

# Hamza Dugmag U of T Engineering Science — Robotics Engineering

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## Skills

**Code** (*Python, MATLAB, Arduino, C++, UE5, Java, Git, Docker*)

**Art** (*LaTeX, Adobe CC, SolidWorks, AutoCAD, Blender, HTML5*)

## Experience

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

May 2021 – present

- Analyzed *Stack Overflow* organization strategies and machine learning techniques for code cloning.
- Prepared a journal article with Prof. Shurui Zhou for *ICSE* and *U of T UnERD* 2021.
- Moderated and participated in paper-reading groups.

**Avionics Subsystem Lead, U of T Aerospace Team — Rocketry**

Jan 2021 – present

- Spearheaded the avionics team on Canada's largest amateur rocketry club.
- Represented the Rocketry team in an interview for *UTAT's* promotional video for recruitment and sponsors.
- Developed a custom finite-state machine and abort system to control the liquid rocket's flight system.

**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%.

## Distinctions

2021

- Amateur Radio Operator Certificate (Honours, 100%)
- Fessenden-Trott Scholarship Nominee
- Dean's Summer Undergrad. Research Pivot Award Nominee
- Engineering Dean's Honours List

2020

- World Taekwondo Kukkiwon 2nd Degree Black Belt
- Rotary Club of Oakville's Rotary Education Award
- May Court Club of Oakville's Scholarship Education Award
- Frank Howard Guest Admission Bursary
- Ontario Scholar

## Education

**Bachelor of Applied Science, Engineering Science, University of Toronto (St. George)**

Sep 2020 – Apr 2025

- 3.93 GPA, 90% average. Dean's Honours List.
- *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*.

## Team 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, UWaterloo*).

**Improving Ski Airbag Trigger Systems**

Feb 2021 – Apr 2021

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

**Combating Climate Change from Ecommerce**

Jan 2021 – Mar 2021

- Designed *GreenCap's* visual brand identity, software user interface, and marketing plan.
- Acquired seed funding as the winner of *Western University's W5 Accelerator*.

**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.