Machine Learning Course Curriculum

Introduction to Machine Learning

- Understanding the basics of Machine Learning and its applications.
- Differentiating between supervised, unsupervised, and reinforcement learning.
- Setting up the environment and libraries for ML.

Reinforcement Learning

- Introduction to reinforcement learning and its applications
- Understanding the Markov Decision Process (MDP) framework
- Implementation of reinforcement learning algorithms such as Q-learning
- Applying reinforcement learning to optimize processes, scheduling and resource allocation

Supervised Machine Learning

- Understanding supervised learning and its applications
- Regression techniques for predicting parameters, quality metrics and performance indicators
- Classification algorithms for fault detection, anomaly detection and predictive maintenance
- Decision tree-based methods for decision support and process optimization

Unsupervised Machine Learning

- Introduction to unsupervised learning and its applications
- Clustering algorithms for grouping similar processes, products or components
- Dimensionality reduction techniques for feature extraction and visualization
- Outlier detection and anomaly identification in data

Decision Trees - Supervised Learning

- Understanding decision trees and their structure.
- Building a decision tree from scratch using entropy and information gain.
- Pruning: Techniques to prevent overfitting in decision trees.

Model Deployment and Interpretability

- Deploying machine learning models to production.
- Interpreting model predictions and explaining ML decisions.
- Ethical considerations and bias in machine learning applications.

Final Capstone Project

- Undertaking a real-world machine learning project.
- Identifying a problem, collecting data, and preprocessing.
- Selecting appropriate algorithms and models for the project.
- Evaluating model performance and making improvements.

Prerequisites:

- Basic programming knowledge (Python) is recommended but not mandatory.
- While prior programming knowledge is helpful, we welcome learners from all backgrounds. A curious mind and enthusiasm to learn are all you need to succeed in this course.

Why Choose Our Course?

Our Machine Learning Course offers a comprehensive curriculum tailored to the Canadian market, providing you with hands-on projects and mentorship from experienced AI professionals. You'll gain job-ready skills and build a portfolio to showcase your expertise to potential employers. Whether you're an entry-level professional or an University student, our course empowers you to tap into the vast job opportunities waiting for Machine Learning experts in Canada's thriving AI industry. Embrace the future of AI and machine learning by enrolling in our course today!