RAJVEER JAT

PhD Candidate (Econometrics) ⋄ rjat001@ucr.edu ⋄ https://www.linkedin.com/in/rajveeriitr/

RESEARCH

Kernel Three Pass Regression Filter [Accepted in The 2024 California Econometrics Conference]
-Developed a new theoretical machine learning method of forecasting using high-dimensional topological spaces.
-Our method outperforms the competitive methods in both short- and long-horizon forecasting.
-Developing an *R-package* for this algorithm. Computational time is of the same order as that of competitors.
-Testing on 20 macro-finance variables, we improve short-term predictions by ∼10% and long-term by ∼50%.
-One of only three PhD papers accepted at the prestigious annual California Econometrics Conference.
-Publication under review in the best field (applied econometrics) journal, *Journal of Applied Econometrics*.

Sufficient Instruments Filter for Nonlinear Causal Effects [Work in Progress]
-Developing a new causal inference model to uncover non-linear causal effects in Macro-Finance data.

Factor Models for Finance Using Deep Neural Networks [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.

Forecasting Using Supervised Diffusion and Flow-based Models [Work in Progress]
-Developing a new forecasting method using frontier tools in machine learning and econometrics.

Information Theoretic Maximum Entropy Density Estimator [Work in Progress]
-Developing a new distribution learning method for better Alpha research, risk assessments, and option pricing.

EDUCATION

University of California, Riverside PhD in Economics [*Field: Econometrics*, 4.0 GPA] *Sep'20 - Present*
Relevant Courses: Stochastic Calculus, Non-parametric Statistics, Advanced Time Series, Semi-parametric, Real Analysis, Measure Theoretic Probability, Computational Learning, Statistical Computing with R, Discrete Data Analysis, High dimensional Statistics, Topology, Deep Learning, High-Speed Parallel Computation.
Awards: Dean's Distinguished Fellowship, Conference Travel Grant, Associate Instructor-ship, Seminar Speaker.

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, Statistical Learning, Financial Intermediaries and Volatility, Growth Theory, Global Macro, Game Theory.
Awards: The Youngest Speaker in 15^{th} Annual Conference, Academic Distinction, and Book Prize Awards.

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.
Awards: Merit-cum-Means Scholarship (three times), General Secretary of Financial Affairs in the Senate.

PROFESSIONAL EXPERIENCE

Lead, GradQuant, University of California Riverside Jul'24 - Present
-Leading the center for quantitative methods for grad students and post-doc researchers at UC Riverside.

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.

Quant Research 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) *Nov'19 to May'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*