Agastya Raj Singh

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EDUCATION

University of California, San Diego Sep 2022 – Expected Mar 2027

B.S. Mathematics–Computer Science, Minor in Economics

Coursework: Probability & Statistics, Econometrics / Data Analysis, Optimization, Machine Learning, Game Theory / Microeconomics

EXPERIENCE

Co-founder & Head of AI — SkyAI Mar 2026 – Present

India (remote) | AI analytics for SkyJumper trampoline parks

- Co-founded and lead AI development and business strategy for a CCTV intelligence platform, live at the first center and approved for rollout across SkyJumper's 30 centers in 19 cities.
- Coordinate on-site IT staff across 19 cities for installation, and work closely with a core AI and management team of 4–5 people.
- Built the business case and commercial proposal, projecting ₹8–20 lakh in recovered revenue per center per year, or ₹2.4–6 crore (~$0.3–0.7M) annually across 30 centers.
- Built booked-versus-counted reconciliation that compares party bookings and bills against measured headcount; point-of-sale integration in progress.
- Measured against hand counts: within 2 people on 90% of 205 moments (about 1 person average error), and on 100% of 51 held-back moments at parties of up to 30 guests; flagged 4 of 4 over-booked test parties.
- Translated measured counts into KPIs for management: over-bookings, busy and quiet slots, and weekly PDF reports with evidence frames.
- Own the edge deployment path from the first commissioned Jetson node to multi-city rollout: site surveys, camera and NVR integration, RTSP capture, remote operations and per-center configuration with no branch-specific code.

Founding Computer Vision Lead (Intern) — Quantitative Modeling Jan 2025 – Jan 2026

Playar Inc. | San Diego, CA

- Joined at the company's earliest stage as head computer vision engineer, laying the groundwork for proprietary cricket vision software not available on the market, alongside experienced founders and a team of Qualcomm engineers.
- Combined engineering with product and management work, shaping priorities with leadership as the startup grew into an established company.
- Built real-time pipelines extracting trajectory and interaction features from high-frequency data, reaching 98% mAP@0.5 on simulated footage.
- Engineered features correlating biomechanics with outcomes, lifting edge-case reliability ~18%.
- Cut per-frame latency from ~15 ms to ~5 ms (3× speedup, ~200 FPS) using TensorRT and ONNX Runtime.
- Applied time-series and physics-based models to post-contact trajectory estimation at 60 Hz.

Computer Vision Intern — AI for Agricultural Robotics Jul 2025 – Sep 2025

Tech Mahindra | Pune, India (part-time)

- Built a classification and segmentation pipeline reaching 91% mAP and 0.85 IoU across large-scale image datasets.
- Generated 100,000+ synthetic samples with domain randomization, reducing data collection cost.

Lead Engineer (Intern) — Industrial Safety AI Jun 2024 – Aug 2024

VertexPlus Technologies Ltd. | Jaipur, India

- One of the lead engineers on factory safety software detecting helmets and safety vests, registering workers and managing in/out times for compliance.
- Software deployed across multiple factories and still in use today; contributed to management and business decisions alongside engineering.
- Developed real-time anomaly detection on continuous streams, feeding automated alerting and compliance dashboards.

Peer Educator — Academic Integrity Program Mar 2025 – Present

UCSD Academic Integrity Office | San Diego, CA

- Facilitate group sessions and mentor students through accountability processes, building communication and conflict-resolution skills.

PROJECTS

FinSight — Quantitative Research & Backtesting Platform Jan 2025 – Present

- Built an equity research platform on 9 years of S&P 500 constituent data with 15+ technical and volatility indicators.
- Backtested a long-only momentum and mean-reversion strategy, 2015–2024: Sharpe ≈ 1.3, CAGR ≈ 14% vs SPY ≈ 11%, max drawdown ≈ 18%.
- Implemented Kelly and vol-target sizing, 10K-path Monte Carlo stress tests, and an interactive Streamlit dashboard.

AgriSeg — Predictive Yield & Cost Modeling Jul 2025 – Sep 2025

- Framed the unit economics of automated tomato harvesting from measured classification performance (91% mAP, 0.85 IoU) against manual labor baselines.

TECHNICAL SKILLS

Languages: Python, SQL, C++

Quant & Stats: Time-Series Analysis, Statistical Modeling, Backtesting, Monte Carlo, Risk Decomposition, Position Sizing

Tools: Pandas, NumPy, Scikit-learn, Statsmodels, Plotly, Streamlit, Excel, Tableau, Git, Linux, AWS

ATHLETICS

National-Level Rifle Shooter — Top 10 national prospect; 3× State Champion. Olympic Gold Quest (OGQ) "Project Leap"; $120,000 training scholarship (2018–2020). Assistant Coach, Competitive Shooting Program (2019–2021).