

RAJVEER JAT, PhD (Phone: 951 573 0953)

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QUANT (CAPITAL MARKET) EXPERIENCE

Quant Research Intern, Capital Group (Los Angeles)

Nov'24 - Present

- Developing quantitative strategies using econometric and machine learning models for portfolio optimization.
- Applying non-parametric-based big data analytics to inform hedging strategies and financial forecasting.

EDUCATION

University of California, Riverside PhD in Economics [*Field: Econometrics*, 4.0 GPA] Sep'20 - Present

Indian Statistical Institute (ISI) MS in Quantitative Economics Jul'17 - May'19

Indian Institute of Technology (IIT), Roorkee B. Tech. in *Electrical Engineering* Jul'12 - May'16

PhD RESEARCH

[Forecasting Paper] Kernel Three Pass Regression Filter

[Paper]

- Developed a new theoretical machine learning (ML) method of forecasting using high-dimensional topology.
- Rare package of supervised learning, Ability to handle non-linearities, and Computational efficiency.
- Tested on 175 macro-finance variables, our method is the best $\sim 87\%$ of the time, especially in longer horizons.
- Accepted in the world's best econometrics conferences: 2024 California Econometrics Conference, European Winter Meeting of the Econometric Society 2024, and 34th Annual Midwest Econometrics Group Conference.

[Causal Inference Research] Sufficient Instruments Filter

[Job Market Paper]

- Novel five-layered tractable **Deep Learning** (DL) procedure to filter sufficient information for causal inference.
- Allows many correlated and even invalid instrumental variables and works in serially correlated observations.
- Incorporates **Supervision**, accommodates **Non-linearities**, and can sufficiently do **Dimension Reduction**.
- Robust to Linear, Non-linear, IID, Correlated data generating processes, beats [Belloni et al](#) (*Econometrica*).
- CAPM Beta and Price elasticity of demand: Superior causal identification in these two real world problems.

[Deep Learning (DL) Research] Supervised Deep Factor Models

[Work in Progress]

- Employing adversarial, variational autoencoders and supervised learning to uncover latent space.
- Developing a new forecasting method by combining the best of time series econometrics with machine learning.

QUANT INDUSTRY EXPERIENCE

Quant Consultant, Research Triangle Institute (RTI) International

Aug'21 - Aug'22

- Developed statistical models for future cash flow streams to help \$10 million investment decision problem.

Quantitative Researcher Intern, KPMG

Jan'20 - Aug'20

- Solved an expected revenue estimation problem using a constrained optimization framework in Python.

Quant Consultant, Asian Infrastructure Investment Bank (AIIB)

Jul'19 to Jun'21

- Developed mathematical models to guide the statistical pursuit of optimal solutions to investment problems.

C++ Software Engineer, HCL Technologies India

Oct'16-Jul'17

- Developed software solutions for business problems using object-oriented programming concepts.

SKILL-SETS

Programming	C++, R (np, tidyverse, ggplot2, dplyr), Python (numpy, pandas, sklearn, statsmodel).
Big Data	SQL, PyTorch, TensorFlow, Dimension Reduction, RKHS, Distributed & Parallel Computing.
Expertise	High Dimensions, Factor Models, Time Series, ML, Statistics, Forecasting, Non-linearity.
Modeling:	ML Classification, Clustering, Regression, Inference, Monte Carlo, Financial Derivative Pricing