Barry Chen

linkedin.com/in/barryatwork • barrychenwork@gmail.com • barryf710.github.io

EDUCATION

University of Toronto Sep 2023 – Jun 2025
Master of Engineering (Specialized in Data Analytics & Machine Learning, Biomanufacturing) Toronto ON

McMaster University Sep 2017 – Jun 2023
Bachelor of Engineering & Management Co-op (Specialized in Process Systems Engineering) Hamilton ON

SKILLS

Platforms & Tools: Azure, Databricks, Apache Spark, Hadoop, Power BI, MATLAB, Minitab, Microsoft Office Suite
Libraries: Pandas, NumPy, SciPy, Scikit-learn, PySpark, TensorFlow, PyTorch, Pyomo, Hugging Face, NLTK, Matplotlib
Programming: Python, SQL, Rust, R, Scala, Java, MATLAB, HTML/CSS, VBA, Git

EXPERIENCE

Clinical Data Science Research Assistant | Unity Health Toronto Nov 2024 – Nov 2025
Keenan Research Centre for Biomedical Science Toronto ON

- Explored, cleaned, and modelled high-dimensional clinical data (600+ features) using supervised and unsupervised learning to identify key drivers of outcomes, translating insights into recommendations for domain stakeholders

Data Analytics Research Assistant | University of Toronto May 2024 – Aug 2024
Institute for Studies in Transdisciplinary Engineering Education & Practice Toronto ON

- Identified 5 major areas to improve students' work-life balance from survey data through LLM-aided clustering
- Increased accuracy by 30% via feature engineering and optimization of logistic regression and XGBoost models

Engineering Education Research Assistant | McMaster University Oct 2022 – Feb 2023
Faculty of Engineering Hamilton ON

- Collaborated on designing 4 experiential learning modules reaching 900,000+ students and educators across Ontario
- Optimized student experience by evaluating 40+ activities on design thinking and engineering improvisation

Controller Design Research Assistant | McMaster University May 2022 – Aug 2022
McMaster Advanced Control Consortium Hamilton ON

- Troubleshot significant performance discrepancy between MPCs in MATLAB and Simulink, achieving 0% deviation
- Resolved a continuous setpoints tracking issue, enabling testing in the Simulink reinforcement learning environment

Technical Services Coordinator | Thermo Fisher Scientific May 2021 – Apr 2022
Data Management Team Mississauga ON

- Facilitated manufacturing readiness by reducing TrackWise overdue items by 25% while ensuring GMP/SOP standards
- Achieved Involvement Inspire award for helping project managers receive 50+ specification approvals in a week

PROJECTS

Machine Learning Case Studies in Finance | University of Toronto Jan 2024 – Jun 2025

- Boosted portfolio profit by 30% through a sentiment-based trading strategy using BERT variants and GPT-2 LLMs
- Developed a multi-indicator-based hierarchical trading strategy, leading to 150%+ profit gain during backtesting

IELTS Writing Helper | University of Toronto Sep 2024 – Nov 2024

- Built an essay scoring system combining GPT-4o-mini multi-agent generators with 4 fine-tuned DeBERTa-v3 classifiers
- Improved F1 score by 25% by experimenting with classifier designs using BERT/GPT variants, and Llama models

Machine Learning in Rust | Self-Directed Project Feb 2024 – Apr 2024

- Built 4 Rust-based data science and machine learning tools from scratch, accelerating model experimentation
- Reproduced a multi-layer perceptron using customized tools, enabling supervised learning on tabular datasets

Could-Based Data Analytics | University of Toronto Jan 2024 – Apr 2024

- Optimized a movie recommendation model by reducing RMSE by 20% using Apache Spark in Databricks Notebooks
- Deployed 3 resources in Azure Cloud Platform to execute SQL queries, enabling efficient analysis on a large dataset