

# ROSHAN MUNJAL

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## EXPERIENCE

### Software Developer

#### Vision Critical

Jan. 2019 – Apr. 2019 Vancouver, BC

- Implemented a **TypeScript** micro-service to export member data.
  - \* **Dockerized**, hosted on ECR and invoked through an **AWS** State Machine. Published updates to a NATS client.
  - \* Used **Node** to stream data from an **MS SQL** server or a **Postgres** instance to S3 buckets. Managed back-pressure from SQL server due to open-source library limitations.
  - \* Capped ECS usage at 200 MB while processing millions of records.
  - \* Discussed needs with Engineering & Product Managers and transformed data into multiple JSON formats.
- Worked with the team on key ETLs migrating to a **Postgres** store for faster export services.
  - \* Switched to a schema-per-tenant design for faster data access.
  - \* Reduced export times by up to 70% in pre-release tests.
- Developed and released features: refreshing member group counts in **C#** and web pages for customer engagement metrics in **React**.

### Software Engineer

#### Kooltra

May. 2018 – Aug. 2018 Toronto, ON

- Worked on a Forex platform on **AWS** with thousands of daily trades.
- Designed endpoints in **Java** to receive Forex quotes and execute trades based on price triggers through Oanda's platform.
- Developed automatic trade confirmation emails in **Java** and built a suite of unit tests.
- Paired with team lead to write **Python** scripts to run integration tests on Salesforce orgs with randomly generated data.

### Controls Member

#### UW Sailbot

Oct. 2017 – Dec. 2017 Waterloo, ON

- Tested deep learning frameworks compatible with **ROS** and the Jetson hardware for the autonomous sailboat.
- Built and iterated on a CNN classifier to detect a buoy in **Keras**.

### Strategy Lead, Programmer

#### FIRST Robotics

Oct. 2016 – May. 2017 Mississauga, ON

- Led a team of 5 people to collect metrics on teams using the FRC Krawler app. Performed statistical analysis in Excel.
- Implemented robot controls in the FRC WPI library in **Java** and learned about sensor communications.

## TECHNOLOGIES

Python, JavaScript, Java, SQL, Unix  
C++, Node, SkLearn, Docker, AWS  
TensorFlow, Keras, Postgres



## PROJECTS

### Chess Game & Engine

- Designed the board, pieces and moves in **Java** using **Guava** data structures.
- Implemented a **Swing** GUI that facilitates both player and AI games.
- Constructed a chess engine using Minimax.

### Destin

Global AI Hackathon, 2<sup>nd</sup> Place

- Developed a chat-bot that responds to queries about different locations by analyzing Google searches, in a team of 6.
- Leveraged Microsoft's **LUIS API** to understand searches and integrated components in **Node**.

### Financial Outlier Detection

Yale Hackathon

- Predicted if bank loans would be approved given a company's financial data.
- Parsed JPMorgan dataset and implemented regression and Gaussian distributions in **Scikit-Learn** to identify outliers.
- Retrieved CSV files from user with **Flask**.

## HONORS & AWARDS

- Bloomberg Code B AI Challenge**. Finished 3<sup>rd</sup> place and earned the design prize for an interactive Terminal display.
- Mathematics Awards**. Achieved top 5% in the Fermat, Hypatia & Cayley Waterloo Math Contests.

## EDUCATION

### Bachelor of Computer Science

#### University of Waterloo

Sep. 2017 – May. 2022

- Deep Learning Specialization (Coursera), Data Structures and Algorithms, Object-Oriented Programming.
- DEEP Academy leader at the University of Toronto. **Chess** enthusiast. Active **hiker**.