

Tan (Vincent) Le

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EDUCATION

Knox College

Galesburg, IL

Bachelor of Science in Mathematics and Bachelor of Arts in Computer Science, GPA: 3.80/4.00 Expected Jun 2028

- Coursework: Data Structures and Algorithms, Machine Learning, AI, Statistics; CodePath AI 110 and AI 201
- Awards: 131st of 12,600+ teams (top 1%) at IMC Prosperity 3; top 23 at ICPC Mid-Central Regional

EXPERIENCE

Undergraduate Researcher, LLM Agent Systems

May 2026 – Present

Knox College, Advisor: Prof. Andrew Leahy | [GitHub](#)

Galesburg, IL

- Built a ReAct coding agent with no frameworks on self-hosted Qwen3-14B (vLLM, one A6000): reason-act-observe loop, an 11-tool registry with JSON schemas, 24k-token history compaction, termination logic
- Automated a test-fix loop that runs pytest, patches source, and repeats until green (11/11 on a seeded buggy repo), sandboxed with a path-traversal guard and subprocess timeouts
- Designed a 627-task benchmark (163 HumanEval+, 424 MBPP, 37 hand-written hard) with hidden-test grading, then audited and fixed a leak in 93% of MBPP tasks, correcting a misleading 79.9% to an honest 67.3%
- Ported Microsoft's SkillOpt loop to optimize the agent skill file, A/B tested 3 arms on an 84-task held-out split, and reported a null result: 3 to 8 task gaps sat inside a 6-task run-to-run noise floor (McNemar $p > 0.4$)

Undergraduate Researcher, Machine Learning Systems and Forecasting

Jun 2026 – Present

Knox College, Advisor: Prof. Andrew Leahy | [GitHub](#)

Galesburg, IL

- Engineered a 6-command Python CLI that runs an end-to-end walk-forward study over 36 years of daily data in 3 markets, refitting HMM and jump-model regime detectors monthly on past-only data to eliminate look-ahead bias
- Enforced reproducibility via SHA-256 artifact inventories, hashed configs, deterministic JSON, 38 pytest modules
- Instrumented multi-hour runs with a JWT and CSRF-guarded FastAPI SSE dashboard, reconnectable from append-only job journals, and parallelized fits across a 3-worker process pool with pinned BLAS limits
- Benchmarked a 0/1 long-flat overlay against buy-and-hold and always-in controls under 1-day execution lag and 10 bps costs, raising US risk-adjusted return 77% while flagging 2 of 3 markets as no-signal

Founder and President, Quantitative Investment Society

Apr 2025 – Present

Knox College

Galesburg, IL

- Founded the first quant finance and coding society at Knox, growing to 100 members via weekly workshops
- Led the founding officer team and drew 50+ attendees to a campus guest talk by a New York hedge fund founder

PROJECTS

Quantitative Investment Society Website | [TypeScript](#), [Next.js](#), [Prisma](#), [PostgreSQL](#) | [Live](#) Feb 2026 – Present

- Launched an 18-page production site on Vercel as sole developer, persisting game state via Prisma/PostgreSQL
- Implemented a live multiplayer trading game over 8 REST endpoints, polling every team score every 2 seconds
- Caught a scoring bug that showed every player \$0 by unit-testing the scoring rules across 16 cases before launch

ExecDocRAG, Search over Financial Rulebooks | [Python](#), [FAISS](#), [DuckDB](#) | [GitHub](#)

Feb 2026

- Developed a RAG assistant over 8 SEC and FINRA rulebooks that answers questions with page-level citations
- Tuned chunk size, overlap, and embedding model to lift retrieval accuracy to 67% on a 30-question eval set
- Flagged unusual trades across 1,500 simulated orders using trading-cost features aggregated in SQL on DuckDB

Bridge, AI Translator for Family Conversations | [Python](#), [FastAPI](#), [Next.js](#), [TypeScript](#) | [GitHub](#)

Apr 2026

- Delivered a full-stack app at Hack Auggie 2026, wiring a Next.js frontend to a FastAPI + Gemini backend
- Protected the sign-up, chat, and invite flow with 70 automated tests plus an end-to-end browser test

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, Java, SQL, Bash

Web and Systems: Next.js, React, FastAPI, Prisma, PostgreSQL, REST APIs, Server-Sent Events, Vercel, Git, Linux

ML and Testing: PyTorch, scikit-learn, vLLM, LLM tool calling, RAG, pandas, FAISS, DuckDB, pytest, Playwright