

# Tudor Brindus

University of Toronto  
Hon. Bachelor of Computer Science, 2020  
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## Professional Experience

### Google

Software Engineering Intern, Chrome OS Team

Mountain View, CA  
May 2018 - August 2018

- Implemented secure device setup automation using asymmetric crypto backed by Trusted Platform Module support, saving organization admins weeks when resetting thousands of devices every year
- Obtained secure user acknowledgment in the Chrome OS recovery installer using a mix of listening on event device interfaces and GPIO polling, using only 20KB of a 300KB budget
- Developed robust runtime detection of device form-factor based on device capabilities (e.g. keyboard)
- Worked towards switching auto-update tooling to a newer protocol version using 5-10% less bandwidth
- **Technologies used:** C, C++, Python, Bash, protobuf, OpenSSL, Linux kernel, Gentoo/Portage, git/Gerrit

### Ivy Global

Software Engineering Intern

Toronto, ON  
September 2016 - May 2018

- Implemented a ground-up rewrite and redesign of the company's main website, [ivyglobal.com](http://ivyglobal.com)
- Automated the deployment of version control branches to SSL-enabled, authenticated subdomains
- Migrated over 50 production sites to Microsoft Azure with zero downtime, including a development VPN
- Screened, interviewed, assessed, and provided on-going guidance for new software engineering interns
- **Technologies used:** C#, ASP.NET MVC Razor, TSQL, LINQ, HTML, CSS/SASS, JavaScript/Node.js, Python

### DMOJ: Modern Online Judge

Co-founder, Developer

Toronto, ON  
2014 - **present**

- Founded the DMOJ ([dmoj.ca](http://dmoj.ca)), an open-source platform for running programming contests, which has hosted over 150 competitions (including three national olympiads)
- Created a distributed code execution system capable of dynamically scaling to hundreds of nodes
- Implemented a sandbox for over 60 languages using a Linux syscall-based sandboxing approach
- **Technologies used:** Python, Django, MySQL, HTML/Jade, CSS/SASS, JavaScript/Node.js, Java, C, C++

## Other Experience

*More at [tbrindus.ca/projects](http://tbrindus.ca/projects)*

Developed and contributed to dozens of open-source projects on my Github profile, [Xyene](#)

### **Emulator.NES**, a cross-platform **C# Nintendo Entertainment System and MOS 6502 CPU emulator**

- Supports 90% of all games ever published by emulating over a dozen proprietary hardware extensions
- Focuses on code clarity by abstracting hardware components, without sacrificing performance

### **Nitrous Emulator**, a high-performance **Java Gameboy Color and Zilog Z80 CPU emulator**

- Implements fully timing-accurate Z80 instruction set and audio processor emulation
- Supports native rendering output via OpenGL, Direct3D, X, and GDI

## Miscellaneous

- Teaching assistant for the University of Toronto's CSC209 "Systems Programming" offering
- Member of the University of Toronto's ACM-ICPC team for the 2016, 2017, and 2018 seasons
- Hack the North 2018 finalist (top 12 of 242 teams), developing a biometric 3-factor authentication device
- 1<sup>st</sup> place team out of 400, ECOO 2015 and ECOO 2016 programming contests