

# Aman Bhargava

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## Education

**University of Toronto: BAsC Engineering Science**

GPA: 3.80/4

Relevant Coursework: Linear Algebra, Algorithms and Data-structures, Digital and Computer Systems, Calculus I-III + Vector Calculus

## Skills

**Programming:** Python, C, JavaScript, MATLAB, Arduino, Java, PHP, HTML5/CSS3, Processing3

**Software:** PyTorch, Fusion360, NumPy, SciKit Learn, Vim, Jupyter, Git, OpenCV, Node.js, Angular.js/Angular 8, Firebase.

## Experience

Oct. 2019–Now **Research Assistant** @ Mann Lab

Assist with **microprocessor programming**, live **EEG analysis** and feedback projects, and scripting. Currently focusing on investigating the uses for **Sequential Wave Imprinting Technology** (SWIM) and **Muse EEG**. Tooling is primarily **Python** and **C**.

May–Aug. 2019 **Technical Intern** @ Venture13

**Conceptualized** and **developed full-stack web applications** using **Angular** and **Firebase** incorporating Google Calendar, Maps, Directions API's for **TheWeekendRoute**, **Venture13**, and the **Cobourg Police Force**. Created robotics software suite for **CrossWing Solutions** using **OpenCV**, **Python**, and **JavaScript**. Assisted with **microprocessor programming**, implementing low power machine learning and signal processing with **Nordic Semiconductor's** SDK for Amy Arthur's **CLAXON** project.

July–Aug. 2017 **Technical Intern** @ [Fluent.AI](#)

Conceptualized and developed **Python** scripts to **automate** the **data pre-processing** pipeline for training of **natural language processing algorithms**. Researched and reported on competitor companies.

## Projects

**CareTrack: Co-Founder & CEO** - April 2019-Present - [caretrack.io/](http://caretrack.io/)

- Designed and implemented a **full-stack web-based** medical data entry & **analytics** platform for assisted living facilities.
- Leverages modern UI, **data visualization**, and **predictive algorithms** to improve patient outcomes and nurse, doctor, and administrator productivity.
- Currently in **private beta** for data collection. Incorporated in **July 2019**.
- Utilizes **Angular**, **Firebase**, **Chart.js**, **Python**/Flask.

**Play the Orchestra: Team Lead** - MakeUofT 2019 - [github.com/amanb2000/PLAY THE ORCHESTRA](https://github.com/amanb2000/PLAY_THE_ORCHESTRA)

- Created a system of networked **mobile phones** and **Raspberry Pi's** to enable users to play a human orchestra in **real time** via a MIDI keyboard.
- Included a **chord analytics** and **prediction** module that recognized chords → utilized a Neural Net to predict the next chord in the sequence.
- Awards:** Top 3 Teams, Best Documentation.
- Utilizes **Node.js**, **Socket.IO**, **Azure Cloud**.

**AP Capstone: Predicting Interest with EEG** - Oct. 2017-April 2019 - [archive.org/details/Draft10BhargavaResearchPaper](https://archive.org/details/Draft10BhargavaResearchPaper)

- Conducted independent **machine learning/neuroscience research** on predicting student interest level based on EEG scan data.
- Successfully trained a collection of **classifiers** able to determine the interest level of students with **~70% accuracy**.
- Awards:** 5/5 in AP Research, 99th percentile of all AP Research projects (all possible marks attained on paper & oral defense)
- Utilizes **EMOTIV** EEG headset, pre-processing in **MATLAB/Octave**, **Azure Machine Learning**.

I also love making **music**, **rock climbing**, and **photography**! Check out my [Spotify](#) and [500px](#)!