

Zixiang Zhang

AI Software Engineer · Applied ML · Agentic Systems · Swift / Python

Software engineer and machine learning engineer building native Apple-platform applications, applied ML/data projects, agentic-system documentation, and audio-focused developer tools. Creator of 11 software products, with 8 currently published on the App Store and Lumyna / Mathpedition scheduled to go live this week. Strong mathematical and statistical background from the University of Toronto, with practical engineering work across Swift/SwiftUI, Python, PyTorch, NumPy, pandas, R Shiny, SQLite, and product documentation.

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LOCATION	Toronto, Ontario, Canada
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GITHUB	github.com/Kircerta
WEBSITE	zixiangzhang.com
TARGET	AI / ML / Software Engineering roles

TECHNICAL SKILLS

AI / ML	Python, PyTorch, NumPy, pandas, scikit-learn, PCA, statistical modeling	APPLE	Swift, SwiftUI, iOS, macOS, iPadOS, watchOS, App Store Connect
DATA / WEB	R, R Shiny, SQLite, Git, HTML, CSS, technical documentation	AUDIO	Audio engineering, signal chains, synthesis, mixing, mastering, sound design

EXPERIENCE

Independent Software Engineer / Apple Platform Developer

Jun 2025 – Present

Toronto, ON · Hybrid

- Designed, developed, and shipped 11 native applications across macOS, iOS, iPadOS, and watchOS, spanning productivity, developer tools, academic utilities, health/wellness, and creative workflows.
- Owned full product lifecycle: architecture, Swift/SwiftUI implementation, UI/UX, debugging, App Store Connect compliance, privacy documentation, product landing pages, user manuals, and release iteration.
- Published 8 products on the App Store, with Lumyna and Mathpedition scheduled to go live this week.
- Built local-first and privacy-focused tools with platform-specific interaction design, structured state management, file workflows, and native system integrations.

SWIFT · SWIFTUI · IOS · MACOS · WATCHOS · APP STORE CONNECT · PRODUCT DOCUMENTATION

Audio Systems Designer / Sound Designer

Sep 2022 – Present

Independent / project-based collaborations

- Led audio development for Deck Of Harvest, Backtrack, Shiyue, and Cyberslime, providing original soundtracks, sound effects, foley recording, synthesis-based sound design, and implementation-ready assets.
- Applied professional audio-domain knowledge to software and interface design decisions for audio tools, music systems, and creative-technology products.

AUDIO SYSTEMS · SOUND DESIGN · SYNTHESIS · SIGNAL CHAINS

Professional Audio Engineer & Music Producer - Alexxon

May 2020 – Present

Independent artist and producer

- Produced and released 50+ original tracks distributed globally, with support and features from Martin Garrix, Ferry Corsten, Anjunadeep Edition, and Monstercat Silk Showcase.
- Built a six-year professional production workflow covering composition, synthesis, recording, routing, mixing, mastering, release preparation, and visual/artwork coordination.

ABLETON LIVE · FL STUDIO · LOGIC PRO · LUNA · MIXING · MASTERING

SELECTED PROJECTS

AGN: Agentic Network

2025 – Present

Agentic systems · workflow architecture · technical documentation · github.com/Kircerta/AGN_Protocol

- Designed and documented an agentic-network framework covering orchestration, protocol design, executor/reviewer roles, backend workflow drafts, acceptance criteria, and multi-agent coordination patterns.
- Structured a technical writing matrix for protocols, blueprints, coordinator logic, agent setup, tool usage, workflow improvements, and acceptance workflows.

AGENTIC SYSTEMS · WORKFLOW ARCHITECTURE · PROTOCOLS · TECHNICAL WRITING

Harmonic Convergence

2026

Apple Swift Student Challenge 2026 Winner · zixiangzhang.com/apps/HarmonicConvergence/harmonic-convergence

- Built an interactive learning project explaining Independent Component Analysis through mathematical, visual, and audio-based interactions.
- Combined Swift/SwiftUI implementation with linear algebra, signal separation, interface design, and original audio-system work.

SWIFT · SWIFTUI · LINEAR ALGEBRA · ICA · AUDIO INTERACTION

Structural Dependencies of Handwritten Digits

Nov 2025 – Present

UofT research project · MNIST · statistical structure · github.com/Kircerta/PCA_CCA_mnist_visualization

- Explored structural linear dependencies in handwritten digits using dimensionality reduction and statistical analysis of geometric digit fragments.
- Implemented experiments using Python, NumPy, scikit-learn, PCA, and linear-algebra workflows to study reproducible structure in MNIST digit data.

PYTHON · NUMPY · SCIKIT-LEARN · PCA · LINEAR ALGEBRA

Toronto Housing Need Explorer

2026

Interactive public-data dashboard · technical lead · zixiangzhang.com/projects/toronto-housing-need-explorer

- Led lifecycle development of an interactive dashboard visualizing Toronto housing disparities using census-related datasets.
- Engineered data-cleaning and harmonization workflows for disjoint variables across 2016-2021 datasets.

R · SHINY · DATA WRANGLING · VISUALIZATION

LMA: Local Audio Sample and MIDI Manager

Jul 2025 – Present

Open-source audio asset manager · github.com/Kircerta/LocalAudioSampleManager.git

- Built a local audio sample and MIDI management tool using Python, SQLite, and PyQt for sorting and managing large-scale audio libraries.
- Designed file traversal and organization workflows for local-first creative asset management.

PYTHON · SQLITE · PYQT · AUDIO TOOLING · LOCAL-FIRST SOFTWARE

EDUCATION & AWARDS

University of Toronto St. George

Aug 2021 – Aug 2026

Honours Bachelor of Science · ASSPE1890 Mathematics & Its Applications Specialist (Probability/Statistics) Specialist

- Academic focus: probability, statistics, optimization, algorithm design, data modeling, linear algebra, and applied mathematical methods.
- Expected graduation: Aug 2026.

Swift Student Challenge 2026 Winner

Mar 2026

Apple · associated with University of Toronto

- Recognized for Harmonic Convergence, an interactive Swift project explaining Independent Component Analysis through accessible mathematical and audio-visual interaction.