CLIVE A. CHAN

University of Waterloo Software Engineering

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Founder of a hackathon, a startup, and multiple tech outreach events. **Silicon Valley startup** programmer. **Hyperloop** software lead.

TECHNICAL SKILLS

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

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

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

AWARDS

US Computing Olympiad *Platinum Division*

US Math Olympiad *5x AIME qualifier, USAJMO qualifier*

US Physics Olympiad *Silver Medalist*

LEADERSHIP

Waterloo Tech Talks ☻ *founder*
- Ongoing student-delivered tech talk series.
- Hosted a co-op information panel with 50+ students in attendance.

LexHack ☻ *co-founder & co-director 2x*
- First high school-run hackathon in MA.
- Attracts 80+ participants and $3k+ in sponsorships every year.

OpenSource MakerSpace ☻ *cofounder*
- Won $5000 grant, cofounding a school-wide engineering lab providing free materials, tools, mentors, and teacher training.

LexSciBowl ☻ *founder & co-director 2x*

Lexington Math Tournament ☻ *director 3x*

EDUCATION

University of Waterloo, Bachelor of Software Engineering, Co-op
Fall 2016 Average: **95.82% (4.00 GPA)**

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

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

EXPERIENCE

SkillFlow ☻ *backend software engineer*   **Jul 2016 – present**
- Developed highly scalable NodeJS stack, with 1000+ peak users.
- Implemented Enterprise edition of the product and refactored much of the core codebase, creating and publishing 3 open-source modules.
- Gained familiarity with modular software design, SQL and NoSQL databases, documentation and unit testing.

VitaeDev ☻ *co-founder*   **Apr 2016 – present**
- Led a team of students coding websites for Lexington organizations.
- Mentored the team in LAMP backend stack and web design principles.

Freelance Work ☻ *web developer*   **Jun 2014 – present**
- Wrote many complex webapps and static websites, including LexSciBowl, CalcBee, Science Bowl, LexHack, and VitaeDev.

STUDENT TEAMS

Waterloo Hyperloop Team ☻ *Software and Systems Lead*
- Canada's only qualifying SpaceX Hyperloop Competition team, with 100+ members; first in the world to achieve pneumatic levitation.
- Overseeing all Software and Systems subteams, in total ~15 people.
- Writing a WebSocket-UDP-UART communication pipeline in Go and C, and designing optical position detection system functional at Mach 1.

Lexington FTC Robotics Team ☻ *Research and Development*
- Four-time World Championship qualifier; led software R&D projects, including PID and sonar localization for autonomous control.

PROJECTS

Amazon EC2 Server Suite ○
- Automatic server maintenance tools using NodeJS and Bash.
- Includes a reverse proxy with CloudFlare HTTPS, seven production webservers, and a Facebook Messenger bot to notify of server events.

Signbot (1st Place @ McHacks 2016) ○
- Built a two-handed robot that translates between speech and ASL, using LeapMotion, Nuance, and our own sign language dictionary.
- Designed interfaces between the many software components to ensure that multiple parts could be coded in parallel.

C++ Neural Networks ○
- Neural network and matrix math library written from scratch in C++.
- Implemented and tested backpropagation, and ran a genetic algorithm simulation of coevolving predator-prey behaviors.

Sandwich-o-matic (Best Hardware Hack @ ECHacks 2016) ○
- Wrote the NodeJS server backend for this IoT voice-controlled sandwich maker, with streaming speech recognition to Google APIs.
- Featured on Hackaday, Arduino Blog, MLH, and more.

Lexington High School Math Team Website ○
- Refactored a 30k+ line PHP codebase, abstracting common libraries, automating the development cycle, and securing SQL queries.