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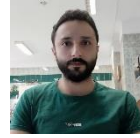**Phone:** (+98) 912 779 70 36

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Workshop Information:

Site: www.icrom.ir   **Date:** Thursday, November 19, 2020   **Time:** 8:30 – 11:00   **Language:** English

Workshop Description:

This workshop includes the basics of machine learning using Python. First, the purpose of machine learning and where it applies to the real world is discussed. Then, the audiences will get a general overview of machine learning topics like supervised vs unsupervised learning, and machine learning algorithms. Reinforcement learning which is a semi-supervised technique will also be introduced. Finally, some real-life examples like cancer detection, recommendation systems, handwritten digit classification, house price prediction, inverted pendulum, and grid world are reviewed.

Syllabus

- Introduction to machine learning
  - Application of machine learning in different fields like health care, banking, telecommunication, etc. are discussed. The audience will get a general overview of machine learning topics like supervised vs unsupervised learning and usage of each algorithm.

- Regression
  - After a brief intro to regression, the audience will learn about Linear, Non-linear, Simple, and Multiple regression.

- Classification
  - Some classification techniques like KNN, Decision Trees, and SVM are introduced, then pros and cons of each method are discussed.

- Clustering
  - Clustering will be introduced and Partition based clustering approach will be discussed.

- Recommender systems
  - The main idea behind recommender systems and content-based types of recommendation engine, will be reviewed.

- Reinforcement Learning
  - Application and impact of reinforcement learning on robotics and then basic concepts of RL will be discussed. Finally, a simple example will be implemented.