

# Henry Zhangxiao

BACHELOR OF COMPUTER SCIENCE · HONOURS · CARLETON UNIVERSITY

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## Skills

### Languages

Python, C, C++, Java, Makefile, Shell, JavaScript, TypeScript, HTML/CSS

### Technologies

Linux/RHEL/CentOS, Git, OpenShift, Kubernetes, Private Cloud, QNX, Django, Docker/Podman, React, GDB, GCC, RPi

## Experience

### IBM

Markham, ON

SOFTWARE DEVELOPMENT ENGINEER IN TEST • DEVOPS ENGINEER • AUTOMATION DEVELOPMENT AND TESTING ENGINEER

May 2022 - Aug 2023

- Deployed and **regression tested CD, LTSR**, and **Future** release candidate builds using automated **Jenkins CI/CD pipelines** on **AWS, Azure**, and **private cloud Fyre clusters**
- Deployed, upgraded, and manually intervened **Kubernetes clusters** deployed on **OpenShift Container Platform** to debug IBM Cloud Platform Common Services
- Created multiple **Jenkins pipelines** to test **release candidate builds** by enhancing, upgrading, and testing our deployment **Makefiles** and **Bash scripts**
- Maintained a managerial dashboard built in **Django** with over **10,000** GitHub issues and synchronized using **crontab**
- Maintained and upgraded an automation results dashboard built in **JavaScript** and **React**
- Integrated an **automated AWS** resource cleanup script leveraging a **containerized Docker environment**

### IBM

New York, NY

SITE RELIABILITY ENGINEER • IBM SAAS PLATFORM • MULTI CLOUD SAAS PLATFORM

Jul 2023 - Aug 2023

- Automated** the **deployment** and **provisioning** of **Prometheus** to provide monitoring and alerting functionality on OpenShift 4.12
- Defined and upgraded existing **Kubernetes clusters** using **Helm** and **Helmfile**
- Defined and rendered **.gotmpl** template files for Prometheus, AlertManager, and Thanos

### IBM

Austin, TX

FULL-STACK ENGINEER • IBM USER EXPERIENCE DESIGN TEAM - CROSS PAK CONSISTENCY • RED HAT

Jul 2022 - Sep 2022

- Led development** of a **Dynamic Plugins** pilot project deployed using **Kubernetes** on OpenShift Container Platform 4.11
- Created a mockup of the UI using design prototypes from **Figma** and **InVision**
- Developed using **TypeScript**, **Patternfly**, and **Podman**
- Deployed locally using **OKD** and online using **Fyre clusters**
- Built and pushed to **Quay.io** image registry using **Docker**

## Projects

### QNX Car Simulator

Carleton University

[HTTPS://GITHUB.COM/HENRYZHANGXIAO/QNX-CAR-SIMULATOR](https://github.com/HenryZhangxiao/qnx-car-simulator)

Dec 2022

- A **real-time** car simulator written in **C** using **QNX Neutrino** utilizing **QNX SDP 7.1**
- Hosted locally using a server created with **name\_attach** that receives and delivers **messages** and **pulses**
- Implemented modularly using the concept of **parent-child processes** and **threads** to satisfy **microkernel** properties

### Nintendo Switch Autoclicker

Personal Project

[HTTPS://GITHUB.COM/HENRYZHANGXIAO/NINTENDO-SWITCH-AUTOCLICKER](https://github.com/HenryZhangxiao/nintendo-switch-autoclicker)

Jun 2022

- An **automated** button clicker for the Nintendo Switch using a **9g Micro Servo** and a **Raspberry Pi**
- Executed with **Python3** using the **PiGPIO library** and ran on **Raspberry Pi OS** (Debian)
- Servo controlled using **Pulse Width Modulation (PWM)**

### Yume

Carleton University

[HTTPS://GITHUB.COM/HENRYZHANGXIAO/YUME](https://github.com/HenryZhangxiao/yume)

Apr 2022

- A **2D real-time** game written in **C++** using **OpenGL**, **OpenAL**, **SOIL**, **ALUT**, **GLEW**, **GLFW**, and the **GLM** libraries
- Physical**, **parametric**, and **hierarchical movement** all handled through **matrix transformations**
- Graphics are drawn using **vertex shaders** and **fragment shaders** using **GLSL**

## Education

### Carleton University

Ottawa, ON

BACHELOR OF COMPUTER SCIENCE HONOURS

Sep 2019 - Jun 2024

**Relevant Courses:** Discrete Structures I, Discrete Structures II, Design and Analysis of Algorithms I, Introduction to Systems Programming, Abstract Data Types and Algorithms, Introduction to Software Engineering, Operating Systems, Real-time Operating Systems, Object-Oriented Software Engineering, Introduction to Reinforcement Learning, Computer Vision, Database Management Systems, Programming Paradigms, Fundamentals of Web Applications, Social Networking, Introduction to Computer Game Design, Computer Game Design and Development