

CSE 4553
Machine Learning
Lecture 0: Course Introduction

Winter 2022

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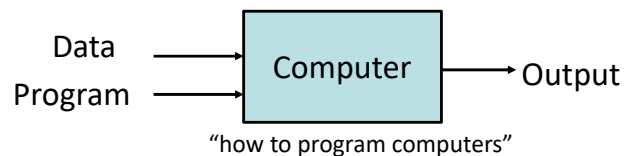
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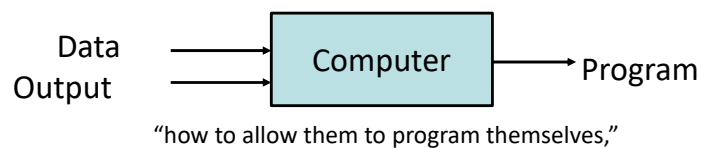
Introduction

• Conventional programming Vs Machine Learning

– Conventional Programming



– Machine Learning



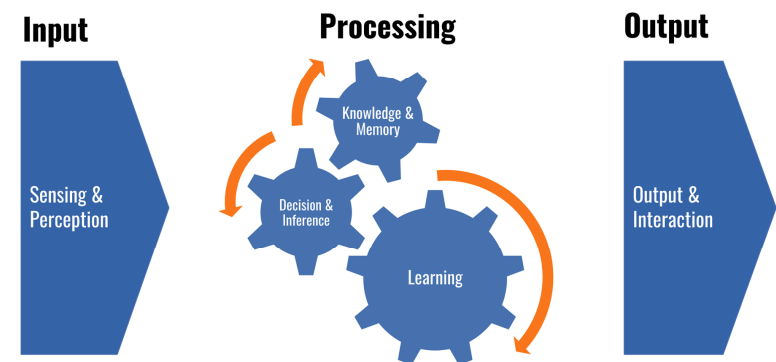
– Example: Sentiment Analysis

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Human learning VS Machine learning

Human Intelligence



INTERSET

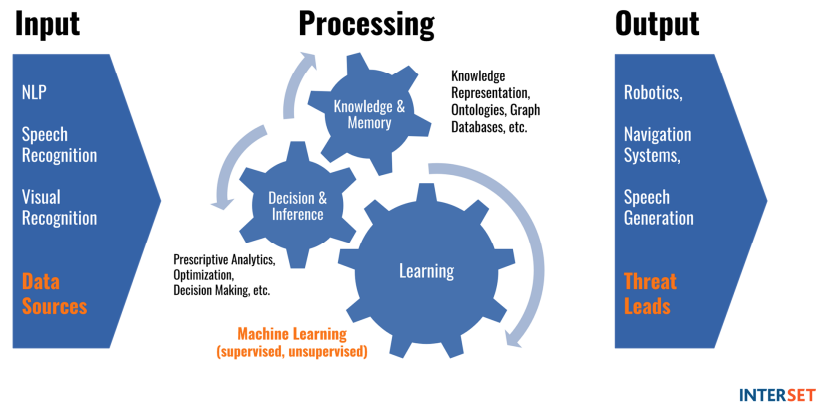
<https://interset.com/2018/02/20/ai-101-part-1-machine-learning/>

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Human learning VS Machine learning

Artificial Intelligence



<https://interaset.com/2018/02/20/ai-101-part-1-machine-learning/>

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Machine learning in a nutshell

- Machine learning is programming computers to optimize a performance criterion using example data or past experience.
- We have a model defined up to some parameters, and learning is the execution of a computer program to optimize the parameters of the model using the training data or past experience.
- The model may be predictive to make predictions in the future, or descriptive to gain knowledge from data, or both

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Course objective

- To learn the basic machine learning techniques, both from a theoretical and practical perspective
- To practice implementing and using these techniques for simple problems
- To understand the advantages/disadvantages of machine learning algorithms and how they relate to each other
- To get an idea on machine learning researches and potential applications.

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Text Books

- **Text books:**
 - TB1: *Ethem Alpaydin, Introduction to Machine Learning, Second Edition, 2010.*
 - TB2: *Bishop, C. (2006). Pattern Recognition and Machine Learning. Berlin: Springer-Verlag.*
- **Reference books:**
 - RB1: *Mitchell, T., Machine Learning, McGraw Hill, 1997*
 - RB2: *Introduction to Machine Learning by Alex Smola, 2010*

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Grading

▪ Class attendance	: 30
▪ Assignments/Quizzes	: 45
▪ Mid-semester Exam	: 75
▪ Semester-final Exam	: 150
<hr/>	
▪ Total	: 300

What about you?

- Remind me your name
- What do you expect from the course?
- What are some problems from everyday life that can be helped by machine learning?

classroom.google.com

- Classroom joining code:

67ot7p3

Machine Learning Research

- Conferences:
 - International Conference on Machine Learning (ICML)
 - ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)
 - Conference on Neural Information Processing Systems (NIPS)
 - Asian Conference on Machine Learning (ACML)
 - European Conference on Machine Learning (ECML)
- Journals:
 - IEEE Transactions on Knowledge and Data Engineering (TKDE)
 - Journal of Machine Learning Research (JMLR)
 - Journal of Artificial Intelligence Research (JAIR)

- Any Question?