

# Guanzhong Chen

University of Waterloo, Software Engineering, 2B

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[github.com/quantum5](https://github.com/quantum5)

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## Accomplishments

- Software Engineering First in Class Scholarship
- Achieved Dean's Honour List every term at University of Waterloo
- Silver medalist in 2015 and 2016 Canadian Computing Olympiad
  - Top 10 in Canada, from over 3000 participants

## Experiences

### Wish (January 2018 – April 2018)

- E-commerce ([wish.com](http://wish.com)); worked on merchant-side website
- Improved SMS-based 2FA usability sufficiently for mandatory usage
- Discovered and fixed multiple security bugs
- Implemented several new front-end pages for critical workflows: passed usability tests and currently in production

### Akindi Inc. (May 2017 – August 2017)

- Toronto-based company specialized in academic testing solutions
- Created a system to detect questions and answer choices from the PDF version of an academic assessment in Python/Java/JavaScript
  - Allows answer keys to be created by taking the test online
  - Can create many versions of a test by shuffling choices
- Extensive use of SVG to implement live previews and interactive interfaces along with d3.js and Angular
- Implemented flexible permission system to control access
- Added security notifications and account protection mechanisms

### DMOJ: Modern Online Judge (March 2014 – present)

- [dmoj.ca](http://dmoj.ca), source available at [github.com/DMOJ](https://github.com/DMOJ)
- Online judging system capable of automated grading of programs in over 50 languages, from Python and C to Rust and Dart
  - Python/Django and Node.js frontend, Python backend, MySQL
- Over 20 000 lines of code and 5 years of active development
- 10 000+ users, hosted national Olympiad for Tunisia and Morocco
- Created low overhead sandbox for Linux/Windows on x86/x64/ARM
- Managed network through LDAP directory with single sign on
- Created scripts to automatically provision new servers for scaling
- Created battle-tested tools to automatically defend against DDoS

## Main Languages

Python, C, C++, Java, JavaScript

## Other Languages

C#, Perl, Scala, Ruby, Unix shell, x86/amd64 assembly

## Web Development

Django, jQuery, MySQL, Node.js, RabbitMQ, gevent, SVG, Pug/Jade, Jekyll, HTML, CSS, MongoDB, Tornado, Angular 1, d3.js, SASS, uWSGI, nginx

## Operating Systems

Familiar with Windows and POSIX system APIs

## Other Skills

OpenGL  
Git, SVN  
PDF manipulation  
DDoS mitigation  
Server maintenance  
Application deployment

## Interests & Hobbies

Web Security  
Music  
Foreign languages

More projects available on <https://guanzhong.ca/projects/> and [GitHub](https://github.com)