

Guanzhong Chen

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Academics

University of Waterloo

Waterloo, ON, Canada

Bachelor of Software Engineering, Graduated with Distinction and Dean's Honours

2016 – 2021

Achievements

- Recipient of Sandford Fleming Foundation Award for Academic Excellence with 93.92% cumulative average
- Silver medallist in Canadian Computing Olympiad in 2015 and 2016 (around top 10 in Canada)

Professional Experience

Jane Street Group

New York, NY, United States

Software Engineering Intern

September 2020 – December 2020

- Improved statistic gathering for internal systems, making them more accessible and removing bad data.
- Created a tool to verify whether internal applications are deployed according to company standards.

Technologies used: OCaml, JIRA, Confluence, other internal tooling

Stripe Inc.

San Francisco, CA, United States

Software Engineering Intern

January 2020 – April 2020

Member of the User Security team, worked on improving the user's experience with two-factor authentication.

- Added support for two-factor authentication through biometrics with technologies like Windows Hello and Touch ID.

Technologies used: Ruby, JavaScript, MongoDB, WebAuthn, React, Git, SignalFX, Splunk, JIRA, Confluence

Google LLC

Mountain View, CA, United States

Software Engineering Intern

May 2019 – August 2019

Member of the WebAssembly tools team, worked on [Emscripten](#), [LLVM](#), [Binaryen](#) and [v8](#).

- Ported LLVM's UndefinedBehaviorSanitizer, LeakSanitizer and AddressSanitizer to Emscripten and WebAssembly
- Implemented thread-local storage, stack overflow detector, and fixed bugs for Emscripten's WebAssembly backend

Technologies used: Python, C++, JavaScript, WebAssembly, LLVM, Git, Phabricator

DMOJ: Modern Online Judge ([DMOJ](#))

Toronto, ON, Canada

Co-founder, Main Developer

2014 – present

Founded [dmoj.ca](#), a free and open source online judge and programming contest platform, with over 110 000 users, 3800 problems, 4 million user-submitted programs, and 1700 contests, including 8 national Olympiads.

- Created a distributed code execution system capable of dynamically scaling to hundreds of nodes
- Implemented flexible sandboxes for Linux, FreeBSD and Windows, executing user-submitted code in over 60 languages

Technologies used: Python, Django, C, C++, MySQL, Git, HTML, SASS, JavaScript, Java, Assembly, and more...

Open Source Work

Looking Glass: Ultra low latency viewer for virtual machines with GPU passthrough.

[gnif/LookingGlass](#)

Contributed over 500 patches. Implemented much of Wayland support, DMABUF import, and damage tracking.

Technologies used: C, OpenGL, Linux kernel modules, X11, Wayland, Windows API, DXGI Desktop Duplication, NvFBC

Sample of Personal Projects

Punyverse: Solar system simulator written in Python using modern OpenGL.

[quantum5/punyverse](#)

2048: Clone of the popular 2048 game written in Python using PyGame.

[quantum5/2048](#)

correcthorsebatterystaple: Secure xkcd-style password generator.

[quantum5/correcthorsebatterystaple](#)

nginx-krbauth: nginx auth_request helper for Kerberos authentication.

[quantum5/nginx-krbauth](#)

win2xcursor: Tool to convert between Windows cursors (*.cur, *.ani) and X cursors.

[quantum5/win2xcursor](#)

More projects are available on [my projects page](#) and [GitHub profile](#).