Srijan Mishra

Quantitative Development | Python Research Infrastructure | Numerical Validation
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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"*.

Experience

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

- Lead independent validation & benchmarking of **ASRQuant 1.3.0**, an open-source Python quant-finance library (84 modules, 258 public callables) spanning curves, credit, derivatives, portfolio and backtesting.
- Run a governed engineering workstream of **33 tracked work packages**: install verification, API mapping, independent tests, numerical stability, reference cross-checks, benchmarking, fixes, and a PASS/BLOCK release call.
- Found, reproduced and triaged defects and wrote regression tests; release reached **336 passing tests across 36 modules**, a zero-failure 84-module import sweep and a passing **116-symbol stable-API contract**.
- Built numerical checks against closed forms and market data: **put–call parity, implied-vol round trips**, curve quote repricing, PSD covariance checks and deterministic fixtures.

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.
- **FPL optimiser:** mixed-integer programme for squad, transfers and chips over a multi-gameweek horizon.
- **Engineering:** modular pipeline (ingest → features → models → optimiser) with cached data snapshots, fixed seeds and walk-forward backtests so every forecast is reproducible.

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.

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.

Technical Skills

Core Strengths: End-to-end project pipelines (data → model → validation), software validation, statistical testing
Programming: Python (NumPy, pandas, SciPy, SymPy, scikit-learn, Matplotlib), R, SQL basics (Supabase)
Engineering: Regression & numerical testing, API/interface contracts, benchmarking, reproducible builds, Git/GitHub, Linux, VS Code, Jupyter
Quant Domain: Curves & day-count conventions, option pricing & implied vol, credit (hazard/CDS), portfolio & risk, backtesting, Monte Carlo, optimisation (LP/MILP)

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)