

Bernard Teo Zhi Yi

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SKILLS AND ABILITIES

- Proficient in C++ (including modern C++), C, C#, Java; some experience with JavaScript, Swift
- Strong algorithmic problem solving skills
- Familiar with multi-threaded programming and atomic operations, including lock-free and wait-free data structure design
- Have experience with Visual Studio and Git for multiple projects

INTERESTS

- Algorithmic problem solving, data structures and algorithms, parallel programming, zero-cost abstractions, modern C++

NOTABLE COMPETITIONS

ACM-ICPC ASIA REGIONALS

- Ranked 5th at ACM-ICPC Asia Jakarta On-Site Regional Contest 2017

INTERNATIONAL OLYMPIAD IN INFORMATICS (IOI)

- Bronze Medal in 2013
- Participation in 2012

GOOGLE CODE JAM

- 295th globally in 2018
- 834th globally in 2017
- 166th globally in 2016
- 952th globally in 2015

DISTRIBUTED CODE JAM

- 155th globally in 2017
- 79th globally in 2016

SINGAPORE MATHEMATICAL OLYMPIAD (SMO)

- Silver Award for Open Category in 2013 and 2014

NOTABLE PROJECTS

CIRCUIT SANDBOX

GitHub repository: <https://github.com/btzy/circuit-sandbox>

Summary poster: <https://btzy.github.io/circuit-sandbox-poster.pdf>

May-August 2018, NUS Independent Software Development Project

- Circuit Sandbox is an open-source desktop cross-platform (Windows, Mac, Linux) sandbox simulation game built with SDL2.0 and designed to be fast and efficient
- Consists of over 12000 lines of C++ code utilizing various C++11/14/17 features
- Implement separate simulation, rendering, and file I/O threads that almost always communicate in a wait-free manner
- Implement generation of circuit graph, and other performance optimizations

SELECTED OTHER PROJECTS

- celestia.io — 2015-2017, Personal Project — Online multiplayer game, server written in multi-threaded C++11 using WebSocket++
- wasm-codegen — March 2017, Personal Project — JavaScript library for writing WebAssembly bytecode

OTHER EXPERIENCE

NATIONAL OLYMPIAD IN INFORMATICS (NOI) SCIENTIFIC COMMITTEE

Jan-Mar 2017

- Design and prepare task statements, and ensure quality control of the tasks for the competition



EDUCATION

2017-present

National University of Singapore
BComp (Hons) in Computer Science
BSc (Hons) in Applied Mathematics
Double Degree Programme

Current CAP (as of June 2018):
4.96 out of 5

Notable modules taken:

- CS2103T Software Engineering
- CS2100 Computer Organization
- CS2105 Introduction to Computer Networks
- CS2106 Introduction to Operating Systems
- CS3210 Parallel Computing
- CS3230 Design and Analysis of Algorithms
- CS3233 Competitive Programming
- MA2101 Linear Algebra II
- MA2104 Multivariable Calculus
- MA3218 Applied Algebra

2009-2014

Hwa Chong Institution
Science and Mathematics Talent
Programme

SCHOLARSHIP

NUS Merit Scholarship recipient

TEACHING

Teaching assistant for
CS2030 Programming Methodology II:

- Spring 2018
(teacher score of 4.7 out of 5)
- Fall 2018
(current semester)

LINKS

- GitHub: [@btzy](https://github.com/btzy)