Xu Shuyao

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EDUCATION

National University of Singapore **Singapore**
Bachelor of Electrical Engineering (minor AI & CS) Expected May 2029

- **GPA:** 4.8 / 5.0
- **Honors:** Science and Technology Scholarship; Champion, Singapore Chinese Debate Championship
- **Relevant Coursework:** Linear Algebra, Calculus, Analytical Method in ECE, Programming Methodology, Project Finance and Management, Quantitative Reasoning
- **Extra-curricular Activities:** Chinese Debate Team

Stanford University **California**
IHP (International Honor Program) Summer Session Jun 2026 - Aug 2026

- **Relevant Coursework:** Machine Learning, Convex Optimization I

EXPERIENCE

Co-Founder, CEO **California**
Alpha Flow Jul. 2026 – Present

- Build world-model training infrastructure for AI-driven quantitative trading at an early-stage startup
- Steer our business direction, align core product engineering with market opportunities, and guide the overall architecture of our AI-powered quantitative frameworks to deliver scalable, high-impact alpha discovery systems.

PROJECT

Alpha Timing— Regime-Aware Quantitative Trading System Jun. 2026 - Jul. 2026
https://github.com/davidxu277/alpha-timing

- Built an end-to-end market-timing system that routes each trading day through a market-regime classifier (RandomForest, 4 states: bull/bear/sideways/crisis, 88% out-of-sample accuracy) to one of four regime-specialist return predictors (gradient-boosted trees forecasting 5-day excess return), with positions set by a cost-aware dual-threshold rule and volatility targeting.
- Engineered 28 trailing, vol-normalized features (momentum, moving-average deviation, realized volatility, VIX, rates, yield curve) across a 39-ticker, 245K-row dataset (2000–2026); enforced strict chronological train/validation/test splits with no look-ahead.
- Validated via a zero-tuning transfer test on SPY: Sharpe 1.05 vs 0.69 buy-and-hold, max drawdown −14% vs −25%, net of 5 bps costs — outperformance driven by correctly de-risking through the 2022 bear market.
- Diagnosed a failed reinforcement-learning (DQN) approach as unstable under low signal-to-noise and replaced it with supervised specialists; used oracle-routing ablations to prove the classifier was not the bottleneck.

Full-Stack Software Engineer — Financial AI Agent Aug. 2026 - Oct. 2026
https://github.com/davidxu277/financial-ai-agent

- Built a full-stack personal finance planning system that analyzes historical transactions, supports human-in-the-loop review of AI-generated classifications, and produces reliable, personalized savings plans.
- Architected a TypeScript monorepo with a mobile-responsive Next.js, Tailwind CSS, and shadcn/ui frontend, a Fastify REST API, and PostgreSQL persistence through Prisma; shared Zod schemas maintained consistent data contracts across the application.
- Developed an AI Agent workflow using the OpenAI Agents SDK, enabling a Principal Agent to interpret user goals and intent, assemble relevant financial context, and select Context, Chat, and financial analysis tools; applied schema validation and user-scoped data access as guardrails.
- Automated testing and deployment through Docker and GitHub Actions CI/CD workflows, with separate development and production configurations supporting repeatable builds and environment-specific deployments.

ML Doctor — Autonomous ML Research Agent for Recommender Systems Aug. 2026 - Sep. 2026
https://github.com/davidxu277/GOAT-LeBron

- Built an autonomous ML research agent that runs the full model-improvement loop unattended — diagnose from its own scorecard, propose and justify a remedy, write the code, retrain, then judge whether the hypothesis held; owned the agent brain (four-role LLM relay + outer control loop) in a four-person team for TikTok TechJam 2026, benchmarked on KuaiRand-Pure ranking.
- Designed the loop so it cannot fool itself: deterministic code handles symptom-to-method matching, cost/benefit scheduling, and post-hoc verification — checking whether the metric a hypothesis named actually moved — leaving the LLM only four decision points per iteration; per-role fuses keep one failed step from aborting a multi-hour run.

SKILLS & INTERESTS

Programming: Python, C, TypeScript
Machine Learning: PyTorch, NumPy, Scikit-learn, Transformer
Languages: Bilingual in Chinese and English
Interests: Travelling, Debating, Soccer