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Summary

- 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

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

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

- **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

- 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)