Hamza Dugmag — U of T Engineering Science — Robotics Engineering

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Skills

Code (MATLAB, Arduino, Python, C++, Java, UE4, HTML5)

Art (LaTeX, Affinity, Adobe, Blender, SolidWorks, AutoCAD)

Experience

Undergraduate NLP Researcher, *U of T ECE FORCOLAB*

May 2021 – present

- Moderated and participated in paper-reading groups.
- Analyzed Stack Overflow Q&A organization strategies.

Avionics Subsystem Member, *U of T Aerospace Team*

Jan 2021 – present

- Developed a custom finite state machine to control the liquid rocket's flight system.
- Designed flight control abort and redundancy systems.

Co-Founder, Creative Director, *GreenCap*

Jan 2021 – present

- Designed the visual brand identity and marketing plan.
- Created the software front-end interface and coordinated with the back-end AWS server.
- Acquired C$300 in seed funding as the winning team at *Western University'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

WT Taekwondo, *Kukkiwon Second Degree Black Belt*

Jan 2014 – present

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

Volunteering

- *Islamic Relief USA*: Executed a fundraiser campaign to improve water and sanitation in East Africa. 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, *University of Toronto (St. George)*

Sep 2020 – Apr 2025

- 3.93 GPA, 90% average, Honours.
- 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 score, 97% average.
- Academic Honour Roll in all semesters.
- Co-founded the *Artificial Intelligence Club*.

Projects

Image Analysis and Processing

Mar 2021 – Apr 2021

- Implemented a dual-gradient energy function for content-aware image resizing.
- Designed a GUI to detect and rank image blur in a specified directory using Laplacian filters.

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 Beam 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.