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 to present at *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 used for recruitment and sponsorships.
- 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 cGPA, 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.

Combatting 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.