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## Summary

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- 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

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**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

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**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

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- **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

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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+ 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

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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)