# Roshan **Munjal**

COMPUTER SCIENCE · UNIVERSITY OF WATERLOO

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## Skills

**Languages** *Proficient:* Java, Python | *Competent:* JavaScript, HTML5//CSS3, Racket | *Familiar:* C, MATLAB//Octave

**Tools** *Libs:* NodeJS, libGDX, Keras, Scikit-Learn | *Tools:* Git, GitHub, LaTeX, Eclipse, Atom | *Frameworks:* Bootstrap, LUIS, Unity

## Projects

### Financial Outlier Detection — *New Haven, CT*

YHack (Yale Hackathon) — *Dec. 2017*

- Parsed financial data from the CSV files in the JPMorgan Chase dataset and stored input into DataFrames using Pandas in Python.
- Looked for key metrics and implemented linear regression and Gaussian distributions in Scikit-Learn to identify outliers.
- Built a front-end using HTML5//CSS3 and used Flask to retrieve CSV files from the user. Presented project to 5 judges.

### Chess Game & Engine

Personal — *Aug. 2017 - Present*

- Using object-oriented principles in Java including classes for the board and GUI and abstraction for pieces, moves and other features.
- Currently implementing a chess engine that analyzes previous games using the Minimax algorithm.

### Destin — *Toronto, ON*

Global AI Hackathon — *Jul. 2017*

- Developed a chat-bot that responds to queries about different locations around the world in a team of 6.
- Utilized Microsoft's LUIS (language processing) API and integrated components in JavaScript using NodeJS.
- Presented chat-bot project idea to ~40 people using the Microsoft Bot Emulator Framework and earned 2nd place at the Global AI Hackathon in Toronto.

## Activities

### Waterloo Sailbot — *Waterloo, ON*

Controls Team Member — *Oct. 2017 - Present*

- Tested deep learning frameworks to use with compatibility in ROS and the on-board Jetson hardware for the autonomous sailboat. Presented on benefits and drawbacks of the frameworks to a team of 10.
- Currently building a classifier to detect an orange buoy using transfer learning on the Inception model in Python.

### *FIRST* Robotics — *Mississauga, ON*

Strategy Lead — *Oct. 2016 - May. 2017*

- Led a team of 5 to effectively collect data on other teams using scouting sheets and the FRC Krawler app. Made strategy decisions based on analysis in Excel.
- Learned fundamentals of programming the robot in the FRC WPI library in Java and how sensors relay data to and from the RoboRIO.
- Attained 7 awards in Regional and Provincial events and qualified for the *FIRST* World Championship in Rookie year.

### University of Toronto — *Toronto, ON*

*Jr. DEEP* Camp Counsellor — *Jul. 2015 - May. 2015*

- Assisted instructors of the Junior DEEP program inspire elementary school students about scientific discovery and innovation.
- Supervised children and taught lessons on space exploration. Helped students learn via daily activities.

### Chess Team & Club — *Mississauga, ON*

President — *Sep. 2013 - May. 2017*

- Led high school chess club & team and helped improve players' skills through weekly games and chess exercises.
- Participated in several tournaments in the PEEL region and won 1st place in the PEEL Team Chess Tournament 2013.

## Honours

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| 2017 | **Len Richardson Award**, Awarded to 1 graduating student in Stephen Lewis S.S. displaying great passion for science & innovation. | *Mississauga, ON* |
| 2017 | ***FIRST* Rookie Inspiration Award**, Celebrates a rookie team's outstanding success in advancing appreciation for engineering, both in their school and in their communities. | *Toronto, ON* |
| 2017 | **Faculty of Mathematics Scholarship**, Awarded to outstanding students entering the Math Faculty. | *Waterloo, ON* |
| 2015 - 2017 | **Mathematics Contests**, Achieved top 5% in the Fermat/Hypatia/Cayley Waterloo Math Contests. | *Waterloo, ON* |

## Education

### University of Waterloo — *Waterloo, ON*

Candidate | Bachelor of Computer Science (Co-op) — *Sep. 2017 - Present*

- Taking additional courses and planning to pursue the Joint Statistics Major. (Current GPA: 3.94)
- *Online coursework:* Machine Learning (Stanford//Coursera) and Introduction to Computer Science using Python (MITx//edX).