



TOBY TOMKINSON

Computer Science Doctoral Student

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Auckland, New Zealand

in toby-j-tomkinson

ttom795

Portfolio Website: <http://ttom795.github.io>

TECH SKILLS

Programming Languages:

Python C# C++ JavaScript
SQL LaTeX

Web Development:

MongoDB Express.js
React Node.js Streamlit
HTML CSS Vite AWS

Software:

Microsoft Office Git & GitHub
Google Workspace Nagios
Unity Engine Mono & .NET
Docker Unreal Engine

Operating Systems:

Windows OSX/macOS
Debian Ubuntu

Development Methods:

Agile Scrum Kanban
Waterfall Pair Programming

SOFT SKILLS

Attention to Detail Quick Learner
Adaptability Multitasking Abilities
Effective Communication
Teamwork and Collaboration
Time Management Creativity

CERTIFICATIONS

Red Cross Compr. First Aid
ICDL Certified

LANGUAGES

English: Native
Japanese: Conversational

REFERENCES

Available on request

ABOUT ME

I'm a hardworking and reliable individual with a strong foundation in technology and excellent interpersonal skills. I have a solid academic background, a recently completed dissertation, and am a doctoral student at the University of Auckland. I thrive in environments with exposure to a variety of experiences and challenges.

EXPERIENCE

Research Intern | Internet Initiative Japan

2024

Tokyo, Japan

- Worked using Docker, Redis and Streamlit to develop a real-time caching simulation for Low Earth Orbit satellite networks. This involved using Docker containers to simulate network requests and testing caching patterns with data provided by Netflix to optimise network performance and data delivery.

Graduate Teaching Assistant | University of Auckland

2022 – 2024

Auckland, New Zealand

- 2022/23 - Provided tutoring, graded assignments/tests and provided constructive feedback through evaluation for COMPSCI 215 and COMPSCI 315.
- 2024 - Provided tutoring, graded assignments/tests and provided constructive feedback through evaluation for COMPSCI 215 and COMPSCI 399.
- I also created software that interfaces with Dividni and Canvas to automate formatting and delivery of marks.

Research Assistant | University of Auckland

2021 – 2022

Auckland, New Zealand

- Worked under Dr. Ulrich Speidel to deploy Nagios to the Auckland Satellite TCP/IP Traffic Simulator to monitor server latencies and network topology.
- Furthermore, I developed software for a novel routing algorithm for use with Low Earth Orbit satellites (available [here](#)) using the Unity Engine.

Research Assistant | University of Auckland

2021

Auckland, New Zealand

- Worked under Dr. Alex Shaw to develop a procedural construction site for Virtual Reality-based risk assessment training for City Rail Link using Unity Engine.

C++ Developer | Beyond Studios

2019 – 2023

Remote, United States

- Responsible for gameplay design, developing game systems using C++ within Unreal Engine 4, designing gameplay mechanics and optimising code.

MOST PROUD OF



Academic Results

I've received no marks below an A grade for the last 3 years of my study, with a GPA of 8.122/9 (3.8/4.0) for my Honours.



Dissertation Completion

I developed a novel network routing algorithm for Low Earth Orbit satellite networks as the focus of my dissertation. This not only received high praise from my academic mentors but also an A+ grade from the University of Auckland.



Volunteer Staff - Burnett Foundation Aotearoa

I take great pride in my volunteer work at the Burnett Foundation Aotearoa.

HOBBIES



Gaming

Avid fan of RPG games. Currently playing *Skyrim* for the n^{th} time as well as *Baldur's Gate 3*.



Exercise

I'm a regular gym goer, Muay Thai amateur, and firm believer of the adage "a healthy body is a healthy mind".



Reading

I love both adventure and comedy - Terry Pratchett and Bill Bryson are a couple of my favourite authors.

Software Developer | Gladstone Games



2017 – 2023



Remote, United States

- Responsible for ensuring a good user experience and gameplay balance, optimising code, implementing asynchronous scene/object/player instantiation and loading, and designing level layouts - a multifaceted role that involves both game design concepts and C# development.

EDUCATION

Bachelor of Science | University of Auckland



2019 – 2022



Auckland, New Zealand

Bachelor of Science (BSc) majoring in Computer Science.

Bachelor of Science (Honours) | University of Auckland



2022 – 2023



Auckland, New Zealand

Bachelor of Science Honours (BSc Hons) majoring in Computer Science.

Doctor of Philosophy | University of Auckland



2024 – Current



Auckland, New Zealand

Doctor of Philosophy (PhD) in Computer Science.

PERSONAL PROJECTS

Low Earth Orbit Satellite Simulator | 🌐 | Unity Engine & C#

Simulates and visualises approximate great circle routing in Low Earth Orbit satellite networks. This project was iterated on for my dissertation.

Hero Academia: Beyond | 🌐 | Unreal Engine & C++

As a game designer and programmer for "Hero Academia: Beyond," I designed gameplay mechanics, environments, and ported the game from desktop to mobile with full gameplay, rendering and post-processing functionality.

Orangutan Monitor | 🌐 | C++ & OpenGL

A standalone software application designed to monitor page-file size efficiently, useful when paired with memory-intensive programs like Yuzu. This tool comes as a single .exe file without the need for additional dependencies or DLLs.

Chippure | 🌐 | Python

Chippure is a Python-based Chip-8 emulator developed using Python's default libraries. It emulates the Chip-8 system and allows users to play Chip-8 games on modern hardware, and demonstrates the effectiveness of Python's default libraries in building emulation software.

Various Games | Unreal Engine & C++

- 🌐 | Showcase - Shonen Jump Game
- 🌐 | Showcase - My Hero Karting
- 🌐 | Showcase - Shield Hero Fangame
- 🌐 | Showcase - Mob Psycho Sentiment