



## EXPERIENCE

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### **Bloomberg LP** *Software Engineering Intern*

May 2017 - Aug 2017

*Bloomberg LP, creator of the ubiquitous Bloomberg Terminal, is the largest financial data company in the world.*

- Developed a set of NLP techniques in Python (LDA and LSA topic models using gensim, scikit-learn, jupyter) to analyze a large document corpus, and wrote a NodeJS webapp to crowdsource manual model evaluation internally.
- Rewrote a Python search service in C++, refactored several different OOP patterns, and documented and tested the large existing C++ codebase.
- **Featured on the Bloomberg Careers Blog.**

### **Waterloo Hyperloop Team** *Technical Lead*

Sep 2017 - present

*Software Systems Lead and Web Lead*

Jan 2017 - Sep 2017

*Waterloop represents Canada in SpaceX's Hyperloop Pod Competition, developing the technology for a supersonic train spanning the continent.*

- Spearheading the effort to design an all-new Hyperloop Competition 3 pod with a growing team of 50+ student engineers under a freshly developed governance structure. Initiating engineering design, recruitment, mentorship, web development, sponsor outreach, and more.
- As software lead, led ~5 team members to design, implement, and test Waterloo's first-ever fully operational control system, including a WebSockets/UART telemetry pipeline, C++ state machine, and React dashboard. Code on **GitHub**.
- As web lead, maintained website and email, automated administrative functions, and mentored new webdevs.
- Earned 15th place out of over 150 teams globally at the August 2017 competition.

### **SkillFlow** *Backend Software Engineer*

Jul 2016 - Mar 2017

*SkillFlow is a chatbot startup connecting Slack users into a network of skilled mentors that can answer each other's questions.*

- Helped develop a highly scalable NodeJS stack, with 1000+ peak users.
- Refactored and documented much of the code, published **3 open-source modules**, and wrote a battery of unit tests.

## PROJECTS

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### **Web Development Projects**

Jun 2014 - present

- Wrote many webapps and websites in HTML/CSS/JS, NodeJS, and PHP. **WashU Chemistry Tournament Scoring**, **Vocative Chat Platform**, **Math Club Website & Tournament Platform**, **Science Bowl Database**, **LexSciBowl**.
- Cofounded **VitaeDev**, a student-run startup creating websites for local businesses and nonprofits.

### **Amazon EC2 Server Suite**

Feb 2016 - present

- Server instrumentation and maintenance tools mostly in NodeJS and Bash, used in production on  $\geq 7$  websites.
- Includes a **Facebook Messenger bot** to track server events, and a **reverse proxy** integrating CloudFlare HTTPS.

### **C++ Neural Networks**

Feb 2015 - present

- 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.

### **1st Place @ McHacks 2017 Signbot**

Jan 2017

- Two-handed robot that understands both English speech and ASL, featured on **Arduino**, **Hackster**, and **Makery**.

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

Nov 2016

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

### **2nd Place @ Bloomberg Code B 2017**

Mar 2017

- Real-time Python AI for a large multiplayer Space Invaders-like game; doubled the scores of nearly all other teams.

## EDUCATION

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### **University of Waterloo Software Engineering Class of 2021** *91.52% average $\approx$ 3.93 GPA*

- Overloading courses with the intention of earning the Statistics Joint Major.

## AWARDS

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<b>Score of 20</b> <i>Putnam Mathematical Competition</i> (median score = 1)	Apr 2017
<b>Platinum Division</b> <i>US Computing Olympiad</i>	Jan 2016
<b>Silver Medalist</b> <i>US Physics Olympiad</i>	Mar 2016
<b>4th Place</b> <i>National Science Bowl</i>	May 2016
<b>1st Place</b> <i>Google Games Waterloo</i>	Apr 2017

## SKILLS & TOOLS

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

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

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

## LEADERSHIP

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<b>Waterloo Tech Talks</b> <i>founder</i>	Oct 2016 - Jan 2017
• Ran a weekly series of student-delivered tech talks, and hosted a <b>co-op info panel</b> with 50+ students in attendance.	
<b>LexHack</b> <i>co-founder &amp; co-director</i>	Sep 2014-2016
• First high school-run hackathon in Massachusetts, attracting 80+ participants and \$3k+ in sponsorships every year.	
<b>OpenSource MakerSpace</b> <i>cofounder</i>	Aug 2015 - Jun 2016
• Applied for and won a \$5000 town education grant to cofound a school-wide student-run engineering lab providing free tools, materials, mentors, and teacher training.	
<b>LexSciBowl</b> <i>founder &amp; co-director</i>	Apr 2015-2016
• Middle school science competition based on National Science Bowl; first student-run event of its kind.	
<b>Lexington Math Tournament</b> <i>director</i>	May 2015-2016
• One of New England's largest student-run math competition events, with over 150 participants annually.	