

# Alex Aubuchon

*Be a person others look for to solve problems, and make waves.*

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INFORMATION Mail: alex@alxe.me

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EDUCATION **Northeastern University**  
*BS in Computer Science and Physics*

Boston, MA  
*September 2015 - Expected May 2019*

Coursework: Advanced Algorithms, Theory of Comp, NLP, Quantum Mechanics, Electronics  
GPA: 3.8/4.0

WORK **CERN**  
EXPERIENCE *Research Assistant, CMS Experiment*

Geneva, CH  
*January 2018 - August 2018*

Performed research and software development for the Endcap Muon Track Finder (EMTF):

- Developed the AutoDQM system – a platform to accelerate data quality monitoring by automatically flagging anomalous system metrics via comparison.
- Analyzed detector performance of the Endcap Muon TrackFinder and extrapolated results to account for the High-Luminosity Large Hadron Collider upgrade.

**Draper Laboratories**  
*Software Engineer, Machine Intelligence Group*

Cambridge, MA  
*January 2017 - August 2017*

Involved in three projects across multiple disciplines including prosthetics, electronics, and ML:

- Implemented the software interface in C# to a neuro-stimulation device as part of the DARPA HAPTIX program. Designed the next generation of the device using wirelessly controlled implants by working closely with the hardware and firmware teams.
- Performed research + experimentation into the novel uses of RF sensors on the spurious emissions of electronic devices. Used Arduino/C++ for hardware and Python for testing.
- Integrated new features into a SVM to use human biometrics to non-invasively detect malintent.

**MIT Media Lab**  
*Assistant Researcher, Changing Places Lab*

Cambridge, MA  
*July 2016 - Present*

Developed the software/ML oriented parts of the CityMatrix project:

- Designed ML models for quickly predicting the traffic and solar power potential of a model city.
- Implemented searching over possible changes to the city for a mock intelligence to offer suggestions to the user to optimize these metrics (and others).
- Developed a Unity/C# application for real-time visualization of the model city.

PROJECTS + **HackMIT: PacTravel**  
COMPETITIONS

*September 2017*

Led the development of a webapp in Typescript where users play PacMan on Google Maps while the places they visit are logged into a data-rich itinerary for use afterwards in real life.

**HackTheMachine - 2nd Place**

*September 2017*

Won second place in a data science hackathon to use Navy ship sensors to improve readiness. Used correlations and PCA in Python to improve human readability of the high dimensional stream.

**Google IO Firebass**

*July 2016, May 2017*

Won a global ARG competition to be the first to chase down the Firebase Firebass by solving puzzles as it fled through the web. Received tickets to Google IO 2017, attended May.

COMPUTER **Languages:** *Lots-* C#; Python; Java; *Some-* C/C++; Racket; Matlab; Verilog; *Little-* Julia  
SKILLS **WebDev:** REST/Websocket APIs; TypeScript; AngularJS; NodeJS; HTML/CSS; Three.js  
**Tools:** Unity; Mathematica; Photoshop; Blender (CAD); Microsoft Office  
**Misc:** Git; (Arch)Linux; Vim

INTERESTS Gaming; Rock Climbing; Transhumanism; CS/Physics Theory; Computer Design; Electronics