



MACHINE LEARNING, ML

PROF. CARL GUSTAF JANSSON

School of Electrical Engineering and Computer Science
KTH, The Royal Institute Of Technology

TYPE OF COURSE : Rerun | Elective | PG

COURSE DURATION : 8 weeks (15 Feb' 21 - 9 Apr' 21)

EXAM DATE : 25 Apr 2021

PRE-REQUISITES : Relevant applied math and statistics, core computer science

INTENDED AUDIENCE : Interested students

INDUSTRIES APPLICABLE TO : Broad industrial interest at present, i.e. for autonomous vehicles, robots, intelligent assistants and general datamining

COURSE OUTLINE :

The scientific discipline of Machine Learning focuses on developing algorithms to find patterns or make predictions from empirical data. It is a classical sub-discipline within Artificial Intelligence (AI). The discipline is increasingly used by many professions and industries to optimize processes and implement adaptive systems. The course places machine learning in its context within AI and gives an introduction to the most important core techniques such as decision tree based inductive learning, inductive logic programming, reinforcement learning and deep learning through decision trees.

ABOUT INSTRUCTOR :

Carl Gustaf Jansson is tenured Professor in Artificial Intelligence at the School of Electrical Engineering and Computer Science, KTH Royal Institute of Technology, Stockholm, Sweden. His research contributions are mostly in artificial intelligence, in particular Knowledge Representation and Machine Learning. Particular research interests are intelligent interfaces and ubiquitous computing.

COURSE PLAN :

Week 1: Introduction to the Machine Learning course

Week 2: Characterization of Learning Problems

Week 3: Forms of Representation

Week 4: Inductive Learning based on Symbolic Representations and Weak Theories

Week 5: Learning enabled by Prior Theories

Week 6: Machine Learning based Artificial Neural Networks

Week 7: Tools and Resources + Cognitive Science influences

Week 8: Examples, demos and exam preparations