

# Elif Celik

Toronto, Canada

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## Education

### University of Toronto

Toronto, Canada

BACHELOR OF ENGINEERING IN ENGINEERING SCIENCE, MAJOR: AEROSPACE ENGINEERING

Sept. 2018 - May 2023

**Relevant Courses** — Aircraft Flight, Aircraft Design, Computational Structural Mechanics & Design Optimization, Aerodynamics, Control Systems, Mechanics of Solids and Structures, Gasdynamics, Aeroelasticity, Combustion Processes, Spacecraft Dynamics & Control, Mathematics for Robotics, Linear Algebra, Vector Calculus, Ordinary & Partial Differential Equations

**Awards** — Trenwith and Galipeau Aerospace Science Award in 2020 and 2021, Kenneth Ward Smith Scholarship in 2021

## Technical Skills

**Programming** Matlab, Python, Fortran, C

**Software** Simulink, XFLR5, OpenVSP, Git, CATIA, MS Office

**Operating Systems** Windows, Linux, macOS

## Experience

### Flight Systems and Control Lab at UTIAS

Toronto, Canada

THESIS STUDENT UNDER THE SUPERVISION OF PROFESSOR HUGH LIU

Sept. 2022 - May 2023

- University of Toronto's fourth-year thesis is a course for Engineering Science students that gives them the opportunity to experiment and document an engineering related research under the supervision of a faculty member.
- The thesis project chosen is to investigate the control approaches for eVTOLs, and build a controller for a selected aircraft model in Simulink.
- A literature review is written outlining the current state of the eVTOL technology, including its dynamics and control approaches.
- A Nonlinear Dynamic Inversion based control architecture is designed in Simulink for the selected eVTOL configuration. Simulations are run to ensure that the desired performance is achieved.

### Bombardier Inc.

Toronto, Canada

AIRCRAFT PERFORMANCE INTERN

May 2021 - June 2022

- Generated and validated aircraft performance data for flight manuals such as the QRH and FPCCM, and supported the development of performance software tools such as SCAP and CAFM using programming languages like Matlab and Fortran.
- Analyzed flight test data and attended aircraft simulation tests for performance software tools.
- Improved my programming, team-work, and communication skills through the individual & team projects I was responsible for.

### Rocketry Division at the University of Toronto Aerospace Team (UTAT):

Toronto, Canada

AERODYNAMICS SUBSYSTEM TEAM MEMBER

Aug. 2020 - May 2021

- Supported the design of a hybrid rocket that will be launched in 2023.
- Conducted aerodynamics calculations to create a system for finding the most optimal nose cone design for a general rocket at different speeds.

### University of Toronto

Toronto, Canada

ENGINEERING CAMPUS EXPERIENCE OFFICER (EngCEO)

Aug. 2019 - April 2020

- Acted as a resource for students, answering their questions about extra-curriculars, exam preparation and adapting to university.
- Developed and promoted community through social events such as emotional intelligence workshops and upper year student panels, with a team of 9 other EngCEOs.
- Tracked my interactions with students and assessed the sessions through feedback surveys and interaction logs.

### Space Engineering & Exploration Competition by Robotics for Space Exploration at the University of Toronto

Toronto, Canada

PARTICIPANT

March 2019

- Created an obstacle avoiding robot in less than 8 hours with 3 other teammates.
- Used equipment such as a breadboard, DC motors, Arduino and sensors to assemble the robot.
- Competed against other teams where our robot successfully navigated a path full of obstacles.

## **Biomedical Engineering Design Competition at the University of Toronto's Club for Undergraduate Biomedical Engineering (CUBE)**

Toronto, Canada

PARTICIPANT

March 2019

- Created a design that protects children with Congenital Insensitivity to Pain with Anhidrosis from potential injuries with two other teammates.
- Made a physical prototype that represented our design and presented it to the judges from whom we received positive feedback.
- Improved my teamwork and time management skills given less than 2 days for the project.

## **Toronto Students for The Advancement of Aerospace (TSAA)**

Toronto, Canada

BUSINESS TEAM MEMBER

Sept. 2018 - March 2019

- Promoted aerospace through events where students got to interact with professionals from the industry and build connections.
- Reached out to aerospace institutions and design teams in the Greater Toronto Area to sponsor our annual Aerospace Conference, and created their sponsorship packages.

## **Rube Goldberg Committee at Toronto Metropolitan University**

Toronto, Canada

TEAM MEMBER

Sept. 2017 - April 2018

- Built a fully functional Rube Goldberg Machine for national engineering month.
- Improved hands-on skills while learning how to integrate engineering principles and theoretical concepts into real life.

## **School Design Projects**

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### **Aircraft Design**

Toronto, Canada

AER406

Jan. 2023 - April 2023

- This capstone course allows students to design, build and test fly a remotely piloted aircraft. This design project teaches students how to use motors, batteries, radio equipment and flight instrument to build a small aircraft.
- The aircraft type chosen for this project is a blended wing body type aircraft. A final design report is prepared, outlining the design decisions and the exact dimensions and layout of the aircraft.
- Currently, the aircraft is being built, and the aircraft fly-off will take place in April 2023.

### **Praxis 3**

Toronto, Canada

ESC204

Jan. 2020 - April 2020

- This course required students to integrate the design, technical and complementary knowledge learned in the first two years of Engineering Science into a fully functional, full-term design project.
- The assigned project was to design and build an autonomous solution for plugging in an electric car charger into a charging port.
- Designed a Cartesian robot that moves in the X, Y, Z directions using linear motion with two other teammates.

### **Praxis 2**

Toronto, Canada

ESC102

Jan. 2019 - April 2019

- This course required students to complete an in-depth challenge that spanned opportunity finding and framing, and concept development through prototyping.
- Created a digitized distribution system with three other teammates for the Sanctuary (a community for the homeless in Toronto). The system had a user interface and automatically dispensed harm reduction kits, whereas the old system required the nurses to distribute the kits by hand.

## **Certifications**

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### **Introduction to Satellite Communications (Insitut Mines - Telecom)**

COURSERA

July 2020

- This course outlined the fundamentals of a satellite communication system.
- Learned how satellites are designed, categories of services, types of orbits, how a satellite digital communication system works and various communication techniques, channel coding, link budgets and networking services.

### **Robotics: Aerial Robotics (University of Pennsylvania)**

COURSERA

July 2020

- Learned how autonomous micro aerial vehicles are created in environments filled with obstacles.
- Learned the mechanics of flight and design of a quadrotor in 3-D environments.