Project Title:
Agentic AI Systems for Real-World Data-Driven Applications

Description

This MEng project offers students the opportunity to tackle real-world supply chain challenges through advanced optimization and automation techniques. Working with a leading Canadian supplier, participants will address the complex problem of multi-tier product distribution from factories to distribution centers and retail stores. The project focuses on developing intelligent systems that optimize multi-layer distribution networks, reduce carbon emissions through improved transportation planning, and enhance demand forecasting for accurate one-shot deliveries. Students will implement data-driven solutions using cutting-edge platforms including Databricks and Power BI, creating scalable and industry-ready automation systems. The project combines operations research methodologies with machine learning techniques to build predictive models, optimization algorithms, and interactive dashboards that enable real-time supply chain decision-making and performance monitoring.

Qualification required.

- Familiarity with Operations Research methods (e.g., simplex method, integer programming, OR solvers).
- Proficiency in Python.
- Knowledge of Machine Learning, SQL, and Power BI is an asset.
- Strong communication, teamwork, and problem-solving skills.

Responsibility

- Participate in weekly progress meetings and deliver project updates.
- Develop and test optimization models for supply chain automation.
- Implement demand forecasting methods to improve one-shot delivery.
- Collaborate with team members and industry partners, with some availability for in-person meetings in Toronto.
- Present findings clearly and contribute to project documentation.