Introduction to Machine Learning

Duration:

- 3 days

Detailed course outline:

Introduction

- Python for Machine Learning

Regression

- Introduction to Regression
- Simple Linear Regression
- Model Evaluation in Regression Models
- Evaluation Metrics in Regression Models
- Multiple Linear Regression
- Non-Linear Regression

Classification

- Introduction to Classification
- K-Nearest Neighbours
- Evaluation Metrics in Classification
- Introduction to Decision Trees
- Building Decision Trees
- Intro to Logistic Regression
- Logistic regression vs Linear regression

- Logistic Regression Training
- Support Vector Machine

Introduction to TensorFlow

- TensorFlow API Hierarchy
- Components of TensorFlow: Tensors and Variables

Introduction to Pytorch

- Quickstart
- Tensors
- Datasets and DataLoaders
- Transforms
- Build Model
- Automatic Differentiation
- Optimization Loop
- Save, Load and Use Model

An introduction to Convolutional Neural Networks

- Common uses for CNNs
- Interesting uses for CNNs other than image processing
- Convolutional kernels
- Creating a feature map from a convolutional kernel
- Padding
- Creating multiple channels/feature maps with multiple kernels
- RGB 3 channel input
- Strides
- Many kernels
- Why CNNs are so powerful
- Universal approximation theorem
- Seq2seq
- Seq2seq Model with Attention