

4. Learners Echo Workshop

1. Invitation



CODING CLUB SREC.

Learner's Echo Machine Learning Workshop on 28th& 29th June' 19.

Organized by SREC Coding Club

Coordinator:

Mr. P Pramod Kumar,
Senior Assistant Professor,
Department of CSE.

Resource Persons:

- M.Saiteja – IV Year CSE
- K.Sriram – IV Year CSE
- Deva Kushal – IV Year ECE
- P.Shashank – IV Year CSE
- J.Krishna Teja – III Year CSE

About Machine Learning

Machine learning models provide a fast and flexible way to build predictive models of the world, and are used for tasks ranging from predicting supply chain availability to optimizing the placement of advertisements. The tools discussed in this class are fast becoming industry standards in bioscience, finance, geology, manufacturing, and marketing.

The Machine Learning Mastery Workshop is 3 days of individualized coaching in the use of scikit-learn to predict country-specific risk of famine using satellite imagery, intelligence reports, and historical climate records. Students will return to work the same week ready to apply advanced learning algorithms to business cases in their own industries.

Overview

The course begins with a conceptual introduction to machine learning algorithms. This is followed by an introduction to the implementation of estimators in scikit-learn and best practices for using them.

The rest of the course is focused around specific feature sources, and for each progresses through a short introductory lecture followed by three exercises of progressive difficulty, starting with standard and well-behaved cases, and ending with real-world and realistically problematic case studies.

Throughout, the focus of the course is on building deep conceptual understanding, exhaustive practical experience, and covering common mistakes and edge cases. Intermingled in the machine learning material will be short discussions of helpful and diagnostic data visualizations.

Prerequisites

Machine Learning Crash Course does not presume or require any prior knowledge in machine learning. However, to understand the concepts presented and complete the exercises, we recommend that students meet the following prerequisites:

•**Mastery of intro-level algebra.** You should be comfortable with variables and coefficients, linear equations, graphs of functions, and histograms. (Familiarity with more advanced math concepts such as logarithms and derivatives is helpful, but not required.)

•**Proficiency in programming basics, and some experience coding in Python.** Programming exercises in Machine Learning Crash Course are coded in Python using TensorFlow. No prior experience with Tensor Flow is required, but you should feel comfortable reading and writing Python code that contains basic programming constructs, such as function definitions / invocations, lists and dicts, loops, and conditional expressions.

At the end of this workshop, participants will be able to:

- Leverage the full power of the scikit-learn API
- Use specific regression, classification, and clustering models skillfully to model their data and solve problems
- Denoise and segment imaging data with scikit-image
- Construct OODA loops with selection and prediction pipelines
- Efficiently search over hyper parameter spaces
- Extract lexical and semantic information from natural language data
- Engineer numeric features to maximize predictive power
- Visualize interactions and non-linear distributions of data
- Validate models with the appropriate success metrics
- Troubleshoot common issues like unbalanced labels and high dimensionality data
- Build deep insight by retrieving model parameters

Key Concepts and Tools

In this Machine Learning workshop we discuss and applies the following concepts and tools.

- Introduction to Machine Learning.
- Introduction to Neural Networks.
- Introduction to scikit-learn API
- Hands-on session on PYTHON programming

Workshop Schedule:

Day	Morning session	Afternoon session
28-06-2019 (Friday)	<ul style="list-style-type: none">• Introduction to Machine Learning• Fundamentals of Python for Machine Learning• Data Pre-processing	<ul style="list-style-type: none">• Introduction to Regression• Working on data sets with Linear and Logistic Regression using Sci-Kit Learn
29-06-2019 (Saturday)	<ul style="list-style-type: none">• Introduction to Neural Networks• Types of Neural Networks and discussion• Working on Data sets with mobile-net or MLP Classifier	<ul style="list-style-type: none">• Exercise on a data sets• Future scope of Machine Learning and AI• Closing Ceremony

Venue:

- JKC Lab, 2nd Floor, 1st Block.

Timings:

- Session1 : 9:45 am to 11:15 am
- Break : 11:15 am to 11:30 am
- Session 2 : 11:30 am to 12:45 pm
- Lunch Break : 12:45 pm to 1:40 pm
- Session3 : 1:40 pm to 2:40 pm
- Break : 2:40 pm to 2:50 pm
- Session4 : 2:50pm to 4:00 pm