Barry Chen

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EDUCATION

University of Toronto *Sep 2023 – Present*

Master of Chemical Engineering & Applied Chemistry (Specialized in Analytics & Biomanufacturing) Toronto ON

McMaster University *Sep 2017 – Jun 2023*

Bachelor of Chemical Engineering & Management Co-op (Specialized in Process Systems Engineering) Hamilton ON

SKILLS

- **Software:** Microsoft Office Suite, MATLAB, Simulink, Autodesk Inventor, Aspen Plus, Minitab, GAMS, Tableau
- **Library:** TensorFlow, PyTorch, Pandas, NumPy, Scikit-learn, NLTK, Keras, SciPy, Matplotlib, Seaborn, PySpark
- **Programming:** MATLAB, Python, GAMS, HTML, CSS, SQL, VBA

EXPERIENCE

University of Toronto (Department of Mechanical & Industrial Engineering) *Oct 2023 – Present*

Research Assistant Toronto ON

- Determined the optimal temperature range of the modified PPE through over 50 hours of batch foaming experiments

McMaster University (Faculty of Engineering) *Oct 2022 – Feb 2023*

Research Assistant Hamilton ON

- 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
- Optimized student learning experience by testing and evaluating over 40 activities

McMaster University (Department of Chemical Engineering) *May 2022 – Aug 2022*

Research Assistant Hamilton ON

- Troubleshot significant performance discrepancy between MPCs in MATLAB and Simulink, achieving 0% deviation
- Solved continuous setpoints tracking setup problem in the Simulink reinforcement learning environment

Thermo Fisher Scientific (Data Management Team) *May 2021 – Apr 2022*

Technical Services Coordinator Mississauga ON

- Facilitated manufacturing readiness by reducing group's TrackWise overdue items by 25% in tight timelines
- Ensured compliance with ALCOA principles and GMP/SOP standards when revising over 5,000 documents
- Achieved Involvement Inspire award for helping project managers receive over 50 specification approvals in a week

PROJECTS

Data Analytics & Machine Learning *Sep 2023 – Dec 2023*

- Averaged over 98% on 4 projects about price clustering, fraud detection, PCA/SVD for time series, gradient descent

Data Science & Analytics *Sep 2023 – Dec 2023*

- Implemented multi-class ordinal logistic regression and increased model performance by 10% through grid search
- Enhanced functionality of a DQN-based trading bot by incorporating a feature of saving the most profitable models

Chemical Engineering Capstone *Sep 2022 – Apr 2023*

- Created an optimization-algorithm-based Python tool for Hatch, improving wastewater plant efficiency by over 20%
- Awarded as the Best Industrial Application at the McMaster Engineering Capstone Expo Day

Machine Learning in Python *Dec 2020 – Mar 2022*

- Gained hands-on experiences of over 20 techniques in regression, classification, clustering, deep neural networks, natural language processing, dimensionality reduction, and decision making
- Coded a stacked LSTM model to solve the stock price prediction problem in the COMAP math modeling contest