

# Dhruvin Balar

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## SKILLS

### LANGUAGES

Proficiency: Java • C • C++

Experienced: Python • Bash •  $\text{\LaTeX}$

### PLATFORMS

Linux • Windows • Android

GitHub • GitLab • Arduino IDE

Eclipse • IntelliJ Idea • Greenfoot • Vim

Photoshop CC • MS Office

Cisco NetAcad • Google Chrome

## VOLUNTEERING

2014-16 Computer Repair

2014-15 Math Tutoring

## EDUCATION

### UNIVERSITY OF WATERLOO

CANDIDATE FOR BACHELOR OF

SOFTWARE ENGINEERING

Expected May 2022

## PROJECTS

### ASTEROID DODGE

| Dec 2015 - Jan 2015 Team size: ●●●

- Used **Eclipse** to code a 2D interactive game in **Python**.
- Forged a **gyroscopic controller** from household materials.
- Learned how to create a GUI and take input from a parallel port.

### MARIO IN HYPERSPACE

| Feb 2017 - Mar 2017 Team size: ●●●

- Used the **Greenfoot** environment to code a complex 2D game in **Java**.
- Utilized **object-oriented programming** to optimize code.
- Applied **abstraction** to optimize the development of the project as a team.

### ANDROID CAR

| Oct 2017 - Dec 2017 Team size: ●●●

- Developed an **Android app** to send data over a **Bluetooth stream**.
- Used **Arduino IDE** to code a program in **C** to drive DC motors.
- Added a camera to the car to construct a live video stream from the car to the phone.
- Learned the basics of **Android app development**.

## EXPERIENCE

### FIRST ROBOTICS | PROGRAMMING TEAM LEADER

Sep 2016 – Jun 2017 | Toronto, ON

- Coded the robot's navigation algorithm in order to allow for high precision and smart acceleration of the robot initially in **C++** but later on transitioned to **Java**.
- Organized** team meetings and **delivered** programming lessons to rookie as well as intermediate programmers.
- Our team won the Rookie Award due to robust performance and team effort.

### PROGRAMMING TEAM | LEAD PROGRAMMER

Sep 2016 – June 2017 | Toronto, ON

- Filled in each other's holes in **Java** and **Python** to improve as a team.
- Organized** team building activities including interclub competitions.
- Coordinated** /partook in official programming competitions.

### NORTHVIEW HEIGHTS S.S. | COMPUTER SERVICES TECHNICIAN

Sep 2015 – Jan 2016 | Toronto, ON

- Developed **communication** and **collaboration** skills with co-workers.
- Dealt with issues that arose amongst the electronics in **short time frames**.
- Developed an **Excel program** for students to sign the library log via scanning Student ID. This helped keep a record of who's been in-and-out of the library.

### LASER TANKS | Oct 2017 - Nov 2017

Team size: ●●●

- Worked with **Arduino IDE** and **GitLab** to collaboratively develop a software program in **C** to control a homemade tank via **Bluetooth**.
- Programmed algorithms to allow **4-way communication** amongst the tanks and controllers using Bluetooth and IR signals.
- Applied knowledge of **physics** and **linear algebra** to create robust **hand gesture** detection algorithms for controller input.
- Gained teamwork skills and learned how to use GitLab for collaboration.

### CALENDAR APPLICATION | Apr 2017 - Jun 2017

Team size: ●●●

- Utilized **IntelliJ Idea** to develop a graphical user-friendly calendar application in **Java** for booking labs, laptops and tablets for use by teachers.
- Smart selection algorithm** automatically chooses which form of technology is best for the teacher considering many factors. E.g., time, purpose...
- Secure login system** ensures no-one can fake someone's identity.
- Learned how to properly use **data abstraction**, **encapsulation** and **inheritance** to improve the quality and efficiency of the code.

## TRAITS

Adaptable  
Open-minded  
Organized  
Social

Easily adapts to a team environment, as developed via collaborative projects.  
Open to suggestions and views everything as a learning opportunity.  
Good time management and task prioritization.  
Great at communicating ideas or proposing resolutions to issues.

## AWARDS

2017  
2016 & 2017  
2014

University of Waterloo President's Scholarship of Distinction  
Computer Science Award at Northview Heights S.S.  
Student Initiative Award at Northview Heights S.S.