



元智大學

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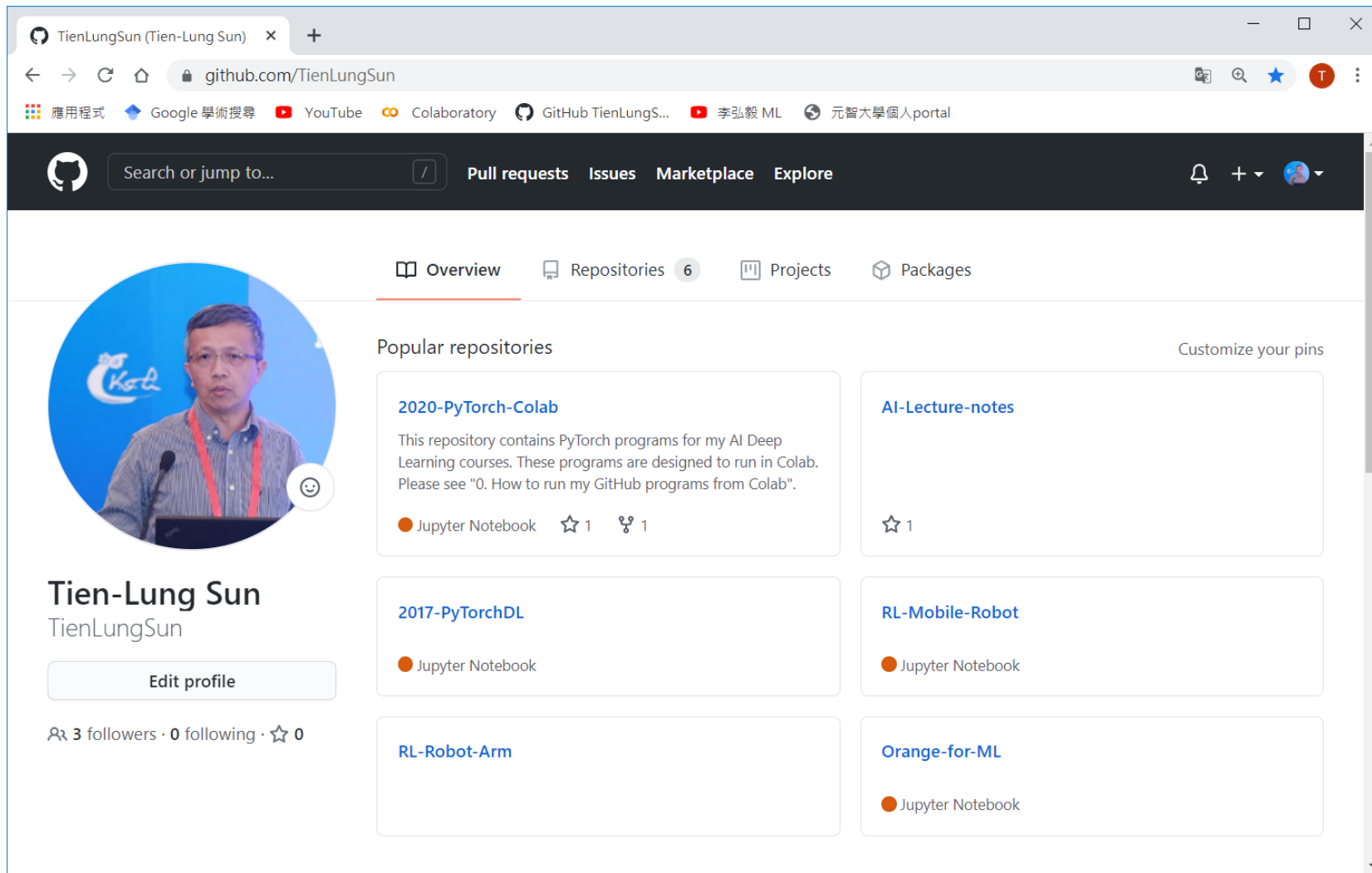


Introduction to Deep Learning – Concepts and PyTorch Development

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孫天龍 元智大學 工業工程與管理系 教授


Open source class materials at GitHub



<http://github.com/TienLungSun>

Acknowledgement



Machine Learning is so simple





Machine Learning (Hung-yi Lee, NTU)


36 videos • 1,837,804 views • Last updated on Feb 17, 2021


課程網頁: <http://speech.ee.ntu.edu.tw/~tlkagk/c...>


 Hung-yi Lee SUBSCRIBED 


1  **ML Lecture 0-1: Introduction of Machine Learning**
Hung-yi Lee
WATCHED 38:57


2  **ML Lecture 0-2: Why we need to learn machine learning?**
Hung-yi Lee
WATCHED 1:20

3  **ML Lecture 1: Regression - Case Study**
Hung-yi Lee
WATCHED 1:18:35

4  **ML Lecture 1: Regression - Demo**
Hung-yi Lee
WATCHED 6:53

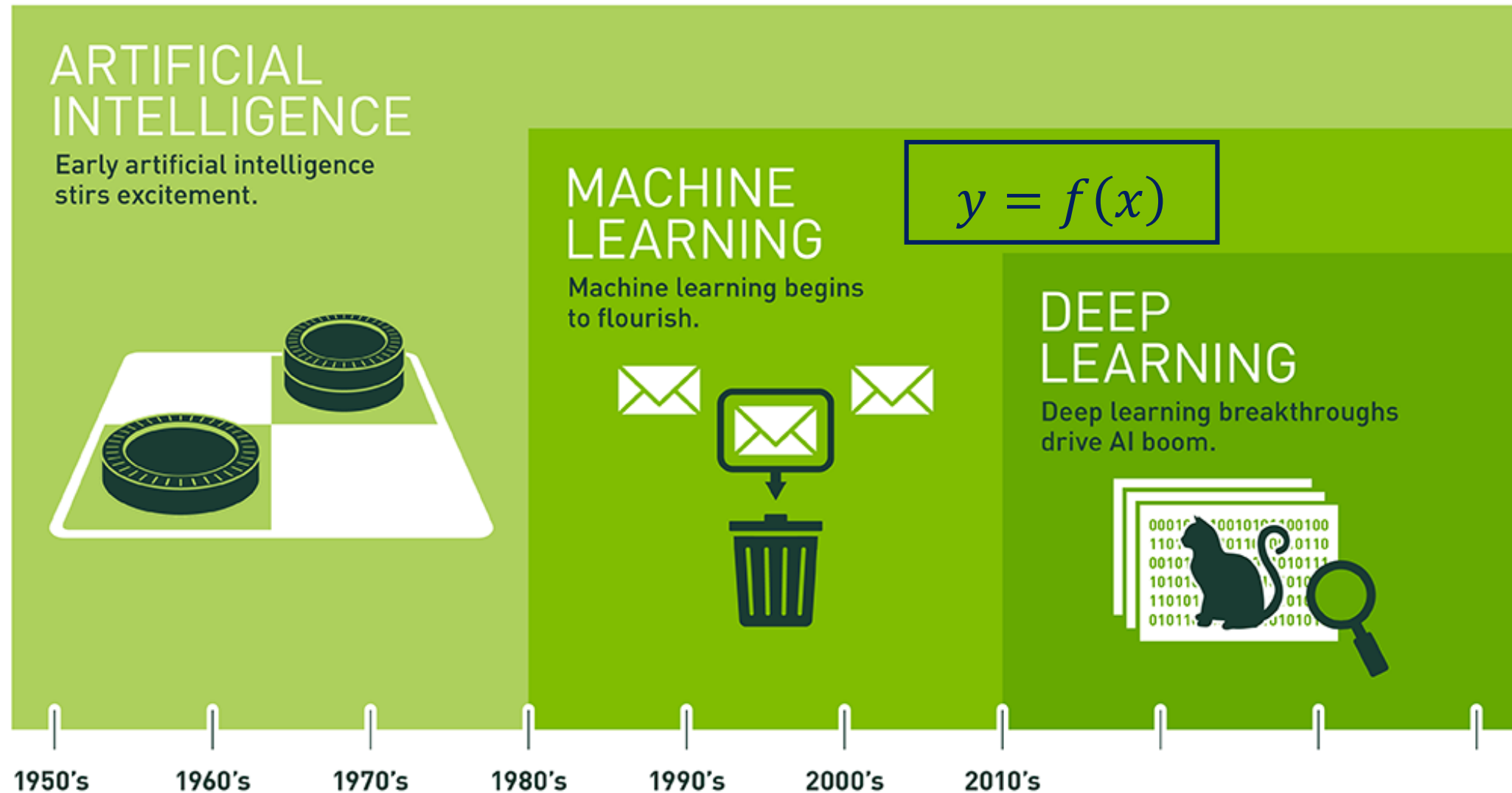
5  **ML Lecture 2: Where does the error come from?**
Hung-yi Lee
WATCHED 43:15

6  **ML Lecture 3-1: Gradient Descent**
Hung-yi Lee
WATCHED 1:01:52

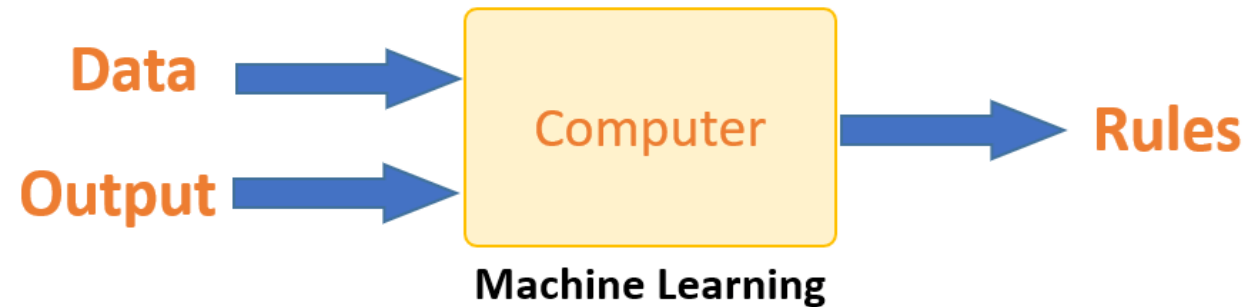
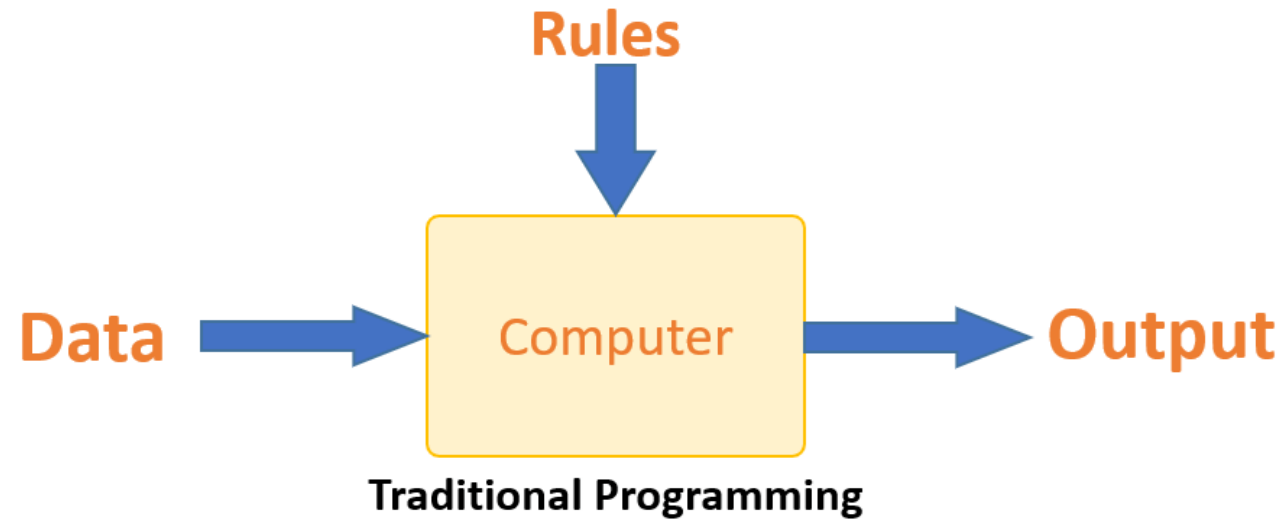
7  **ML Lecture 3-2: Gradient Descent (Demo by AOE)**
Hung-yi Lee

https://www.youtube.com/playlist?list=PLJV_el3uVTsPy9oCRY30oBPNLCo89yu49

AI, ML and DL

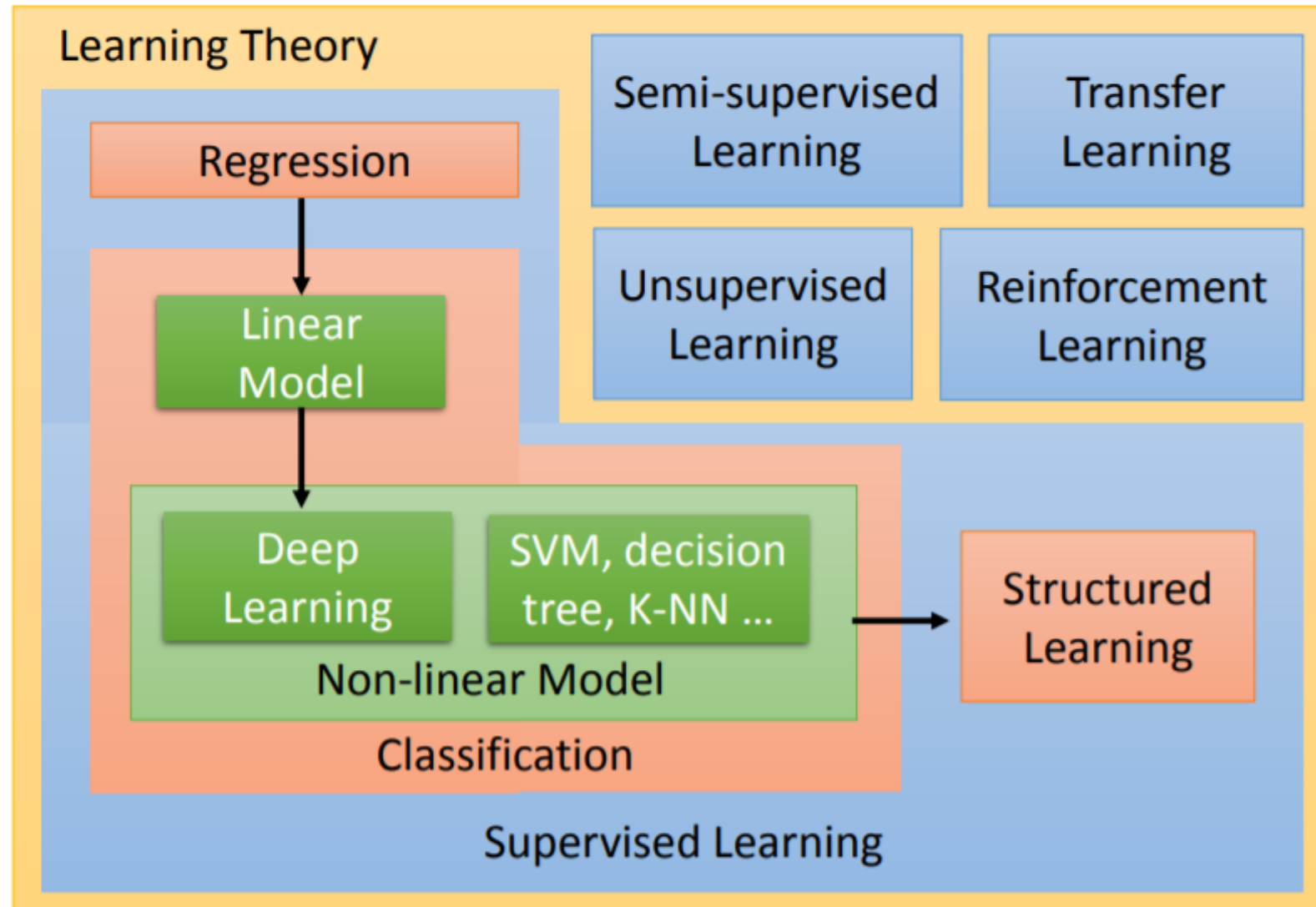


Traditional programming vs machine learning



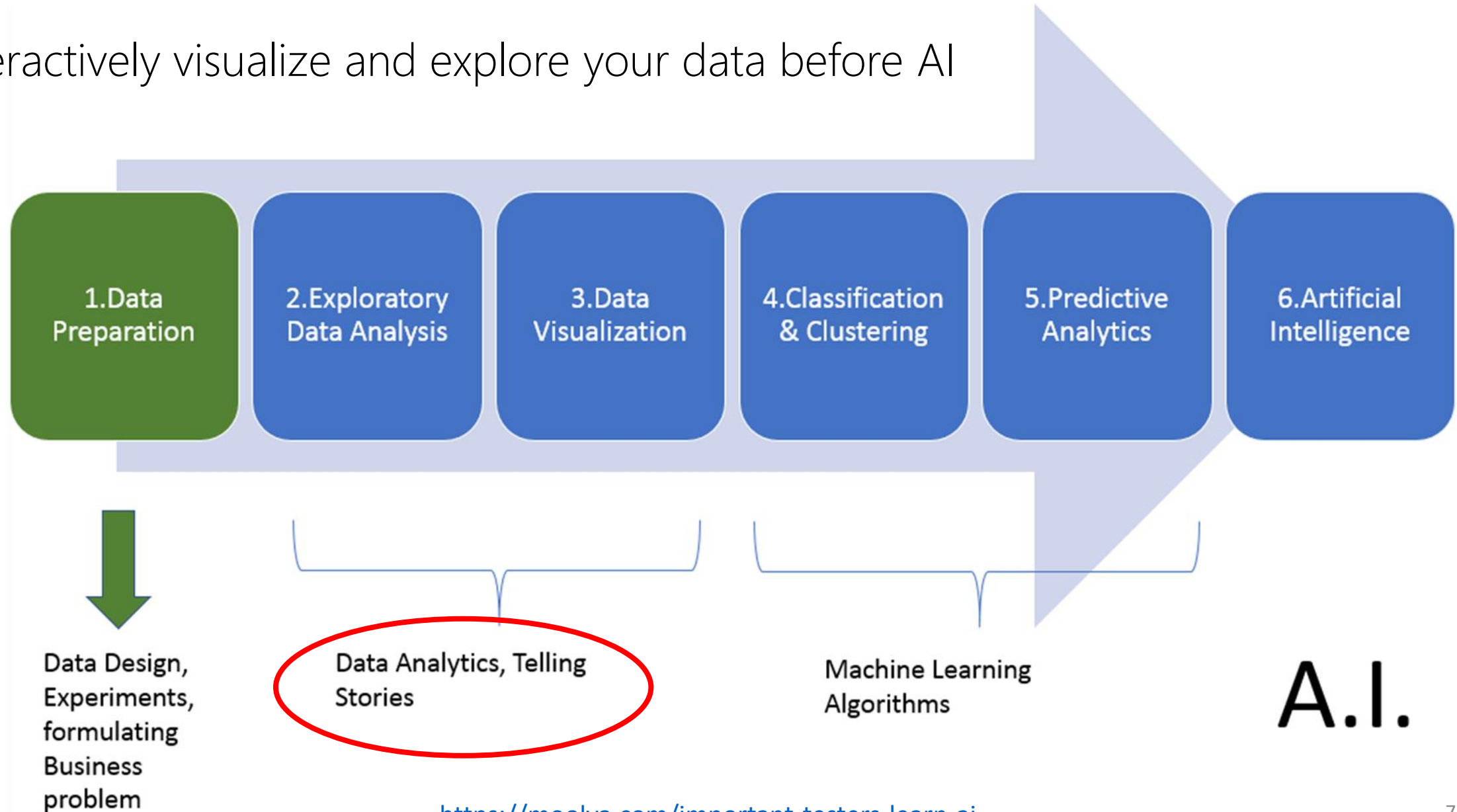
$$y = f(x)$$

ML strategies



Data visualization

Interactively visualize and explore your data before AI

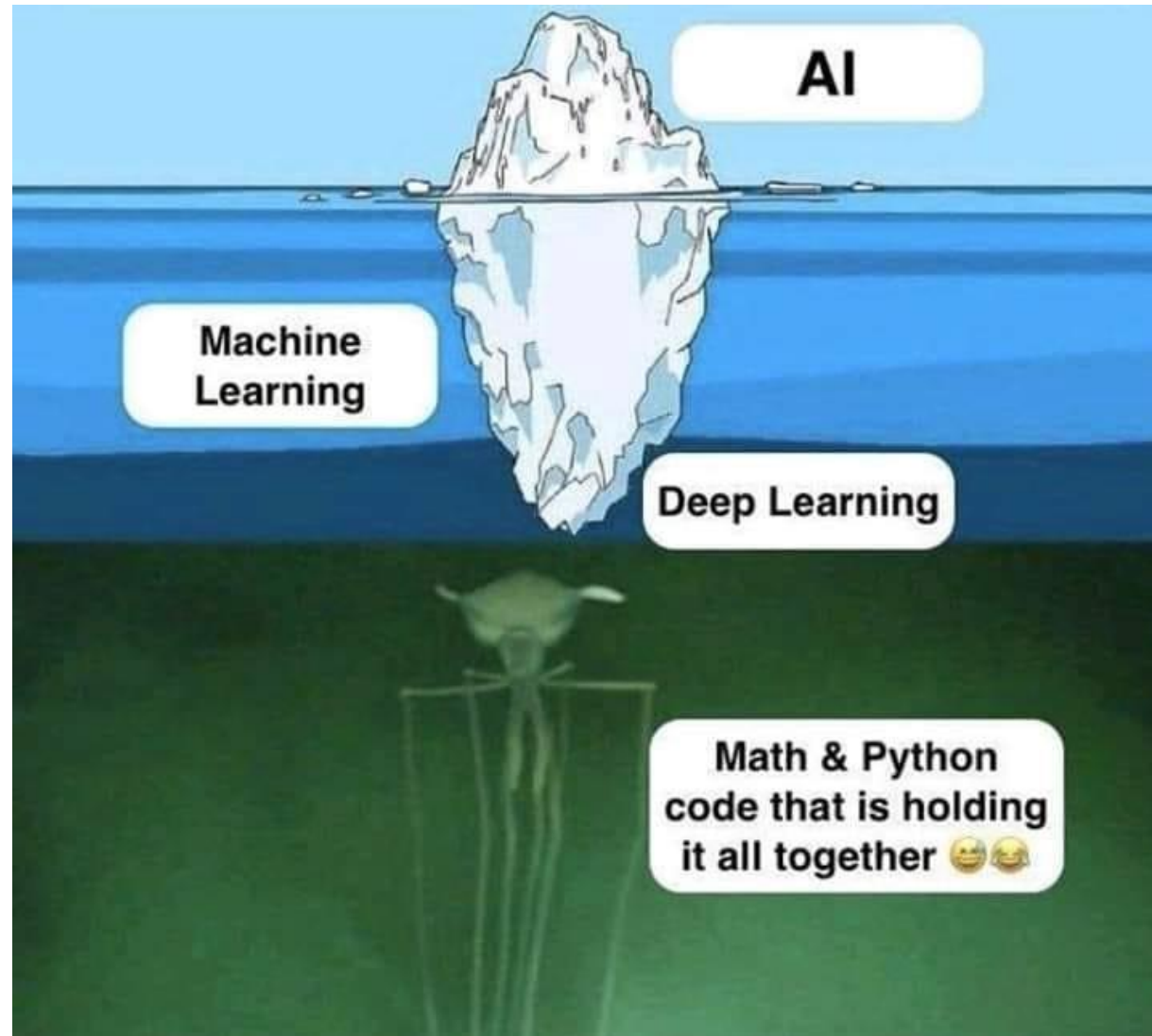


Data preparation for ML

- ...**Data Cleaning** to delete duplicate rows and redundant columns
- ...**Outlier Detection** and removal
- ...**Missing Value** identification and imputation
- ...**Feature Selection** with statistics and models
- ...**Feature Importance** with models
- ...**Data Transforms** to change data scales, types, and distributions
- ...**Dimensionality Reduction** to create low-dimensional projections

[Data Preparation for Machine Learning \(machinelearningmastery.com\)](https://machinelearningmastery.com)

Math + Python coding



Python development

