VALUE ADDED COURSES

INDEX

SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (AUTONOMOUS)

CHINA AMIRAM. (P.O): BHIMAVARAM: W.G.DT., A.P., INDIA: PIN: 534 202

"INTRODUCTION TO MACHINE LEARNING USING PYTHON"

Organised by
Department of Mechanical Engineering

Resource Persons
Dr. K. Sita Rama raju, Associate Professor,
Mechanical Department.
Sri. I. Ajit Kumar, Assistant Professor,
Mechanical Department.

Participants
¾ Mechanical Students
Venue: Mechanical Department Seminar Hall
Duration:09-07-2016 to 09-10-2016 (2 hours per week i.e 1:45 to 3:25PM)

For registration:
Contact: Sri. I. Ajit Kumar, Assistant Professor,
Mechanical Department

SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)
CHINNA AMIRAM:: BHIMAVARAM-534204
DEPARTMENT OF MECHANICAL ENGINEERING

Dt: 04-07-2016

Circular

The course-Introduction to Machine learning using Python (IMLP) will be offered to students of mechanical engineering from 09-07-2016 onwards. This course will highly help the students to gain knowledge on python programming language and understand basics of machine learning. Learning this course will enhance the placement opportunities for the students.

Course Contents:

Introduction to Python: About Python, History, Features of Python, Variables, Data Types, Operations, Operators, FOR loops, IF loops, WHILE loops, Python Classes, and Python Methods

NumPy Arrays, Pandas and Matplotlib: NumPy arrays, Array creation, Indexing and slicing, Lists, Tuples, Dictionary, Sets, Data Frame: Reading and Writing a Data Frame, Creating and Extracting Features, Conversion of Categorical Data to Numerical Data, Merging Data Frames.
Data Visualization: Use of Matplotlib Library for Various Plots like Scatter, Bar, Histogram plots, Introduce Various Correlation Techniques.

Introduction to Machine Learning: Introduction to Artificial Intelligence (AI), Machine Learning and Deep Learning, Types of Machine Learning: Supervised, unsupervised & Reinforced Learning, Machine Learning Pipeline: Loading, Pre-processing, Normalizing of Data, Train and Test Split, Evaluation methods.
Supervised Algorithms: Regression- Simple Linear, Multiple Linear, Polynomial, Logarithmic Quadratic, Exponential, Sigmoidal Regression. Classification: Decision Tree, K-Nearest Neighbour, Logistic and Support Vector Machine classifiers. Unsupervised Learning: K-means Clustering, Hierarchical Clustering and DBSCAN

Building methods: Building of best machine learning model for 4 different real data

Course Outcomes:

- Understand fundamentals of python programming
- Acquire in-sights into Numpy, Pandas & Matplotlib
- Understand the importance of machine learning
- Differentiate supervised & unsupervised learning

PRINCIPAL
S.R.K.R. Engg. College
BHIMAVARAM-534 204

Professor & Head
Dept. of Mechanical Engg.
S.R.K.R. Engineering College
CHINA AMIRAM (P.O.)
BHIMAVARAM-534 204.

Reference Books:

1. Phuong Vo.T.H , Martin C, Getting Started with Python Data Analysis, Packt Publishing Ltd.
2. Charles Severance, Python for Everybody: Exploring Data in Python.
3. Oliver Theobald, Machine Learning with Python: A Practical Beginner's Guide, Scatterplot Press
4. Peter Harrington; Machine Learning in Action, Manning Publications Co.

Course schedule: Saturday 1:45-3:25 PM

1.
2.
3.

Course faculty

Head of the Department

Professor & Head
Dept. of Mechanical Engg.
S.R.K.R. Engineering College
CHINA AMIRAM (P.O.)
BHIMAVARAM-534 204.

Dept. of Mechanical * BHIMAVARAM 534 204 * S.R.K.R. Engg. College

CC to:

Department Notice board

PRINCIPAL
S.R.K.R. Engg. College
BHIMAVARAM-534 204