Surya Anand

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EDUCATION

UCLA ANDERSON SCHOOL OF MANAGEMENT Los Angeles, CA
Master of Financial Engineering GRE Quantitative: 170/170 Expected Dec 2027

- *Relevant Courses:* Stochastic Calculus, Econometrics, Investments, Financial Accounting

INDIAN INSTITUTE OF TECHNOLOGY BOMBAY Mumbai, India
BTech, Engineering Physics CGPA: 7.63/10 August 2026

- *Awards:* Accomplished a Change of Branch to the department of Physics among 8 such students owing to excellent academic performance in the first year
- *Relevant Courses:* Linear Algebra, Differential Equations, Numerical Analysis, Machine Learning, Vector Calculus, Complex Analysis, AI and Data Science
- Teaching Assistantship, Digital Electronics Lab: Mentored a group of 6 students through an extensive course on digital electronics and microprocessors, culminating in a 2 month long project

SKILLS & CERTIFICATIONS

- *Technical Skills:* Python (pandas, numpy, scipy, scikit-learn), R, MATLAB, C++
- *Tools:* Git, LaTeX, Excel

PROJECTS

Options Pricing Engine June 2026 - July 2026
Personal Project | ***github.com/Surya-Anand/OptionsPricingEngine***

- Engineered 3 options pricing models (Black-Scholes, CRR Binomial Tree, Monte Carlo) from first principles in Python, implementing full Greeks computation and antithetic variate variance reduction for both European and American options.
- Benchmarked computational efficiency across all 3 models: Binomial Tree (N=500) ran 19× and Monte Carlo (M=100K simulations) ran 23× slower than Black-Scholes, quantifying the speed-accuracy tradeoff inherent in numerical pricing methods.
- Calibrated models against live AAPL options data, surfacing a 5.32% volatility risk premium - implied volatility (29.86%) exceeding realized historical volatility (24.54%) - consistent with risk-averse pricing in equity markets.

Statistical Modeling & Regression on Galaxy Data Aug 2025 - Nov 2025

- Processed and cleaned a 40000-point astrophysical dataset in Python, applying nonlinear least squares regression to estimate physical model parameters under significant measurement uncertainty.
- Optimized model fits across 2 distinct observational regimes, evaluating goodness-of-fit diagnostics (residuals, R^2) to ensure numerical stability and robustness.
- Translated high-dimensional raw data into interpretable statistical indicators through regression modeling and visualization, surfacing Sérsic profile of the galaxy.

Nonlinear Dynamical Systems & Stability Analysis Dec 2023 - May 2024
Nonlinear Dynamics Lab, IIT Bombay

- Engineered coupled ODE models in Python (SciPy, NumPy) to simulate complex interacting systems, characterizing equilibrium stability and long-run steady-state behavior across 13 parameter configurations.
- Conducted sensitivity analysis on initial conditions to map convergence boundaries and identify critical transition thresholds, revealing non-obvious stability regimes.
- Benchmarked 4 competing mathematical models on predictive accuracy under varying parameter conditions, selecting optimal specifications based on quantitative performance criteria.

ADDITIONAL INFORMATION

- *Languages:* Tamil (native), English (fluent), Hindi (fluent)
- *Volunteer Work:* National Service Scheme (2022-2023)
- *Interests:* University Debate (2 time judge for India at the Asian BP Debate Championships), Poker, Cricket, F1