

## Barry Chen

linkedin.com/in/barryatwork | +1 (647) 676 2854 | barry.chen@mail.utoronto.ca | barryf710.github.io

### EDUCATION

<b>University of Toronto</b>	Sep 2023 – Present
Master of Chemical Engineering & Applied Chemistry (Specialized in Analytics & Biomanufacturing)	Toronto ON
Relevant Coursework: APS 1070H, MIE 1624H, MIE 1628H, APS 1052H	
<b>McMaster University</b>	Sep 2017 – Jun 2023
Bachelor of Chemical Engineering & Management Co-op (Specialized in Process Systems Engineering)	Hamilton ON

### SKILLS

**Software:** Microsoft Office Suite, MATLAB, GAMS, Simulink, Autodesk Inventor, Aspen Plus, Minitab, Tableau

**Library:** TensorFlow, PyTorch, Pandas, Polars, NumPy, SciPy, Scikit-learn, Keras, NLTK, Matplotlib, Seaborn, PySpark

**Programming:** Python, MATLAB, Rust, GAMS, HTML/CSS, SQL, Java, VBA

### EXPERIENCE

<b>University of Toronto</b> (Department of Mechanical & Industrial Engineering)	Oct 2023 – Apr 2024
Research Assistant	Toronto ON
<ul style="list-style-type: none"><li>Determined the optimal temperature range of the modified PPE through over 50 hours of batch foaming experiments</li></ul>	
<b>McMaster University</b> (Faculty of Engineering)	Oct 2022 – Feb 2023
Research Assistant	Hamilton ON
<ul style="list-style-type: none"><li>Developed open-access experiential learning modules focusing on design thinking and engineering improvisation to promote an interactive and engaging learning environment for over 900,000 students and educators</li><li>Optimized student learning experience by testing and evaluating over 40 activities</li></ul>	
<b>McMaster University</b> (Department of Chemical Engineering)	May 2022 – Aug 2022
Research Assistant	Hamilton ON
<ul style="list-style-type: none"><li>Troubleshoot significant performance discrepancy between MPCs in MATLAB and Simulink, achieving 0% deviation</li><li>Solved continuous setpoints tracking setup problem in the Simulink reinforcement learning environment</li></ul>	
<b>Thermo Fisher Scientific</b> (Data Management Team)	May 2021 – Apr 2022
Technical Services Coordinator	Mississauga ON
<ul style="list-style-type: none"><li>Facilitated manufacturing readiness by reducing group's TrackWise overdue items by 25% in tight timelines</li><li>Ensured compliance with ALCOA principles and GMP/SOP standards when revising over 5,000 documents</li><li>Achieved Involvement Inspire award for helping project managers receive over 50 specification approvals in a week</li></ul>	

### PROJECTS

<b>Data Analytics &amp; Machine Learning</b>	Sep 2023 – Dec 2023
<ul style="list-style-type: none"><li>Averaged over 98% on 4 projects about price clustering, fraud detection, PCA/SVD for time series, gradient descent</li></ul>	
<b>Data Science &amp; Analytics</b>	Sep 2023 – Dec 2023
<ul style="list-style-type: none"><li>Implemented multi-class ordinal logistic regression and increased model performance by 10% through grid search</li><li>Enhanced functionality of a DQN-based trading bot by incorporating a feature of saving the most profitable models</li></ul>	
<b>Chemical Engineering Capstone</b>	Sep 2022 – Apr 2023
<ul style="list-style-type: none"><li>Created an optimization-algorithm-based Python tool for Hatch, improving wastewater plant efficiency by over 20%</li><li>Awarded as the Best Industrial Application at the McMaster Engineering Capstone Expo Day</li></ul>	
<b>Machine Learning in Python</b>	Dec 2020 – Mar 2022
<ul style="list-style-type: none"><li>Gained hands-on experiences of over 20 techniques in regression, classification, clustering, deep learning, NLP, RL</li><li>Coded a stacked LSTM model to solve the stock price prediction problem in the COMAP math modeling contest</li></ul>	