Bernard Teo Zhi Yi

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Skills and Abilities

- Proficient in (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 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 1st at ACM-ICPC Asia Yangon On-Site Regional Contest 2018
- Ranked 7th at ACM-ICPC Asia Singapore On-Site Regional Contest 2018
- 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 December 2018):
  5.00 out of 5 (BComp)
  4.94 out of 5 (BSc)

Notable modules taken:

- CS2103T Software Engineering
- CS2100 Computer Organization
- CS2105 Intro. to Computer Networks
- CS2106 Intro. to Operating Systems
- CS3210 Parallel Computing
- CS3230 Design and Analysis of Algorithms
- CS3233 Competitive Programming
- CS4231 Parallel and Distributed Algorithms
- MA2101 Linear Algebra II
- MA2104 Multivariable Calculus
- MA2108S Mathematical Analysis I (S)
- 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 (score: 4.7 out of 5)
- Fall 2018 (score: 4.8, 4.6 out of 5)

Links

- GitHub: @btzy