RAJVEER JAT, PhD (Phone: 951 573 0953)

Website ◇ rjat001@ucr.edu ◇ PhD (Econometrics), UC Riverside ◇ Linked-in

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

EXPERIENCE

[PhD Publication] 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 34^{th} Annual Midwest Econometrics Group Conference.

[PhD Causal 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.

[PhD 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.

[University Leader] Lead, GradQuant, University of California Riverside Jul'24 - Present
-Teaching PhDs: Quantitative methods, ML methods. Managing a team of five quantitative experts.

[Industry] Quant Consultant, Research Triangle Institute (RTI) International Jul'21 - Sep'21
-Developed statistical models for future cash flow streams to help $10 million investment decision problem.

[Industry] Quantitative Researcher Intern, KPMG *Jan'20 - Aug'20*
-Solved an expected revenue estimation problem using a constrained optimization framework in Python.

[Industry] Quant Consultant, Asian Infrastructure Investment Bank (AIIB) *Nov'19 to May'21*
-Developed mathematical models to guide the statistical pursuit of optimal solutions to investment problems.

[Industry] C++ Software Engineer, HCL Technologies India *Oct'16-Jul'17*
-Developed software solutions for business problems using object-oriented programming concepts.

EDUCATION

University of California, Riverside PhD in Economics [*Field: Econometrics*, 4.0 GPA] *Sep'20 - Present*
Relevant Courses: Non-parametric Statistics, Advanced Time Series, Real Analysis, Measure Theoretic Probability, Computational Learning, Discrete Data, Topology, Deep Learning (DL), Parallel Computation.

Indian Statistical Institute (ISI) *MS in Quantitative Economics* *Jul'17 - May'19*
Relevant Courses: Linear & Matrix Algebra, Linear/Dynamic Programming, Discrete Mathematics, Applied Econometrics, Markov Chains, Monte-Carlo Simulation, Statistical Inferences, Monetary Econ, Asset Pricing.

Indian Institute of Technology Roorkee B. Tech. in *Electrical Engineering* *Jul'12 - May'16*
Relevant Courses: Differential Equations (ODE and PDE), Advanced Calculus, Algorithm & Data Structures, Programming in C++, Linear Algebra, Control Theory, System Dynamics, Numerical Analysis, FPGA.