

Ruoyu (Ben) Zhou

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EDUCATION

University of Toronto, St. George — B.Sc. Computer Science & Finance/Economics

Sept 2024 – June 2028 (expected)

Cumulative GPA: 3.8 / 4.0

SKILLS

Languages: Python, TypeScript, JavaScript, Swift, Java, C++, SQL, Dart, Bash

Frameworks: React, Next.js, Node.js, FastAPI, SwiftUI, Expo, Flutter, PyTorch, ROS, PyTest, Jest

Databases and DevOps: PostgreSQL, MongoDB, Docker, Git, Linux, CI/CD, Vercel

PROJECTS

Pixie | Hack the North 2026 (349 projects), won the Intact and Federato tracks | [GitHub](#) | [Website](#)

Sept 2026

Python, TypeScript, FastAPI, Next.js, Expo, Elastic

- Built an insurance risk engine alone in one weekend: a FastAPI backend behind two products, a Next.js underwriting desk that scores or routes 158 commercial submissions and an Expo mobile app for home and auto insurance.
- Split the work so AI agents choose what to look up and explain the result while code computes every score, price and total; a check blocks any explanation containing a number the tools did not return.

UofTime | University of Toronto timetable builder | uoftime.com

Sept 2026 – Present

React, TypeScript, MapLibre, MCP, Vercel

- Built and run uoftime.com alone: students pick sections from 8,000+ courses on 3 campuses and see each day's walk on a map.
- Stored the whole timetable in the URL, so the site needs no accounts and no database, and a serverless function serves the same link as a feed that any calendar app can subscribe to.
- Wrote a generator that lists every conflict-free timetable for the chosen courses, and an MCP server with five tools that lets Claude or ChatGPT build a timetable in conversation.

Keypace | macOS typing test on the Mac App Store | [Website](#)

June 2026 – Present

Swift, SwiftUI

- Shipped a native Mac typing test alone, with the typing engine in its own Swift package covered by 98 unit tests.
- Released version 1.1 with a menu-bar quick test that opens from any app by keyboard shortcut and an in-app purchase that unlocks a per-key heatmap and drills built from the user's weakest keys.

DataFrame | Runs Python on a node canvas in the browser | [GitHub](#) | [Website](#)

February 2026

React, TypeScript, FastAPI, Pyodide, CodeMirror, tldraw, Gemini API

- Built a full-stack canvas where each node runs a Python snippet in the browser through Pyodide, so no code leaves the tab.
- Wrote the graph editor on tldraw with code, math, conditional, plot, file-input and Gemini nodes that run in dependency order.

BlindSpot | Walking navigation for blind and low-vision users | [GitHub](#)

February 2026

Flutter, Dart, Python, OpenCV, LiveKit, Gemini API, Google Maps API, ElevenLabs

- Built a Flutter app for iOS and Android that guides walking by voice and speaks OpenCV obstacle alerts in under 2 seconds.
- Wrote the voice agent as a LiveKit worker in Python that chains ElevenLabs speech-to-text, Gemini and ElevenLabs text-to-speech, and answers turn-by-turn requests through the Google Maps API.

Context-Based Captioning System | UofT Trustworthy Machine Intelligence

Sept 2025 – Present

Python, PyTorch, Hugging Face, OpenAI Whisper

- Fine-tuned OpenAI Whisper for lecture speech recognition and built the pipeline that runs live microphone audio through it to show captions in real time and produce a corrected transcript after the lecture.

EXPERIENCE

University of Toronto Autonomous Scale Racing (UTASR)

2025–26

Firmware and Design Team Member

Toronto, ON

- Wrote C++ firmware for NVIDIA Jetson and Arduino that reads the IMU and encoders and drives actuators over UART, SPI and I2C.
- Tested firmware on the vehicle with ROS before track deployment to confirm the control stack's processes kept communicating.

Canadian University Software Engineering Conference (CUSEC)

Sept 2025 – Present

Director of UI/UX

Toronto, ON

- Lead design of the website for a national student-run software engineering conference: wireframes, mockups and interface flows in Figma, reviewed with the developer team and handed off to them to build.

ADDITIONAL

Clubs: Marketing Manager, Rotman Commerce Venture Capital; built rcventure.ca (Lighthouse accessibility 100 on every page).

Hackathons: 11x winner, 2x organizer, 15+ attended.

Languages: English & Mandarin Chinese (native), French (limited).

Volunteer: Led media production for non-profits; co-raised over \$20,000 CAD for homeless support in Vancouver, BC.