RYAN (ZHENGRUI) YU

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EDUCATION

University of Toronto St. George   Sep 2024 – May 2028
BASc, Computer Science & Statistics (ASIP Co-op)   *Toronto, ON*
- **Relevant Coursework:** Software Design (CSC207), Data Structures & Analysis (CSC263), Probability, Statistics & Data Analysis I (STA237), Computer Organization (CSC258)

PROJECTS

InstaReply | *TypeScript, Node.js, Fastify, PostgreSQL, Prisma, Meta Webhooks*   Feb 2026
- Built an event-driven Instagram DM auto-responder with idempotent message handling and PostgreSQL persistence, sustaining **100%** successful responses across **2K+** webhook test requests.
- Designed an asynchronous webhook pipeline with in-memory queuing, achieving **4–7ms p50** latency under load testing with up to **100** concurrent requests.
- Implemented hybrid reply generation with rules-first routing, contact segmentation, and LLM fallback, sustaining **~3k req/s** webhook throughput under burst testing.

VeloType | *TypeScript, React, WebSocket, PostgreSQL, Fastify, Prisma*   Feb 2026
- Built and deployed real-time 1v1 competitive typing platform with a responsive React UI, deterministic text generation, and ELO-based matchmaking.
- Implemented a **Fastify/WebSocket** backend with server-authoritative state synchronization and scoring, achieving <**50ms** event propagation under stress testing.
- Designed a strongly typed game engine with transactional PostgreSQL persistence (**Prisma**), supporting **1K+** simulated matches and **100+** user accounts.

HiReady | *Python, JavaScript, Node.js, Flask*   Jan 2026
- Built an AI-powered learning analytics platform for video-based training; ranked **Top 40** UofTHacks 13.
- Implemented a service-oriented backend using **Node.js and Flask**, integrating **2** external AI APIs (**Twelve Labs, Backboard**) and **MongoDB** to process **10+** demo training videos during live judging.
- Designed privacy-first analytics pipelines with pseudonymized identifiers and secure **Cloudflare R2** presigned storage, delivering segment-level video insights in **~10s** during demo testing.

Personal Website | *JavaScript, React, Vite*   May 2025
- Built and deployed a responsive portfolio website using React and Vite on Vercel, implementing semantic HTML and modern CSS (Flexbox/Grid) for clean, accessible layouts.
- Created reusable UI components and interactive sections, ensuring responsive, high-performance experiences across desktop and mobile browsers.

EXPERIENCE

Kumon   Mar 2022 – May 2024
Metrotown Kumon   *Burnaby, BC*
- Assisted 60+ students weekly and graded 200+ assignments per shift, maintaining effective workflow.
- Documented progress and provided tailored Math and English support for 25+ recurring students.

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, SQL, Java, C, HTML5, CSS3, R
Frameworks: React, Next.js, Node.js, Fastify, TensorFlow, FastAPI, Flask, WebSocket, Tailwind CSS
Tools: PostgreSQL, MongoDB, SQLite, Prisma, Docker, Git, Cloudflare R2, Vercel, REST APIs, OpenAI APIs