Machine Learning Foundations

A Metis corporate training course developed for teams of 10 or more.

ABOUT THE COURSE

This course provides a foundation of the two largest areas in machine learning: supervised and unsupervised learning. Instructors will demonstrate how machine learning techniques are applied to business problems, as well as how to implement these techniques using popular Python libraries. Lessons incorporate both lectures and hands-on exercises with a focus on cultivating practical skills.

COURSE OUTCOMES

Upon completion of the course, attendees should be able to:

- Define “Machine Learning” and common terminology
- Explain the different types of machine learning and the problems each can solve
- Identify if a problem is a regression, classification, or clustering problem
- Identify a useful metric for the business problem and optimize a model against it
- Estimate the performance of a model on new data
- Train and predict on messy datasets, including data that has outliers and/or missing data
- Identify important features for the model
- Identify the strengths and weaknesses when selecting a model for a problem
- Apply and explain clustering (e.g. customer segmentation)

PREREQUISITES

Some experience with Python (ability to write loops and use simple functions). The Python for Data Analysis course is a way to upskill a team to this point.

LENGTH

3-5 Days

LOCATION

On-site or Live Online

STUDENT PROFILE

Data scientists, statisticians, analysts, or others in similar analytical and quantitative roles

METIS®

MACHINE LEARNING FOUNDATIONS COURSE OUTLINE

DAY 1

Introduction to Supervised Learning & Regression

- Probability and statistics review
- Exploratory Data Analysis (EDA)
- Introduction to Machine Learning
- Linear Regression (Ordinary Least Squares)
- Polynomial Regression
- Overfitting vs Underfitting

DAY 2

Regularization

- Review of Day 1
- Cross-validation and measuring generalizability
- Overfitting vs Underfitting with Regularization
- Feature engineering
- Logistic Regression start (Learning objectives below)

DAY 3

Introduction to Classification

- Review day 2
- Introduction to Classification
- Ensemble-based methods

DAY 4

Introduction to Neural Nets & Metis

- Classification Metrics
- Neural Net Overview

DAY 5

Unsupervised Learning

- Introduction to Unsupervised Learning
- Clustering
- Feature engineering for clustering
- Pairing supervised and unsupervised learning

COURSE DELIVERY

Metis Corporate Training offers in person, as well as remote instruction via our Live Online technology, to teams of 10 or more. We are able to blend these capabilities to reach your entire team, even if they're not all in one place.

For more information, visit:

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