Machine Learning Techniques

Introduction

Dr. Ashish Tendulkar

IIT Madras

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In this course:

- Machine learning algorithms from a theoretical perspective.
- Implement them from scratch.

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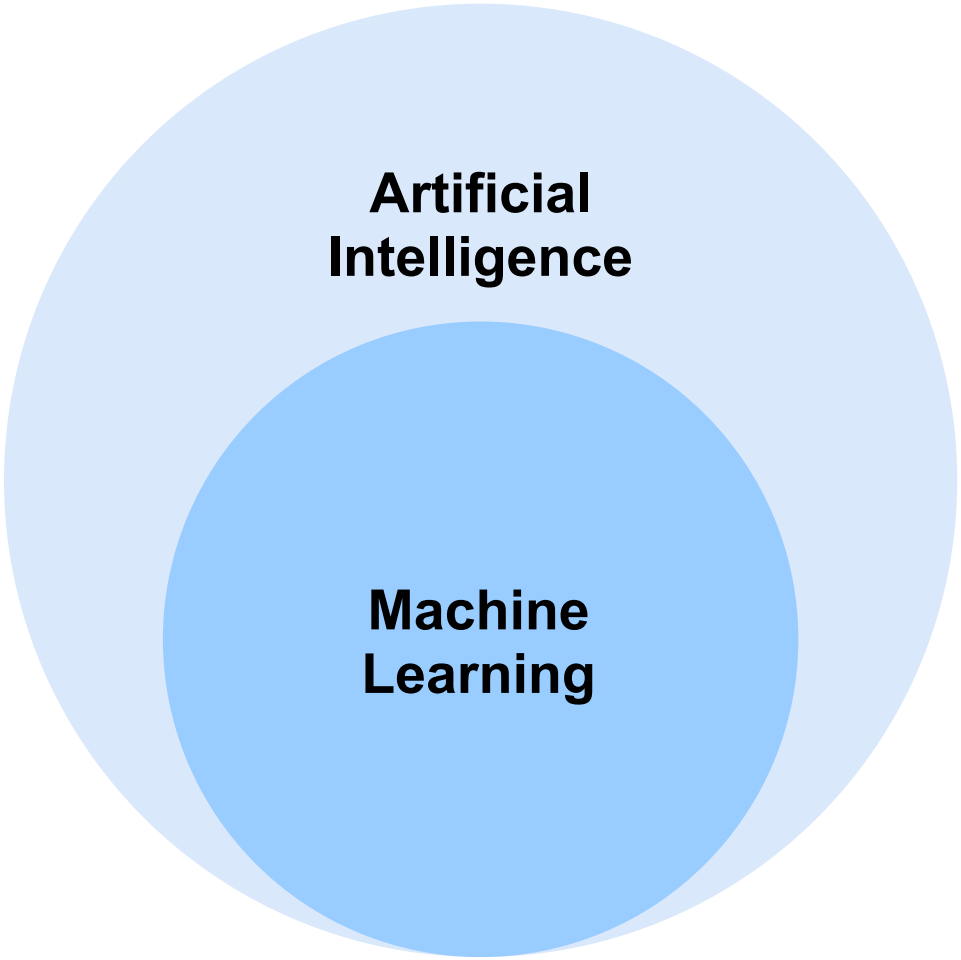
ML and AI



Topics of the course

In this course, we will study many popular ML algorithms like

- Linear Regression
- Logistic Regression
- Decision Trees
- Support Vector Machines
- Neural Networks
- K-means clustering

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Application domains of ML

ML is widely used in different domains like:

- Communication and search technologies.
- E-Commerce
- Finance
- Fashion
- Manufacturing
- Health Science
- Wildlife conservation.
- Agriculture

ML in daily life

- Search Engines

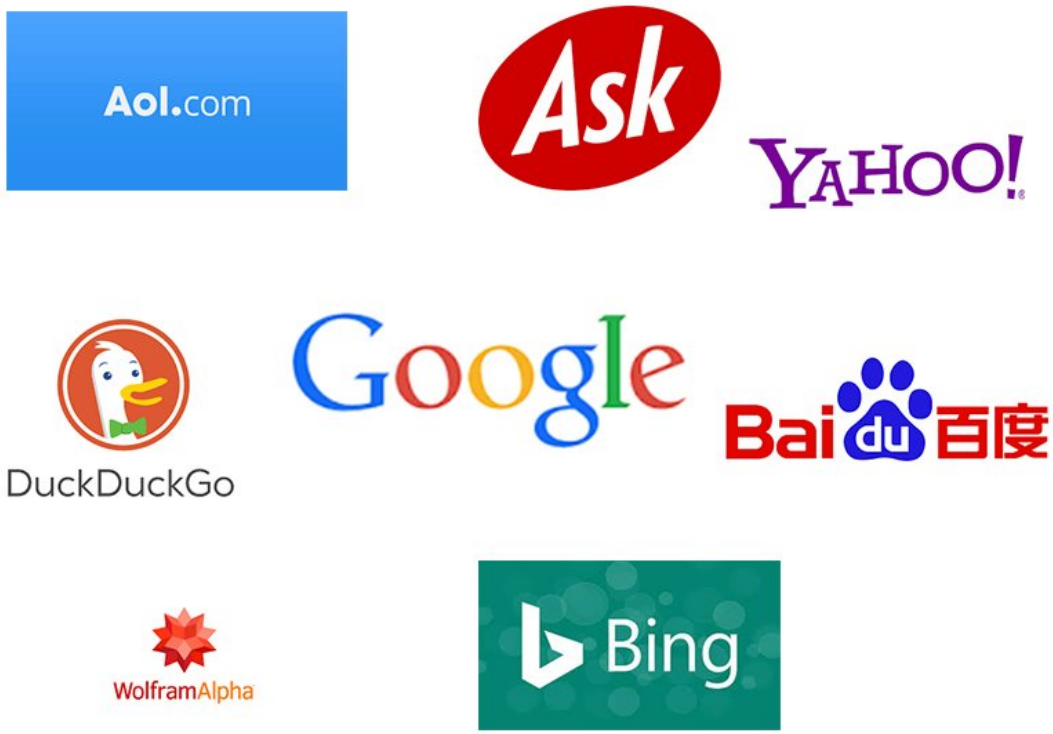


Image Source: https://wildstonesolution.com/top-search-engines/

ML in daily life

- Product recommendation

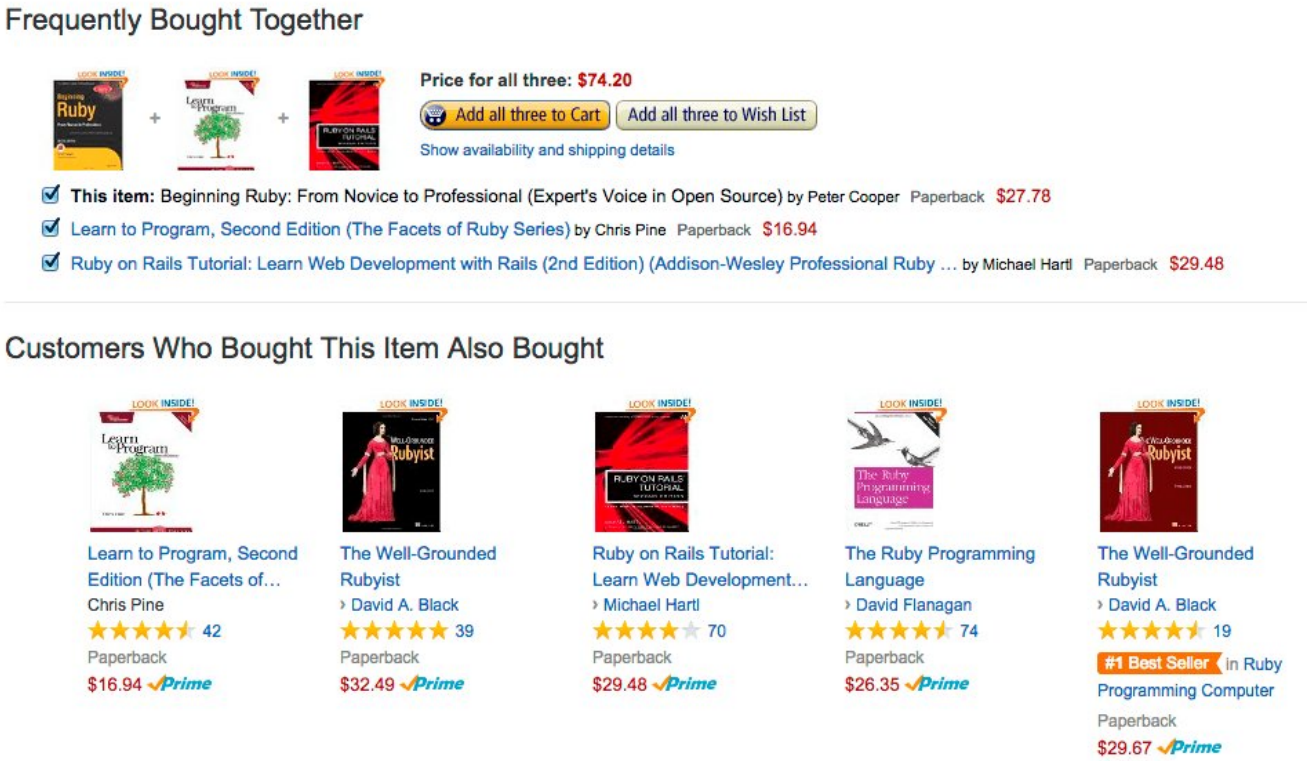


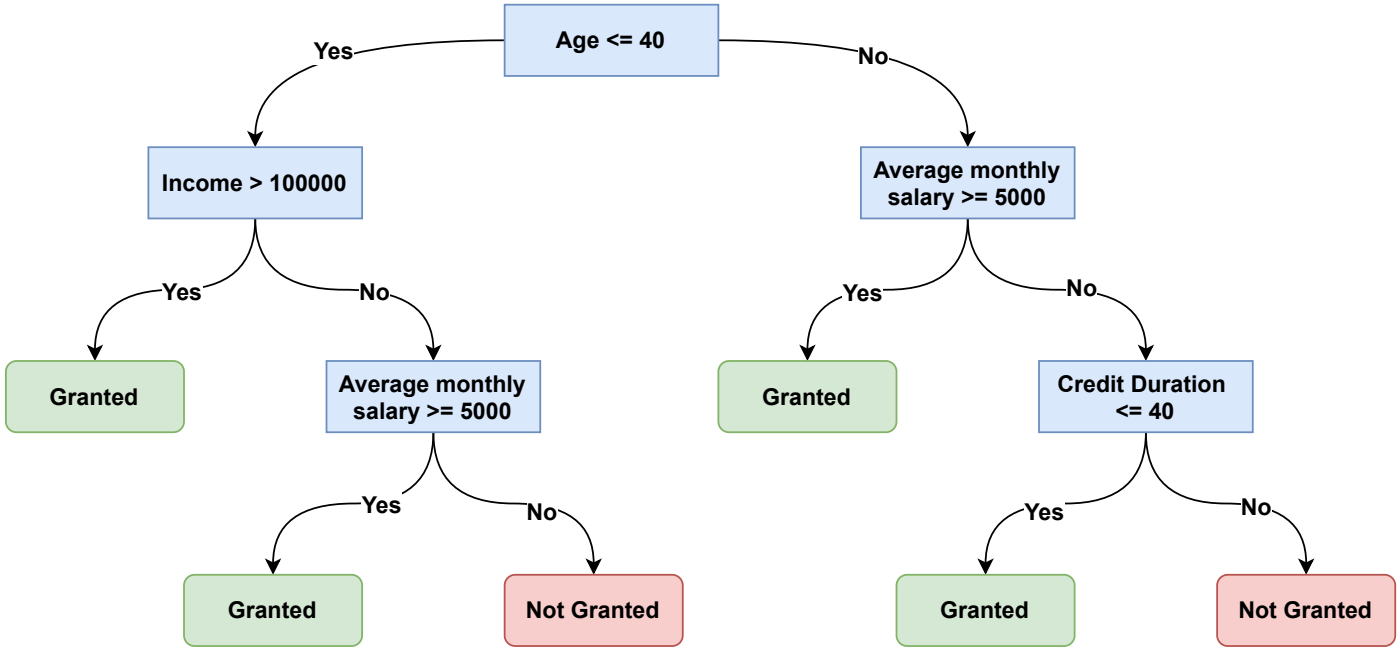
Image Source: Amazon.com

ML in daily life

- Social networks

Image Source:Whatmobile.net

- Loan approval



- Stock market prediction

Image Source: KDNuggets

- Fashion

Image Source: Tryon Jewellery

Image Source: Mirrar.com

- Manufacturing

Image Source: Forbes

- Protein folding

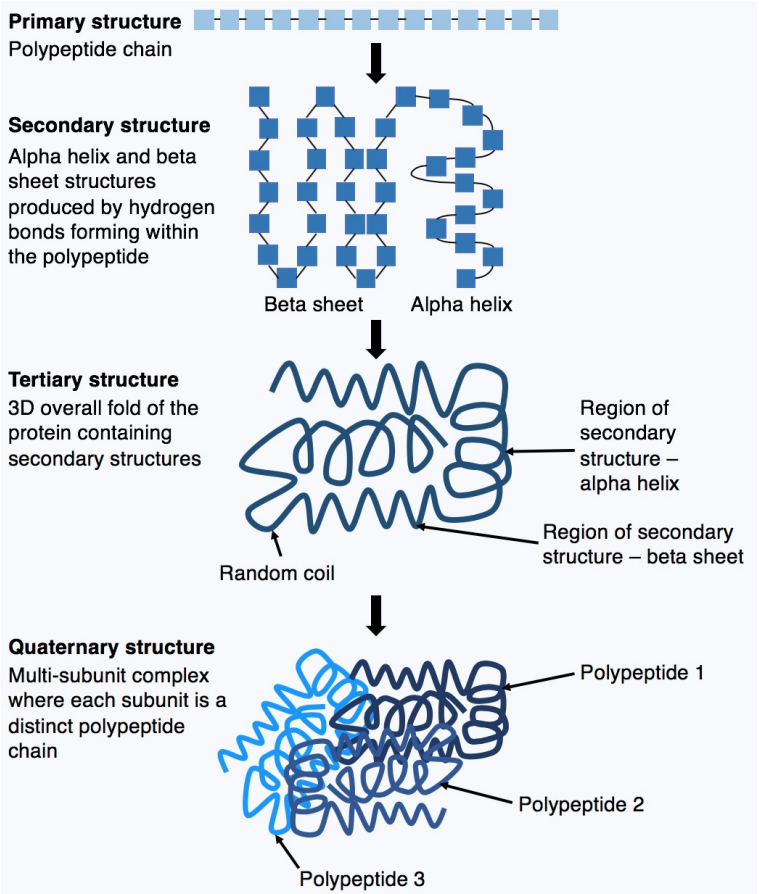


Image Source: Wikipedia Commons

- Treatment of diseases like retinopathy, diabetes etc.

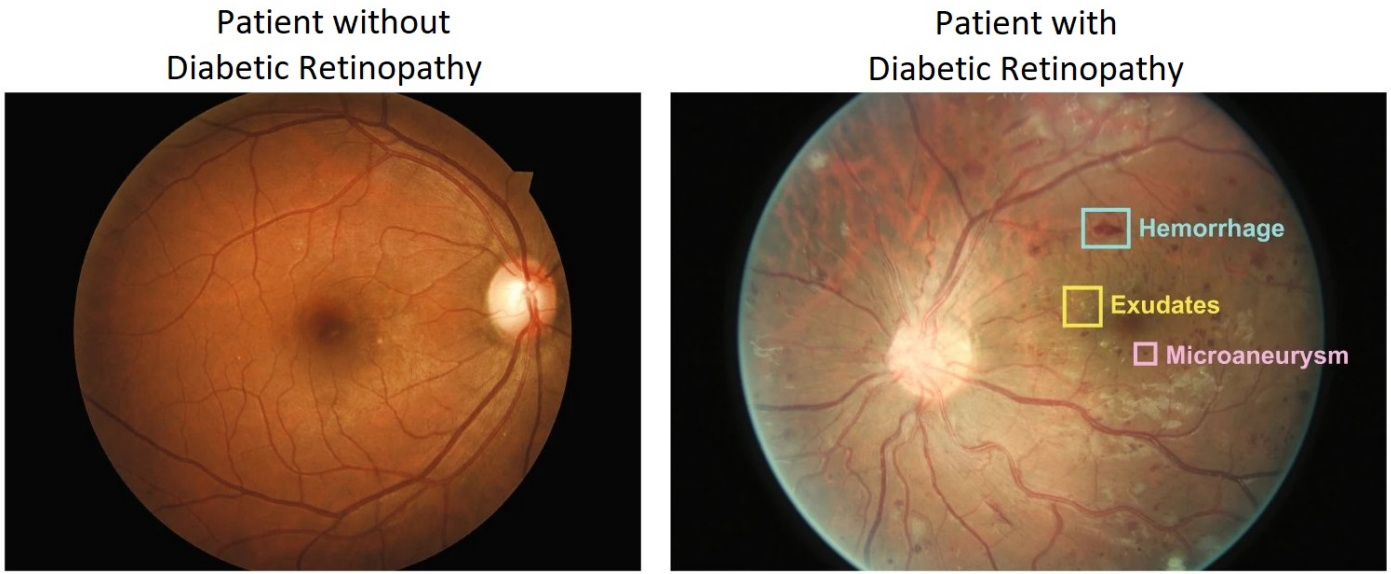


Image Source: Nature.com

- Detecting poachers and wild animals

Image Source: WildLabs

- Detecting illegal wood cutting from sound recording

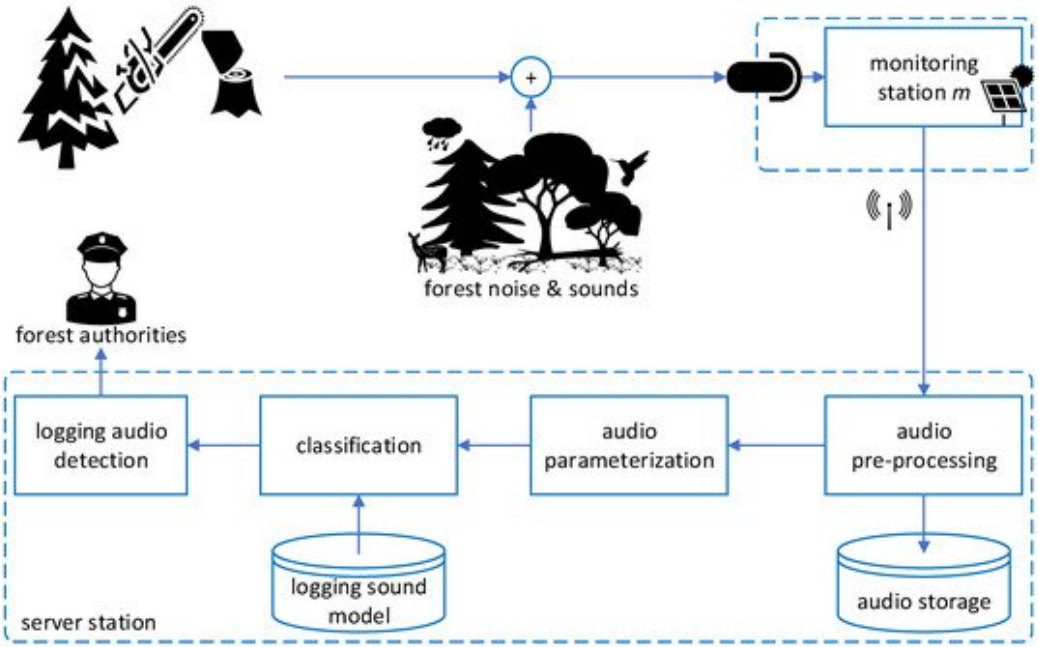


Image Source: MDPI

- Agriculture

Image Source: TheGeoSpatial.in

ML Modular Approach

1. Training Data
2. Model
3. Loss Function
4. Optimization Technique
5. Evaluation

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2. Mathematical aspect
3. Implementation

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- Practice questions and programming exercises after each video or module.
- Questionnaire at the end.

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