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Summary

- Lead macro quant researcher with 13+ years of experience across GIC, ADIA, IMF & ECB
- Quant research: stats, ML, GenAI, portfolio construction & optimization, factors and risk models
- Quant development: signals productionalization, CI/CD, cloud computing, portfolio analytics

Professional Experience

GIC Lead Quant Researcher, Global Macro, Senior Vice President Singapore, since 2023

- Systematic alpha signals for rates, FX, and commodities using statistics, ML & LLM
- Fundamental macro quant models for inflation, yield curve, FX valuation and sovereign risk
- Macro-factor signal aggregation framework with convex optimization and regularized objective function
- Develop risk-factor platform (Barra + PCA) for real-time stress-testing and tail-risk monitoring
- Production: CI/CD, cloud platforms (AWS & Databricks) and data management (SQL, Spark, Polars)

ADIA Senior Quant Researcher, Global Macro Abu Dhabi, 2022-2023

- Designed systematic macro signals for the "Q" team, focusing on rates, FX, and commodities
- Optimized portfolio construction frameworks with non-linear constraints and factors exposures limits

International Monetary Fund Quant Macroeconomist Washington DC, 2016-2022

- Analytics: sovereign risk, macro stress-tests, nowcasting, inflation forecasting, debt projections
- Large EM coverage (China, India, Korea, Malaysia, Israel, Peru, etc.)

European Central Bank Quant Researcher 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).

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), Spark, Airflow, Polars
- **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 \(2015\)](#)