bowenwen.github.io | +1 647-924-1996 | bowenwen@gmail.com

BO WEN WEN

DATA SCIENTIST

I am passionate about solving complex problems using data. I have built data-driven software solutions using statistical and machine learning models in C#, Java, R, and Python to investigate research questions and address business needs. I want to apply my data skills to make lives easier, simpler and better.

EXPERIENCE

2017.09 – present

DATA SCIENTIST – IBI Group Inc.

- Produced statistical and machine learning models using **SQL**, **Python** and **R** pipelines to enable predictive analytics product features.
- Designed and optimized extract, transform, load (ETL) procedures for data from consulting practices and software services.
- Maintained and deployed cloud applications on **Linux VM** and **Docker**, including scripting procedures in **Python** and **Bash**, as well as docker images which speed up deployment on **Azure** and **AWS**.
- Collaborated with software development teams using **git** and **Microsoft TFS** to maintain version control, track issues and manage documents.
- Communicated the value of data analytics through presentations and reports to Associates, Directors and CEO to solidify strategic directions.

2015.09 – 2017.09

RESEARCH/TEACHING ASSISTANT – University of Toronto, Engineering

- Produced a tool in **C#** which ingests streaming data from multiple web APIs to **MS SQL Server**, reducing data collection time by 90% for 3 projects.
- Developed an end-to-end data-driven simulation pipeline for the Toronto transit system, using over 15,000 lines of codes written in **C#** and **R**, which performs data mining, machine learning, and model simulation.
- Evaluated the model performance of artificial neural networks, support vector machines, linear mixed effects, regression trees, and random forest models, using caret in R, and scikit-learn in Python.
- Prepared two grant proposals, two academic papers, and a conference presentation to obtain funding and communicate research contributions.
- Taught tutorials for Transportation Planning (CIV531), which involved planning scenario analysis of the Toronto Waterfront Network in **EMME 4**.

2015.05 – 2015.08

TRANSPORTATION ANALYST – IBI Group Inc.

- Processed origin-destination, turning movements, and GTFS transit schedule data to model multimodal corridors in **VISUM**, reducing time spent by over 10% and improving reproducibility.

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- Wrote technical user manual for the NITCIP 1211 protocol testing software, which was used by several vendors to test hardware compliance.
- Led a team of five engineering assistants in the inspection and quality assurance of infotainment systems onboard 18 UP Express ARL train cars.

2014.09 – 2014.12 **RESEARCH STUDENT** – University of Toronto, Engineering

- Developed a reinforcement learning (RL) agent in **Java** which interacts with a simulated transportation network environment to minimize passenger delay at traffic signals.
- Used **C** to gather state data such as queue length at each intersection approach, in order to optimize signal timing using RL agent.

EDUCATION

2015.09 – 2017.09 **MASTER OF APPLIED SCIENCE** – University of Toronto cGPA: 3.94/4

- Civil Engineering, Transportation
- Thesis: Data-driven mesoscopic simulation of large-scale surface transit networks (Prof. Amer Shalaby)

2010.09 – 2015.05 **BACHELOR OF APPLIED SCIENCE** – University of Toronto cGPA: 3.76/4

- Civil Engineering, Minor in Business
- Thesis: Reinforcement learning-based adaptive traffic signal control system for transit (Prof. Baher Abdulhai)

ACTIVITIES

2018.01 – present **TORONTO AI** – Member
2017.02 – present **CIVIC TECH TORONTO** – Member
2016.05 – 2017.04 **INSTITUTE OF TRANSPORTATION ENGINEERS** – Financial Officer

CERTIFICATIONS

2015.11 – present **ENGINEERING INTERN (EIT)** Professional Engineers Ontario
2018.01 **DATA SCIENCE IN PYTHON** University of Michigan on Coursera
2017.07 **MACHINE LEARNING** Stanford University on Coursera

AWARDS

2016 **NSERC CANADA GRADUATE SCHOLARSHIP** $17,500
2010 – 2015 **DEAN'S HONOURS LIST**
2010 **ALEXANDER RUTHERFORD SCHOLARSHIP** $2,500