Clive A. Chan

Engineering student looking for a challenge.

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EXPERIENCE

Waterloo Hyperloop Team *Software Systems Lead* Jan 2017 - present

- Canada's only full SpaceX Hyperloop Pod Competition team, with over 60 members. First team in the world to achieve pneumatic levitation. Champion for the development of a full-scale Hyperloop across Canada.
- Lead ~10 team members, hold weekly meetings, coordinate with other subteams, and orient new recruits.
- Designed a completely new highly reliable comms system over WebSockets and UART, and a modular onboard system based on Arduino for easy prototyping.
- Also, as Web Lead, maintain the team's online presence and help automate administrative functions.
- During Summer 2017, performed all of these roles remotely while in New York.

Bloomberg LP *Software Engineering Intern* May 2017 - present

- Explored the use of machine learning (specifically, topic modeling) in Python to analyze a large financial document corpus for categorization and search hinting.
- Having finished early, now working on refactoring parts of a large backend C++ codebase.

SkillFlow *Backend Software Engineer* Jul 2016 - Mar 2017

- Helped develop highly scalable NodeJS stack, with 1000+ peak users.
- Built Enterprise edition of core product, refactored and documented much of the code, published 3 open-source modules, and wrote a battery of unit tests.

Freelance Web Developer Jun 2014 - always

- Wrote many complex webapps and static websites, including WashU Chemistry Tournament Scoring System, Vocative Chat Platform, Science Bowl Question Database, LexSciBowl, CalcBee, LexHack.
- Cofounded VitaeDev, a student-run team coding free websites for local nonprofits.

PROJECTS

Amazon EC2 Server Suite

- Server maintenance tools using NodeJS and Bash, currently used in production on seven different web apps.
- Includes a reverse proxy integrating CloudFlare HTTPS, and a Facebook Messenger bot to track server events.

C++ Neural Networks

- Neural network and matrix math library written in C++, with optimizations for vectorization and parallelism.
- Implemented backpropagation, genetic algorithms, and a predator-prey coevolution simulation.

Lexington High School Math Team Website

- Refactored a 30k+ line PHP codebase, abstracting common functionality, and securing against cyberattacks.
- Used to coordinate the Lexington Math Tournament event, one of New England's largest student-run math competitions.

TECHNICAL SKILLS

Native speaker: C++, NodeJS (ES6), Python, HTML5, CSS3, JavaScript, Git

Conversationally fluent: C, Java, PHP, Linux, Matlab, SQL, jQuery, Bash

Curious tourist: AWS, NoSQL, Docker, Travis CI, React, R, TensorFlow, Keras, Go

AWARDS

1st Place @ McHacks 2017 *Signbot*

- Two-handed robot translating bidirectionally between English speech and ASL.

Best Hardware Hack @ ECHacks 2016 *Sandwich-O-Matic*

- Voice-controlled sandwich maker, featured on Hackaday, Arduino, and Major League Hacking.

2nd Place @ Bloomberg Code B 2017 *Team DuckDuckGoose*

- Real-time Python AI for a large multiplayer Asteroids-like game.

Silver Medalist @ US Physics Olympiad

4th Place Team @ National Science Bowl

- Physics/Math specialist and co-captain of one of the most awarded teams in the nation.

Platinum Division @ US Computing Olympiad

Score of 20 @ Putnam Mathematical Competition (median score was 1)

1st Place @ Google Games Waterloo 2017 *Team fcf21600f...370*

LEADERSHIP

Waterloo Tech Talks *founder*

- Ran a weekly series of student-delivered tech talks, and hosted a co-op info panel with 50+ students in attendance.

LexHack *co-founder & co-director 2x*

- First high school-run hackathon in Massachusetts, attracting 80+ participants and $3k+ in sponsorships every year.

OpenSource MakerSpace *cofounder*

- Won $5000 town education grant, cofounding a school-wide engineering lab providing free tools, materials, mentors, and teacher training.

LexSciBowl *founder & co-director 2x*

Lexington Math Tournament *director 3x*

EDUCATION

University of Waterloo, Bachelor of Software Engineering, Co-op

- Grade Average 90.41%
- Carl A. Pollock and President's Scholarships

Harvard Extension School *Multivariable Calculus* and *Linear Algebra (2013-2014)*

MOOC coursework including Stanford's *Machine Learning*, Princeton's *Algorithms*