Bo Wen Wen

410-145 St. George ST, Toronto, ON M5R 2M1 | 647.924.1996 | bowenwen@gmail.com | bowenwen.github.io | linkedin.com/in/bowenwen | github.com/bowenwen |

Summary

As a data scientist with IBI Group, I work closely with product teams to improve software features and with senior management to facilitate data-driven decisions. I received a Master of Applied Science degree from the University of Toronto, completing a thesis on data-driven simulation of transit networks using IoT location data. I have developed solutions in Python, R, and C#, and am experienced in using Tableau and Jupyter Notebook. I want to advance my skills in working with big data and building complex machine learning models to challenge traditional assumptions and create business value. In doing so, I will improve the products and services provided to clients and customers.

Professional Experience

Data Scientist, IBI Group 09/2017 – present

- Work with a cross-functional team to enhance the investment potential of several internet of things (**IoT**) software products.
- Optimize the extract, transform, load (**ETL**) procedures for data sources from internal departments, consulting practices, and software services.
- Produce statistical and machine learning models with client data using **SQL**, **Python** and **R** pipelines to enable predictive analytics features for products.
- Train internal analysts to use **Tableau**, **Superset** and **Jupyter Notebook** to produce data-driven dashboards and reports, reducing the time spent on processing data and generating routine analysis by over 50%.
- Communicate the value of data analytics to shareholders to build investor confidence, and to company leaders to solidify strategic directions.

Research Assistant, University of Toronto 09/2015 – 09/2017

- Developed a data-driven simulation pipeline for the Toronto Transit Commission network, using over 15,000 lines of codes written in **C#** and **R**, which performs data mining, feature extraction, model estimation, and model simulation.
- Produced a data collection tool in C# that continuously retrieves and organizes vehicle location data (30,000 points per hour) from the NextBus web API, reducing data collection time by 90% for more than 3 transit research studies.
- Evaluated the model performance of linear regression, artificial neural networks, support vector machines, linear mixed effects, regression trees, and random forest models, using MASS, neuralnet, liquidSVM, lme4, rpart, ranger in R, and scikit-learn in Python.
- Visualized geospatial data using a custom XAML Map Control application in C# and with CARTO Maps API to communicate research findings.

Analyst, IBI Group 05/2015 – 08/2015

- Produced report generation software using Microsoft **VBA** to increase the efficiency of generating daily and weekly parking reports for our clients, resulting in over 25% cost saving.

- Processed traffic and transit engineering data using Microsoft Access **SQL** queries to save over 10% of time spent on data processing.
- Wrote technical user manual for the NITCIP 1211 protocol testing software, which was used by several contractors to test hardware for open standard compliance.

Community Leadership Experience

Civic Hacker, Civic Tech Toronto 02/2017 – present

- Developed a full-stack web application for a Toronto Bluetooth traffic data dashboard, using **HTML** and leaflet in **JavaScript** to display map data, and flask in Python to host web API.
- Collaborated with a multi-disciplinary team with diverse interests to deliver technology solutions that facilitate public engagement and improve government infrastructure.

Financial Officer, Institute of Transportation Engineers UofT 05/2016 – 04/2017

- Led the student activities initiatives with other executives to win the ITE Student Chapter Delta Award for the year 2016-2017.
- Maintained liaison with ITE Toronto and CITE executives in the planning of regional chapter events to negotiate sponsorships and promote events.
- Prepared annual reports and annual financial statement to improve the student chapter's accountability and transparency to its sponsors and students.

Education

Master of Applied Science (MASc), University of Toronto 09/2015 – 09/2017
Civil Engineering cGPA: 3.94/4.0
Supervisor: Prof. Amer Shalaby
Thesis: Data-driven mesoscopic simulation of large-scale surface transit networks

Bachelor of Applied Science (BASc), University of Toronto 09/2010 – 05/2015
Civil Engineering, Minor in Engineering Business cGPA: 3.76/4.0
Thesis: Reinforcement learning-based adaptive traffic signal control system for transit

Certifications

Engineering Intern (EIT), Professional Engineers Ontario 11/2015 – present
License Number: 100228406
Data Science in Python, University of Michigan, Coursera 01/2018
License 93A74QDG6YUY
Machine Learning, Stanford University, Coursera 07/2017
License 8YKRHW4F8T3Q

Honours and Awards

NSERC Canada Graduate Scholarship (value: $17,500) 05/2016 – 04/2017
Dean's Honours List 09/2010 – 06/2013
Alexander Rutherford Scholarship (value: $2,500) 08/2010