Praneeth Rangarajan

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EDUCATION

Georgia State University: College of Arts & Sciences *Class of 2026*
Bachelor of Science in Computer Science

PROJECTS

Co-Evolutionary Financial Market Simulation *2025*

- Built a multi-agent simulation modeling competitive strategy evolution across 10,000+ market cycles, implementing reinforcement learning algorithms that adapt trading behavior based on profit signals and dynamic feedback.
- Created comprehensive visualization and statistical tools to track portfolio performance, measure Sharpe ratios, and observe emergent agent behaviors under 15+ volatility regimes and randomized shock scenarios.
- Conducted 50+ controlled experiments varying learning rates, reward structures, and market conditions to study strategy convergence patterns, stability thresholds, and failure modes in adaptive systems.

Sim Racing Telemetry Dashboard *2024 - Present*

- Developed a real-time telemetry dashboard that processes 60 Hz vehicle data streams with sub-100 ms latency, displaying precise driver inputs, sector times, tire temperatures, and 20+ dynamic performance metrics.
- Implemented lap comparison and consistency analysis tools that identify performance gaps down to 0.01-second precision, pinpointing specific corner entry speeds, braking points, and throttle differences across 100+ laps.
- Designed a modular plugin architecture that supports hot-swappable analytics modules and custom visualizations, reducing feature integration time by 60% without requiring core system modifications.

Algorithmic Trading Bot *2024 - Present*

- Built an automated trading system processing real-time market feeds from 5+ exchanges, detecting opportunities through multi-timeframe analysis of price action, order flow dynamics, and volatility patterns.
- Implemented a comprehensive backtesting engine that evaluates the performance of the strategy over 3+ years of historical data, measuring win rates, maximum drawdown, risk-adjusted returns, and execution slippage.
- Structured the system with an extensive log infrastructure that captures 1000+ daily data points, granular parameter controls, and staged deployment protocols that ensure a safe transition from paper to live trading.

EXPERIENCE

Coding Tutor | Code Hero Academy - Alpharetta, GA *Current*

- Teach programming fundamentals and problem-solving strategies through structured, hands-on sessions covering core concepts in Python, JavaScript, and algorithm design to students aged 8-16.
- Develop interactive coding projects and demonstrations for community events, creating engaging technical showcases that illustrate real-world applications of computer science principles and inspire student interest.

SKILLS

Programming Languages: JavaScript, Python, C++, SQL, TypeScript
Tools & Frameworks: Node.js, Express.js, Docker, Git, MongoDB, NumPy, Pandas, CCXT

EXTRACURRICULARS

Fintech Organization at GSU | Georgia State University - Atlanta, GA

- Participate in workshops and technical discussions on financial technology innovations, focusing on digital finance infrastructure, quantitative analytics, and emerging technologies within modern financial systems.

UGAHacks | University of Georgia - Athens, GA

- Developed functional software prototypes within 24-hour constraints, collaborating with cross-functional teams to design, implement, and iterate practical technical solutions from concept through final demonstration.

CodeDay | LexisNexis Risk Solutions - Alpharetta, GA

- Built three award-winning prototypes during separate 24-hour CodeDay events, leading end-to-end development from initial concept and architecture through implementation, testing, and final presentation to judges.