

Mushi (Calvin) Wang

Phone: 647-671-8756 | E-mail: M358wang@uwaterloo.ca | GitHub: <https://github.com/printfCalvin/>

SUMMARY OF QUALIFICATIONS

- **Programming:** Python, C++, C, Shell Script, R, JAVA
- **Data analytics and Machine Learning:** Advanced Excel, SQL, SAS, and Python (Pandas /TensorFlow), Matlab
- **Familiar with Objected-Oriented design** using UML and design patterns
- **Version Control System:** Git
- **Robotic Process Automation:** UiPath
- **Data visualization:** PowerPoint, R, MATLAB, Matplotlib with Python

EDUCATION

University of Waterloo, Waterloo, ON

Sept 2017 – Present

- **Candidate for Bachelor of Mathematics, Honors Data Science**
- Awards:
 - 2017 President's Scholarship of Distinction
 - Excellent Standing: Winter 2018, Spring 2018, Fall 2018, Winter 2019, Fall 2019
- Relevant Courses: Function Estimation, Computational Statistics and Data Analysis, Applied Linear Models, Introduction to Graph Theory, Introduction to Database Management, Data Structures & Data Management, Algorithm

WORK EXPERIENCES

Research Assistant, University of Waterloo

Waterloo, Jan. 2021 – present

Supervisor: Dr. Semih Salihoglu

- Explored methods to represent query and dataset
- Explored different heuristics to estimate cardinality of a cyclic or acyclic join query
- Ran heuristics in a number of datasets and injected the heuristics into RDF-3X to compare the performance
- Visualized the data using Matplotlib with Python

CS 138 Instructional Support Assistant, University of Waterloo

Waterloo, Jan. 2020 – Apr. 2020

Supervisors: Dr. Michael Godfrey, Scott Freeman King, Gang Lu

- Provided academic assistance to students, designed test cases for programming assignments and collected students' feedback to help improve the course quality
- Summarized contents discussed in class, created a new system to evaluate students' performance from different perspectives and sent monthly reports in time

Software Engineer, China Technology Innovation Corporation

Beijing, China, May. 2019 – Aug. 2019

- Collaborated with software engineers to test the program functionality and supported the launch of the RPA (robotic process automation) project by using UiPath
- Created a Python package to automate the data processing pipeline including data loading, cleaning, and missing value detection
- Performed code review and debugging, created test suites to access product performances, and employed Git version controls in a Unix environment to make code changes

PROJECT EXPERIENCE

Projects

2019 – 2021

- Implemented Neutron Networks, SVM, Logistic Regression, Linear/Quadratic Discriminant Analysis, Principal Component Analysis, etc. to perform classifications
- Utilized Pandas in Python to process the raw dataset of Wayne Gretzky's goals and ingest it into a DataFrame
- analyzed the times at which the goals occurred during a sixty-minute game and visualized the results with Matplotlib
- Developed a R package to find local minimum using different kinds of gradient descent algorithms
- Developed a R package to predict data by performing cross-validation
- Used Horvitz-Thompson estimate to estimate quantile of age among male Titanic survivals and calculated standard error of the estimate with R
- Generated 1000 bootstrap samples and fitted a linear function to each sample using robust regression and the Huber function in R

Game Development Project

- Built a game similar to Tetris with two players and graphic display; implemented the game in C++ on Linux
- Applied MVC paradigm in system architecture design and coordinated work with team members through Git
- Optimized code structure by applying design patterns like singleton and iterators to improve readability and efficiency