

# Amir Tootooni

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## SKILLS

### PROGRAMMING

Over 5000 lines:

Python • JavaScript • Java  
C • Verilog •  $\LaTeX$

Over 1000 lines:

C++ • Matlab • R • Assembly

Frameworks:

Flask • Jekyll • Altera Monitor

Tools:

Git • ANTLR • Gurobi  
NuSMV • MCMAS • Travis CI

## EDUCATION

### UNIVERSITY OF BRITISH COLUMBIA

MSC IN COMPUTER SCIENCE

Dec 2022 | Vancouver, BC

### UNIVERSITY OF BRITISH COLUMBIA

BASC IN COMPUTER ENGINEERING

May 2020 | Vancouver, BC

4.33 / 4.33 GPA

Relevant Courses:

Algorithms and Data Structures  
Computer Vision  
Digital Systems Design  
Formal Verification  
Intelligent Systems  
Machine Learning  
Operating Systems  
Software Engineering

## LINKS

tootooni.ca  
Linkedin  
GitHub  
Facebook

## EXTRACURRICULAR

### BRAZILIAN JIU-JITSU

STUDENT SINCE NOV 2018

Vancouver, BC

Before the pandemic, had the privilege of training under Marcus Soares.

## PROJECTS

### PARASEEK | MEDICAL HARDWARE

Sep 2019 – Jun 2020

Python, OpenCV, Raspberry Pi

- Worked in a multidisciplinary group of electrical and biomedical engineers
- Designed, developed, and tested an economical medical device that uses the inherent autofluorescence of parathyroid glands to identify them during thyroidectomy
- Constructed the image processing software that ran on a Raspberry Pi and advised on the hardware design
- ParaSeek was successful in 6 separate ex-vivo (and 3 separate in-vivo) tests while costing less than \$1000
- Results are published in the American Journal of Surgery. Article at <https://doi.org/10.1016/j.amjsurg.2021.03.005>

### SMARTENDER | REACT NATIVE APPLICATION + HARDWARE

Jan 2019 – Apr 2019

JavaScript, Express, Python, Raspberry Pi, AWS

- An automated bartending machine controlled by a mobile application aimed to reduce lines at clubs and bars
- Utilizes BarCoin, a blockchain-based cryptocurrency, as a secure payment system. Complete documentation can be found at <https://bit.ly/3j1rMHL>
- A demo video of Smartender: <https://youtu.be/o8KIC-9Z70s>

## EXPERIENCE

### UNIVERSITY OF BRITISH COLUMBIA | RESEARCH ASSISTANT

Sep 2020 – Present | Vancouver, BC

- Working with Prof. Joel Friedman in the theory group in the CS department
- Current problem considered mainly concerns new information theoretic formulations of coded caching
- Tasks mainly involve developing software to check hypotheses and attempting to prove the ones we suspect to be true
- Other research areas include algebraic graph theory, graph expansion, Markov networks, and game theory

### UNIVERSITY OF BRITISH COLUMBIA | TEACHING ASSISTANT

Sep 2018 – Present | Vancouver, BC

- Teaching assistant for six offerings of various computer engineering and computer science courses
- Walked students through concepts they found difficult with numerous examples, ensuring they understand the problem they are solving
- Graded exams and assignments while giving students constructive feedback to help them understand and correct their mistakes

## AWARDS

Graduate Teaching Assistant Award in The Department of Computer Science	2021
Dean's Achievement Award in Engineering	2020
NSERC Undergraduate Student Research Award	2019
James Yan Award in Electrical and Computer Engineering	2018
SFU Faculty of Applied Science Excellence in Mathematics Award	2016