Sunny Zhang

Toronto, ON, Canada

ssunny.zhang@mail.utoronto.ca | linkedin.com/in/sunnyzhang8 | github.com/sunnysanitize | sunnyzhang.dev

Education

University of Toronto, St. George *Expected 2029*
Honours BSc, Double Major in Computer Science and Mathematics GPA: 3.7/4.0

Algoverse AI Research Program *Jun 2026 – Present*
Selected research cohort conducting applied AI/ML research under mentor guidance.

Technical Skills

Languages: Python, JavaScript, C/C++, HTML/CSS, SQL
Frameworks/Libraries: FastAPI, Flask, SQLAlchemy, Pandas, NumPy, PyTorch, TensorFlow, scikit-learn, Matplotlib, D3
Tools/Platforms: Git, Docker, PostgreSQL, SQLite, Supabase, Auth0, Hugging Face, pytest, Vercel

Projects

Tiny Society AI | Live Demo · GitHub *Next.js, FastAPI, Python, Supabase, D3*

- Engineered a full-stack multi-agent social simulation and prediction engine where 6+ AI agents reason, remember, reflect, form relationships, and shift opinions over 40+ simulated days.
- Implemented relevance-weighted memory retrieval (semantic relevance, exponential recency decay, and importance scoring) with reflection and goal-driven planning, following the Stanford Generative-Agents architecture.
- Designed a forecasting layer that aggregates per-agent beliefs into population-level topic distributions, uncertainty scores, confidence estimates, and pivotal-day traces.
- Streamed live simulations over Server-Sent Events and bounded LLM cost with softmax-weighted agent selection, concurrent inference, and deterministic state updates.

LaunchPilot | Devpost · GitHub *Next.js, TypeScript, FastAPI, Auth0, Backboard.io*

- Built an AI launch copilot in 72 hours (2-person team) at Hack Canada 2026; won sole Backboard.io Best Use prize (1 of 59, $500) and placed top 3 of 94 in the SPUR Build a Real Canadian Startup track ($500 grant).
- Developed a supervised launch workflow that turns a project brief or GitHub repository into market research, positioning, ICPs, messaging, KPIs, execution plans, and outreach drafts.
- Orchestrated research, positioning, and execution stages of 5 agents each via persistent threads and memory snapshots so each stage reused structured context from prior runs.
- Integrated GitHub context ingestion, Auth0-scoped permissions, and approval-gated execution actions to support secure, repository-aware recommendations.

Market Regime Forecasting | GitHub *Python, Pandas, Flask, pytest*

- Implemented a first-order Markov chain modeling daily equity return regimes over $\sim$60 trading days.
- Cleaned CSV prices, computed returns, and built a row-normalized 3×3 transition matrix for forecasts.
- Built a Flask dashboard with threshold tuning and 10,000+ Monte Carlo simulations for sensitivity analysis.
- Wrote unit tests for state classification and transition logic to validate probability correctness.

UofT Theft Data Map | Live Demo · GitHub *Next.js, TypeScript, FastAPI, SQLite*

- Built a full-stack app mapping Toronto Police theft-over-$5,000 incidents around the UofT St. George campus.
- Created a Python/FastAPI pipeline to filter incidents by campus boundaries and normalize records in SQLite.
- Implemented an interactive OpenStreetMap heatmap with summary metrics and hotspot visualization.

Experience

YM Tech Council *Sep 2023 – Jul 2025*

- Provided real-time technical support across 3 robotics/programming tournaments per semester (70+ participants each): setup, infrastructure, and troubleshooting.
- Coordinated scheduling, logistics, and resources for multi-team technical and student programming events.