Timothy Choi

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HK: Citizen | UK: BNO | AU: 500 / 485 | TW: TARC | DE: D-Visa

Education

Technical University of Munich	**Munich, Germany**
Informatics (Exchange)	*2024 Apr – Present*

The University of Adelaide		**Adelaide, Australia**
Bachelor of Mathematical and Computer Sciences	*GPA: 6.33/7*	*2022 Feb – Present*

Experience

Susquehanna International Group   **Sydney, Australia**
Incoming Software Development Intern   *C++, Connectivity team*   *2025 Nov – 2026 Feb*

Dassault Systèmes   **Munich, Germany**
Software Engineer (part-time)   *C++, mkmk, Jira, BitBucket, NG Jenkins, Python, Rust*   *2024 May – 2025 Mar*
- Refactor legacy C++ codebase using the pImpl paradigm, enhancing backward compatibility and reducing code size by over 50%
- Enhance internal debugging tools by designing a more intuitive graphical user interface in C++, improving usability and efficiency
- Parse specification files with Python to generate over 2000 comprehensive testcases to ensure there are no regressions
- Optimize development workflows with Rust, achieving up to a 90% reduction in task times such as compilations

Altacomm Technologies   **Adelaide, Australia**
Software Engineering Intern   *Rust, Actix, Astro, GitHub Actions*   *2024 Jan – 2024 Mar*
- Improved responsiveness and SEO of company landing page, consistently staying on the front page of Google search results
- Empower student communities and streamlining the logistical processes by building a full-stack contact and media release page

Global Technology Integrator   **Hong Kong**
System Engineer   *Batch, Windows AD, Project Management*   *2021 Aug – 2021 Nov*
- Leading a team of 4+ people, spearheaded the automation and parallelization of our tasks such as registry modification
- Helped resolve our staff shortage by reducing the manpower and time required by ~200%, and in so doing beating the deadline
- Mentored new staff, helping a non-technical audience understand the the basics of Windows AD and Batch scripting

Projects

Block Model Compression Algorithm   *C++, Algorithm Design, Linux*   `tinnamchoi.github.io/projects/bmca`
- Developed an octree-based algorithm in C++ to efficiently compress 3D data in $O(N \log_8 N)$, optimizing storage and processing
- Assisting teammates in the implementation of other algorithms such as run-length encoding and Lempel-Ziv compression.
- Employed agile methodologies for a group of 7 and enforced good Git practices such as using conventional commits

Binary Search on Color   *Algorithm Design, JavaScript*   `tinnamchoi.github.io/projects/bsoc`
- Devised an algorithm that allows people to search the modern color space of over 16 million colors in just 24 clicks
- Inspired by the lack of precision in existing tools, providing a better imagination to reality interface

Hare-Clark C++   *C++, CMake, Data Structures*   `tinnamchoi.github.io/projects/hcc`
- Implemented the Hare-Clark electoral system for the Computer Science Club committee to automate our election process
- Replaces the `hcvote` Python library as previous attempts to use it proved it unwieldy and faulty

Negative Base Converter   *Math, Number Theory, JavaScript*   `tinnamchoi.github.io/projects/nbc`
- Created a converter for negative base numeral systems by researching the mathematical principles behind it
- Motivated by the lack of existing tools, providing beginners with a better understanding of negative bases

Purchasing Power Parity Calculator   *JavaScript, CSS*   `tinnamchoi.github.io/projects/pppc`
- Purchasing power parity is a way to compare how much money can buy in different countries
- Having multiple countries which I call home, this helps me get a better idea of my finances

Volunteering

Adelaide Competitive Programming Club   **Adelaide, Australia**
Author   *C++, Python*   *2025 Feb – Present*
- Creating and testing competitive programming problems for the Adelaide University Competitive Programming league (`aucpl.com`)
- An initiative by the club (`acpc.io`) to introduce competitive programming to university students with workshops and contests
- Prize pool of $2,400 sponsored by Jane Street, Citadel Securities, and IMC

Skills & Achievements

Skills & Technologies

Daily drivers: C++, Linux, Git, Just, Typst, GitHub   **Familiar:** Python, JavaScript, Atlassian suite, Bash, Rust, LaTeX, HTML, CSS

Human languages: English (native), Cantonese (native), Mandarin (C1), German (A2)

Prizes & Achievements

Subject prize: Information and Communication Technology 2021   *Achiever of the best results amongst peers*

University of Adelaide Scholarship: 30% Global Citizens Scholarship   *Best possible scholarship for international students*