

# Cole Killian

SOFTWARE ARCHITECT · FULLSTACK DEVELOPER

Cambridge, MA

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## Software Skills

**Programming** Javascript (React, Material-UI, Express), Python (Django, Locust), Bash, ~~Perl~~X, Java, C++, Lua  
**Tools/Services** Google Cloud Platform, Google Cloud Computing, Firebase, Firestore, Docker, Kubernetes, Terraform, Stripe

## Work Experience

### Harvard High Performance Computing

Cambridge, MA

SOFTWARE ENGINEER INTERN

Jun. 2020 - September. 2020

- Refactored the user account creation pipeline, increasing processing speed by **15** times (Python, Bash). View [final presentation](#).
- Coded performance tests which exposed high load averages on web server hosts. Identified a way to reduce it by **70%** (Locust).
- Built a dashboard that enables non technical users to understand the complex Harvard super computer status (React, Passenger, Node).

### Artifai

Cambridge, MA

CO-FOUNDER & SOFTWARE ENGINEER

Mar. 2020 - Present

- Making neural style technology available to non technical users, while streamlining the process for users to purchase their art on a poster/canvas.
- Architected the backend for performing neural-style (Google Cloud Computing and Firebase Functions).
- Developed the user authentication and social databases (Firebase, Firestore, and Node.js).
- Built the user interface. Visit the business at <https://artif.ai>. To date there have been over **2500** artifaications (React, Webflow).

### NeuroTech

Montreal, QC

SOFTWARE ENGINEER

Feb. 2020 - Present

- Working with Neurotech to build a non-invasive forearm band that can predict which keys a user is typing without the need for a keyboard. Applications include augmented reality.
- Constructed a dashboard for visualizing realtime ML model predictions and signal data (React).
- Developed a pipeline for interfacing between ML model predictions and frontend applications (SocketIO, Python).

### Epigenosys

Montreal, QC

SOFTWARE ENGINEER

Sept. 2019 - Dec. 2019

- Engineered a machine learning model for predicting a human's age based on the methylation data extracted from their blood sample (Keras).
- Achieved **100%** accuracy  $\pm 10$  years and **> 90%** accuracy  $\pm 5$  years.
- Deployed a [web interface](#) that enables clients to interact with the machine learning model. Users can tune each of the 25 features and see how predicted age changes (Django).
- Presented research at McGill Science and Synergy. Made the front page of Hacker News with over **100** upvotes.

### Harvard High Performance Computing

Cambridge, MA

SOFTWARE ENGINEER INTERN

May. 2019 - August. 2019

- Deployed a web interface that enables **hundreds** of clients to view, request, or terminate their storage allocations (Django).
- Designed a mysql database model for tracking storage allocations and storage transactions (MySQL).

### Aspine

Cambridge, MA

CO-FOUNDER & SOFTWARE ENGINEER

Jan. 2019, June. 2019

- Architected Aspine, an Open Source project that revolutionizes the user interface for Aspen, a grade checking service, with many new features and improved aesthetics (Node, HTML request mimicking). [Github](#) — <https://Aspine.us>. Aspine is now preferred by over **500 students**.
- Reverse engineered an API for extracting student information from Aspen using HTML request mimicking (Node.js).

## Honors & Awards

2020 **McGill Faculty of Science Scholarship**, oijoi  
2019 **McGill Major Renewable Entrance Scholarship**,  
2018 **Harvard Book Award**,

Montreal, QC

Montreal, QC

Bethesda, MD

## Education

### McGill (CGPA 3.97)

Montreal, QC

B.S. IN HONORS COMPUTER SCIENCE AND MATH. LIST OF [COURSEWORK](#)

Aug. 2019 - Apr. 2022