

# Samarth Kumar

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## EDUCATION

### McMaster University - B.Eng.BME (Co-op)

Sept 2019 - Present | Hamilton, ON

Level II - Software and Biomedical Engineering

cGPA: 3.98 / 4.0

- Received President's Award for achieving 95%+ average in high school
- Received Provost's Honour Roll for achieving a perfect GPA in second year

## WORK EXPERIENCE

### Undergraduate Research Assistant

Jun 2020 - Nov 2020

*Faculty of Engineering - McMaster University*

- Researched literature and designed software to co-author a paper on a novel COVID-19 monitoring device
- Developed **MATLAB** algorithms to analyze sensor data from the body to extract parameters such as cuffless blood pressure, saturated blood oxygen, coughing data, and lung function

## VOLUNTEER EXPERIENCE

### Burlington Public Library

Feb 2015 - Dec 2017

- Mentored over 100 kids aged 6-12 in the STEAM Program, aiding them in weekly science-related activities
- Inspired passion for technology in youth by incorporating and attending events such as coding through art and 3-D printing tutorials as a member of the Teen Technology Board

## EXTRACURRICULAR ACTIVITIES

### Science Olympics

Sept 2016 - Jun 2018

- Developed and inspired creativity and problem-solving by designing an event in which 200 middle-school students competed, traversing a laser maze using sets of mirrors

### VEX Robotics

Oct 2017 - Feb 2018

- Improved proficiency in C/C++, and **hardware** ability through designing a robot and competing in Toronto

## PROJECTS

### Custom Hip Replacement Prototype

Nov - Dec 2019

- Analyzed patient x-rays to create a prototype for a total hip replacement, modeled using **Autodesk Inventor**, and demonstrated in a poster showcase
- Performed mathematical stress-strain analysis using **Python**

### Blackjack

Oct 2018 - Feb 2019

- Created a functional object-oriented blackjack game using **Java**, with a GUI and realistic dealer AI

### Smart Streetlight Prototype

Jan - Jun 2016

- Developed an energy efficient streetlight prototype in a team using **Arduino** (C/C++) that provided motion sensing capability and real-time air quality streaming to an **Excel** spreadsheet
- Presented to representatives of Toronto City Hall, who expressed financial interest in the project

## AWARDS

- Deans' Honour List
- President's Award
- Computer Science Award (High School)
- Canadian Computing Competition (Top 25%)
  - Placed 92<sup>nd</sup> percentile
- UWaterloo Senior Math Contest (Top 25%)
  - Placed 87<sup>th</sup> percentile

Apr 2020

Sept 2019

Jun 2019

Feb 2019

Nov 2017

## SKILLS

Proficient: **Java**, **Python**, **MATLAB**,  
**Autodesk Inventor**, **MS Office**

Familiar: **C++**, **Bash**, **Assembly**, **HTML/CSS**