Srijan Mishra

Quantitative Research | Statistical Validation | Stochastic Modelling
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Education

Sardar Vallabhbhai National Institute of Technology (SVNIT) — Surat, India
Integrated M.Sc. (5-year), Mathematics — *2024 – Present*

Financial Modeling & Valuation Analyst (FMVA®) — Corporate Finance Institute (CFI)
3-statement modelling, DCF & comps, bank and startup/e-commerce valuation — *2025 – Present*

Summer School on Mathematical Finance, IISER Pune — Pune, India
Under Dr. Anindya Goswami, Dept. of Mathematics — *May – Jul 2026*

- Price processes, derivative pricing, portfolio optimisation; commended for *"critical investigation of optimal portfolio solutions"*.

Research Experience

Alpha Stochastic Research (ASR Lab) — Remote (France-based lab)
Head of Quant Engineering Systems — *2026 – Present*

- Lead the independent validation & benchmarking workstream for **ASRQuant 1.3.0**, the lab's open-source Python quant-research platform (curves, credit, derivatives, portfolio, backtesting); **co-author** of its release paper.
- Designed the validation methodology: analytical identities, **put–call parity & implied-vol round trips**, market-quote repricing of calibrated curves, hazard-curve bootstrap recovery and numerical invariants.
- Reviewed the anti-overfitting layer: **CPCV, Probability of Backtest Overfitting, Reality Check, SPA**.
- Reproduced and triaged defects, wrote regression tests and built benchmarks feeding the paper's Results and Limitations; release reached **336 passing tests across 36 modules**.

Publications

[1] A. K. Touré, **S. Mishra**. *Quantitative Research Under Real-World Constraints* (ASRQuant 1.3.0 release paper). Alpha Stochastic Research, Sep 2026.

[2] A. K. Touré, **S. Mishra**, D. Shah. *A Pre-Registered Protocol for Testing a Local Intraday Regime-Break Candidate in the S&P/TSX Composite.* Alpha Stochastic Research, Sep 2026.

- Selection-aware break test (Welch mean test, block-bootstrap nulls, **Romano–Wolf/maxT** over 24 candidates); Monte Carlo stress test with AR(1), intraday seasonality and Student-t shocks gave familywise size **3.98% at a 5% target**.

Projects

Premier League Prediction & Analytics Engine | *Python, pandas, scikit-learn, XGBoost, PuLP* — *In progress, 2026*

- **Season forecasting:** Dixon–Coles goal model + Monte Carlo season simulation → title, top-4 and relegation odds.
- **Current vs. predicted stats:** actual vs. expected goals and points (xG, xPts) to flag teams and players due to regress.
- **Transfer valuation:** ML model forecasting player market value for the **January and summer windows**.
- **FPL optimiser:** mixed-integer programme for squad, transfers and chips over a multi-gameweek horizon.
- **Evaluation:** walk-forward backtests scored by log-loss and Brier score vs. bookmaker odds.

Efficiency–Equity Nexus: Quantitative Econometrics & Banking Portfolio Model | *R, data.table, quantmod* — *Jan 2026*

- Econometric model of India's top 20 banks: **DEA** (CCR & BCC) efficiency, log-growth & regime analysis, momentum.
- Multi-factor allocation stress-tested by **Monte Carlo**, mapped to Buy/Accumulate/Hold/Avoid calls.

Technical Skills

Core Strengths: End-to-end project pipelines (data → model → validation), software validation, statistical testing
Quant Methods: Stochastic processes, derivative pricing, yield-curve & credit analytics, portfolio optimisation, bootstrap & multiple-testing inference, structural-break tests, Monte Carlo, backtest validation (CPCV, PBO, SPA)
Programming: Python (NumPy, pandas, SciPy, SymPy, scikit-learn, Matplotlib), R (data.table, quantmod, ggplot2), Git/GitHub, Linux, Jupyter

Leadership, Certifications & Activities

- **Secretary & Chief Executive, Cutting Edge Visionaries (CEV), SVNIT**
- **Other roles (SVNIT):** Finance & Documentation Co-Head, MindBend; Admin & Documentation Co-Head, Sparsh
- **Certification:** UPenn Finance & Quant Modeling (Coursera, 2025)
- **Competitions:** FinTech Hackathon, IIT Gandhinagar; Strategix 2025
- **Currently learning:** C++ and fundamentals of data structures & algorithms (DSA)