Arthur Gao

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arthurgao.dev
github.com/affixrevy

Experience

Teaching Assistant · **University of Toronto** Winter 2023 & 2024

- Provided technical support to students by troubleshooting labs, grading tests, and answering questions on digital logic and MIPS assembly
- Recognized as the most experienced lab TA by teaching team

Web Developer · **Bank of Canada** May – Sept 2023

- Assisted with the transition of Bank websites from a monolithic web stack to a distributed system using Kubernetes and Docker, resolving various compatibility bugs during the transition
- Contribut5ed to sprint planning and retrospectives in an Agile development environment
- Pioneered and implemented novel rendering techniques with Amcharts, reducing render-blocking time by 4x
- Developed and documented a new YouTube rendering component, increasing video embed rendering speed by 250x

Director of Safety · **U of T Ski and Snowboard Club** 2022 - 2024

- Led an eight-member Crisis Management Response Team to address challenges at large-scale ski events
- Rapidly implemented solutions to trip complications supporting over 1000 attendees

Director of Video · **National Stiltwalkers of Canada** June – Sept 2021

- Directed and produced two live shows with over 5,000 viewers, managing collaborations with artistic and technical directors to meet a strict 30-day production deadline
- Developed a chroma key tracking system that integrates a mobile camera with Unreal Engine 5, enabling dynamic background adjustments in real-time based on camera movements
- Led the integration of Unreal Engine output with the Blackmagic API to automate background changes concurrent with camera switches

Publication

Bing SU, Wyatt CARLSON, Jiabin FAN, **Arthur GAO**, Yanjun SHAO, Guohui LIN. Sharing bicycle relocating with minimum carbon emission. Operations Research Transactions, 2022, 26(3): 75-91

Education

University of Toronto (2024)

Honours Bachelor of Science
Computer Science Specialist

Skills

Programming Languages

Rust, C++, C, JavaScript, TypeScript, HTML, CSS

Libraries & Frameworks

React, Next.js, Node.js, Tailwind CSS,

Tools & Platform

Figma, Final Cut Pro X

Selected Projects

Embedded Chess

Designed and built a smart chessboard that detects pieces and highlights valid moves using a custom PCB with Hall Effect switches and WS2812B LEDs. The software, developed in Rust, runs on an ARM Cortex-M4 discovery board.

Projection Mapping

Designed software that lowered the barrier of entry for storytelling through projection mapping simplifying the creation process of animations making them accessible to a middle school classroom. The concept is currently being developed for a trial run in a Toronto middle school