

# Hamza Dugmag U of T Engineering Science — Robotics Engineering

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## Skills

**Code** (MATLAB, Arduino, Python, C++, Git, UE4, HTML5)

**Visual** (LaTeX, Adobe CC, SolidWorks, AutoCAD, Blender)

## Experience

**Undergraduate NLP Researcher**, *U of T EECG FORCOLAB*

May 2021 – present

- Analyzed Stack Overflow Q&A organization strategies.
- Prepared a journal article with Prof. Shurui Zhou for ICSE.
- Moderated and participated in paper-reading groups.

**Rocketry Avionics Member**, *U of T Aerospace Team*

Jan 2021 – present

- Developed a custom finite-state machine with abort systems to control the liquid rocket's flight system.
- Resolved printing and fastening issues in the avionics bay.

**Co-Founder, Creative Director**, *GreenCap*

Jan 2021 – present

- Designed the visual brand identity and marketing plan.
- Created the software's front-end interface and coordinated with the back-end AWS server.
- Acquired C\$300 as the winners of *UWO's W5 Accelerator*.

**Chief Marketing Officer**, *Silicon Halton's TechUnderTwenty*

Jun 2019 – Jun 2020

- Revamped the visual brand identity and marketing plan.
- Coordinated marketing campaigns and website updates.
- Organized weekly meetings with a team of 40 peers.
- Expanded audience by 100% and engagement by 50%.

## Interests

**World Taekwondo**, *Kukkiwon Second-Degree Black Belt*

Jan 2014 – present

- Kukkiwon-certified, international taekwondo athlete.
- Former assistant coach at *OMAC Taekwondo*.

### Volunteering

- Executed a fundraiser campaign with *Islamic Relief USA* for East Africa's water and sanitation crisis. Boosted funds by 1500% and met 300% of the charity goal.
- Former assistant teacher at *Al-Toufic Arabic School*.

## Education

**Bachelor of Applied Science, Engineering Science (Robotics Engineering)**,

*University of Toronto (St. George)*

Sep 2020 – Apr 2025

- 3.93 GPA, 90% average. Dean's Honours List.
- 10th place in ESC180 AI class tournament.
- *BioMedical Engineering Competition* participant.
- Volunteered at *Engineers without Borders*.

**International Baccalaureate Diploma & OSSD**,  
*White Oaks Secondary School*

Sep 2017 – Jun 2020

- 41/45 IB, 97% average. Academic Honour Roll.
- Co-founded the *Artificial Intelligence Club*.

## Projects

**Modelling Battery Energy Storage Systems**

Jun 2021 – present

- Investigated the flexibility of batteries for energy arbitrage in electricity markets.
- Prepared an IEEE Transaction paper with Prof. Mohamed Ahmed (*IESO, UW*).

**Improving Ski Airbag Trigger Systems (team)**

Feb 2021 – Apr 2021

- Prototyped avalanche detection and Bowden cable activation mechanisms.
- Created testing protocols for design verification.
- Presented a voice-activated trigger system.

**Designing a Box-Girder Bridge (team)**

Nov 2020 – Dec 2020

- Developed beam stress-strain simulation software.
- Created technical drawings and assembly plans.

**Prototyping a Single-Celled Battery**

Mar 2018 – Mar 2019

- Operated a laboratory to conduct novel electrochemistry experiments.
- Analyzed temperature and voltage data to evaluate the feasibility of a 1-cell voltaic system.
- Reviewed the research paper with a supervisor.