Landau Tzou

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Education

University of Illinois Urbana-Champaign — Urbana, IL
Bachelor of Science in Statistics & Computer Science — *Expected: May 2029*

Experience

Illinois Business Consulting — Aug. 2026 – Present
Software Developer — *Urbana, IL*

- Designing a normalized PostgreSQL schema on GCP Cloud SQL modeling alumni profiles and multi-entry work histories
- Implementing a weighted scoring algorithm ranking alumni by industry, expertise, and seniority for ~300 active consultants
- Building FastAPI ingestion pipeline mapping 14 intake fields into relational tables with foreign-key constraints

Elite Kung Fu Learning Academy — Jan. 2026 – Aug. 2026
Assistant Coach — *Fremont, CA*

- Coached technique, drills, routines, and conditioning for 50+ youth, adult, and elderly contemporary wushu athletes
- Designed personalized training plans for national-team athletes targeting strength, flexibility, and form improvements

NASA AMES Research Center — May 2025 - Aug. 2025
Research Intern — *Remote*

- Built a deep RL (Q-learning) framework optimizing eVTOL vehicle ascent trajectories for energy and noise efficiency
- Integrated PSOPT direct collocation with RL policy learning to refine trajectories under real-world flight constraints
- Co-authored NASA Technical Memorandum 20250009012, presented methodology and tradeoffs to 40+ researchers

KungFuDirect & World Taiji Science Foundation — Apr. 2025 - Jul. 2025
Volunteer IT Support & Event Coordinator — *Santa Clara, CA*

- Maintained participant records and registration data in Excel for 600+ athletes across 15+ countries, managing sign-up processing
- Troubleshot platform registration/processing errors and livestream setup issues to reduce athlete and staff wait time by 25%

Projects

Discord Assistant | *TypeScript, Node.js, Discord.js, Google APIs* — Aug. 2026 - Present

- Built a TypeScript Discord bot merging Canvas iCal, Google Calendar, and Google Tasks (OAuth 2.0) into cron-scheduled plans
- Implemented Groq LLM intent parsing into structured JSON commands to create, edit, and delete events behind button confirms
- Engineered a bus router over MTD transit schedules and a token-authed Node.js REST API serving an offline-capable PWA

Supply-chain Early Warning (Databricks Track) | *Python, SQL, Databricks, Unity Catalog* — Nov. 2026 - Nov. 2026

- Built a 45-node supply graph in Databricks SQL with criticality ranking, validation checks, and a DuckDB test runner
- Designed shared Unity Catalog schema contracts and derived typed disruption labels from customs and shipment records
- Engineered a NumPy/SciPy Monte Carlo simulator and greedy ordering policy, ranking bottlenecks by counterfactual shocks

Data-Parallel Training Simulator | *Python, Pytorch* — Jun. 2026 - Sep. 2026

- Built a data-parallel training simulator modeling sync. multi-worker learning, separating sync mechanism from policy
- Partitioned datasets via random_split with independent DataLoaders driving parallel multiprocessing trainers
- Compared convergence under varying sync intervals through per-epoch loss and accuracy tracking across workers

Docket Reader | *Python, MediaPipe, OpenCV, NumPy* — Apr. 2026 - Jul. 2026

- Built a Python/WSGI web app parsing USPTO filings via PDF text-layer extraction, with OCR fallback for scanned docs
- Implemented regex extraction pulling docket, serial, and confirmation number, dates, and statutory periods from filing text
- Automated an openpyxl pipeline serving an updated workbook as for syncing into a firm's Master Docket tracker

Real-Time Facial Expression and Pose Detection System | *Python, MediaPipe, OpenCV, NumPy* — Apr. 2026 - Jul. 2026

- Built a real-time CV pipeline classifying three face/pose states at 25 FPS using MediaPipe face mesh and OpenCV
- Implemented smile detection via lip-landmark mouth aspect ratio and hand-raise detection via wrist-shoulder offset
- Designed a priority layer (hands-up > smiling > neutral) emitting one deterministic emoji overlay per frame

Skills

Languages: Python, Java, C/C++, TypeScript, JavaScript, SQL (Postgres), R, HTML/CSS
Frameworks & Libraries: PyTorch, NumPy, pandas, SciPy, Node.js, React, Next.js, FastAPI, Discord.js, OpenCV, MediaPipe, STAPL
Developer Tools: Git, Linux, Databricks, Google Cloud Platform, DuckDB, Claude Code, Cursor