcasting, inflation forecasting, debt projections
- 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)

Education

Ph.D. Quantitative 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, top 1% of national applicants)

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 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+ country missions on technical assistance, policy negotiations and financial surveillance

Asia, Europe and 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)

MENA and SSA

- **United Arab Emirates**: central bank operations (co-Mission Chief, 2021)

- **Jordan**: liquidity forecasting (Mission Chief, 2021)

- **Israel**: IMF Article IV, external sector (2019)

- **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)