

# Daniel Ye

University of Waterloo Mechatronics Engineering

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## SKILLS

**Languages and Tools:** Java, C, C++, Python, Git, Android Studio, AutoCAD, SolidWorks and Solid Edge Modelling

**Hardware:** Arduino, Programmable ICs, Breadboarding and Circuitry

## RELEVANT EXPERIENCE

### Lead Programmer - School FIRST Robotics Club

September 2018 – June 2020

- Programmed the robot using Java for the 2020 FRC Infinite Recharge competition, an international competition consisting of 3898 teams worldwide that compete at regional, provincial, and international events.
- Designed and developed the pneumatically actuated active-intake system using **Solid Edge**, which increased ball intake efficiency compared to a passive-intake system.
- Developed joystick teleoperated controls and autonomous movement, intake, and shooter functionalities based off of **sensory feedback** that aided in making the robot easier to control and decrease the cycle times for scoring chances.
- Implemented real-time **camera vision processing** to automatically align the robot's ball turret/shooter with the retroreflective tape target using a **control loop**, which increased its speed and accuracy to score more points.
- Placed **2<sup>nd</sup> (Finalists)** at the 2020 Ontario District Georgian College event out of 29 teams, and received the Autonomous Award sponsored by Ford.

### Private Java Tutoring - Self-Employed

March 2020 – September 2020

- Lead one-on-one Java lessons for middle school students on competitive programming preparation for contests including the Canadian Computing Competition, and taught introductions to **Object-Oriented Programming**.

### Club Founder and President - School Computer Science Club

June 2018 – May 2020

- Introduced fellow high school students to Computer Science by teaching competitive programming concepts in **Java**.
- Prepared and presented weekly lessons on programming concepts, answered homework questions, and organized competitions to engage and spark interest in students who eventually did well in the Canadian Computing Competition.

## PROJECTS

### Pipe Dodger Android Game

2019

- Interactive and scalable Android game available on the Google Play Store. (Java, Android Studio)

### Personal Portfolio Website

2018-2019

- Personal website/online portfolio to host and showcase projects. (HTML, CSS, Java Script, GitHub Pages)

### Competitive Programming Notes Catalogue

2018

- Online collection of notes for key concepts used in programming competitions, including data-structures, and sorting and searching algorithms. (Java, GitHub)

## AWARDS

### SHAD Saskatchewan Program

July 2019

- Won the SHAD USASK Cup for best Design Project, out of 8 groups in the SHAD Saskatchewan program, for developing an automatic Medical Equipment Dispensing System to reduce medical waste.

### Hack the Hammer

February 2018

- Awarded **2<sup>nd</sup> place** for best project, out of 29 hackathon projects, for creating a **Python** facial recognition app to help first responders assess a situation by identifying the subjects on camera based on database information.

### DECA

2018-2019

- DECA is an international competition where students employ business and critical thinking skills to solve case studies.
- Qualified for the International Career Development Conference in the Food Marketing Series category after placing **top 10 in Ontario** in 2018, and placed top 20 in Ontario for the Sports and Entertainment Marketing category in 2019.
- Developed leadership, communication and public speaking abilities as the President of the club.

## EDUCATION

### University of Waterloo, Waterloo, ON

September 2020 – May 2025 (Expected)

- Candidate for Bachelor of Applied Science in Mechatronics Engineering