

Andre Tsoi

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EDUCATION

Purdue University

Bachelor of Science in Computer Science

West Lafayette, IN

Expected May 2028

EXPERIENCE

Software Engineering Researcher

AstraZeneca

Aug. 2026 – Present

West Lafayette, IN

- Developed a Next.js, React, and TypeScript web interface for a platform integrating parsers and LLM outputs
- Built authentication, responsive frontend components, and user workflows for accessing processed research data
- Collaborated with Python and LLM teams to integrate parsing and model outputs into the platform

Software Engineering Intern

Genie AI

May 2026 – Aug. 2026

Remote

- Built a full-stack portal using Next.js, React, and TypeScript, owning frontend architecture and deployment
- Designed a Supabase backend (Postgres, Auth, REST APIs) to persist user progress with real-time synchronization
- Developed hierarchical navigation with database-backed progress tracking and custom Framer Motion animations

Data Science Researcher

Kautex

Jan. 2025 – May 2025

West Lafayette, IN

- Engineered various ML models to predict Melt Flow Index, achieving 97.9% validation accuracy and minimal error
- Optimized model training through backend pipelines for feature extraction and multivariate time-series analysis
- Delivered technical documentation, reports, and presentations collaboratively within Agile development cycles

Machine Learning Researcher

BASF

Aug. 2024 – Dec. 2025

West Lafayette, IN

- Developed Temporal Convolutional Network (TCN) models, improving grape yield forecasting accuracy by 18%
- Enhanced training stability by optimizing data preprocessing and model development pipelines
- Conveyed technical insights in 10+ mentor meetings and discussions on deep learning architectures for forecasting

RESEARCH

Software Verification Researcher

Purdue University

Aug. 2026 – Present

West Lafayette, IN

- Researched LLM-based proof generation for software verification in Verilog under Prof. Jenna DiVincenzo
- Developed methods to generate and validate formal proofs for hardware and software correctness
- Evaluated LLM-generated proofs for accuracy and compatibility with verification tools

PROJECTS

Studify | *Flask, SQLite, JavaScript, Regression Analysis, Correlation Analysis*

Dec. 2025 – Present

- Built a study analytics app that correlates study habits with performance to create personalized recommendations
- Engineered features capturing spacing effects, diminishing returns analysis, and cramming penalty calculations
- Applied regression and correlation analysis to identify and report which habits best predicted performance changes

Momentum | *Swift, Firebase, NoSQL, UI Design, MVC*

June 2025 – Aug. 2025

- Built a reward-driven social habit-tracking iOS app in Swift, centered on rewards, streaks, and feedback loops
- Implemented Firebase NoSQL models for real-time updates, authentication, and social interactions
- Conducted beta testing with 100+ users to iteratively refine features and improve usability
- Increased user task completion by ~40% during beta testing through reward-based user experience

TECHNICAL SKILLS

Languages: Python, Java, C++, C#, TypeScript, JavaScript, SQL, Swift, Kotlin, R, HTML/CSS

Frameworks: React, Next.js, Node.js, Flask, JUnit, SwiftUI

Databases & Cloud: PostgreSQL, Supabase, Firebase, MongoDB, Snowflake, Vercel, Google Cloud

Libraries & Tools: pandas, NumPy, Matplotlib, scikit-learn, TensorFlow, Git, Power BI, VS Code, PyCharm, IntelliJ