



10-hours of class on Introduction to Machine Learning Course

Welcome!



Global
AI Hub

Kutay Akalın
Data Scientist



Global
AI Hub

WHERE AI TALENT
MEETS OPPORTUNITIES



COMMUNITY

To become an active part of the local as well as the global AI community



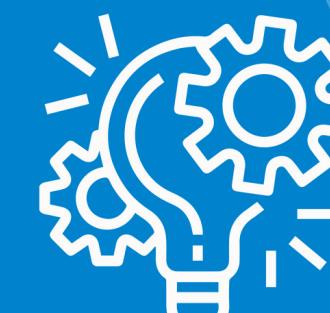
AI EDUCATION

To get access to high quality and well designed AI education



JOB OPPORTUNITIES

To get access to opportunities where you can apply your knowledge in AI projects and jobs



AI PROJECTS

To work on a project with a professional AI expert

About Me



6th lesson in GAIH Machine Learning Course



**BSc. Industrial Engineering, 17
MSc. Big Data Analytics, 21**



**Data Science & Analysis
Deep Learning
Optimization
Generative Models
AI & Art**



**Kutay Akalın
Data Scientist**



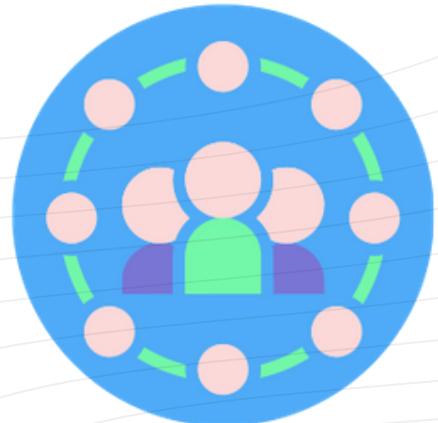
Global
AI Hub

About GAIH

Over 45,000 active members

Partnership with Google,
AWS, Microsoft and UiPath

Global reach across 46
countries



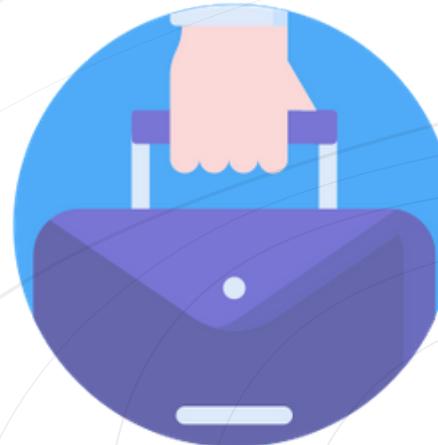
Community
Platform



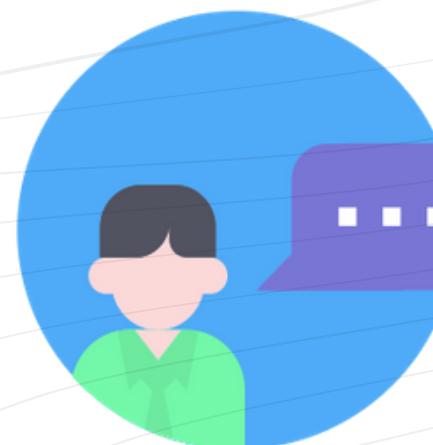
Online
Education



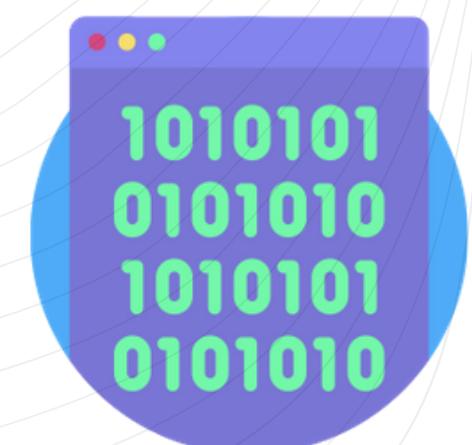
HR
Services



Job
Opportunities



Mentoring
Programs

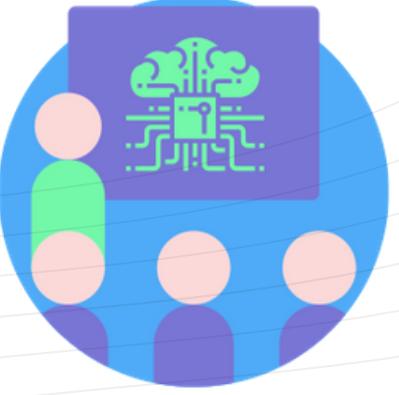


AI
Projects

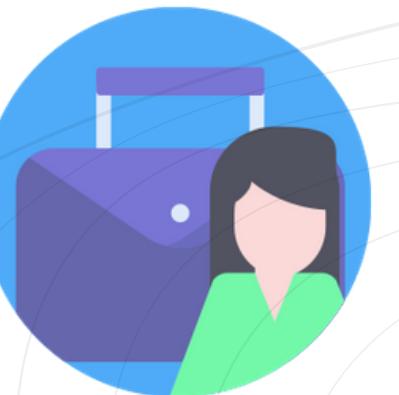


About GAIH

We want to gather all AI developers in the world together!



Educate 10M talents on AI, robotics, and data



1M new AI Job opportunities around the world



Educate and empower at least 5M women



Focus our educational reach across Asia, Africa, and South America.

About the Course

To earn a certificate, you should attend at least 3 days of our course.

We will have:

- 5 quizzes at the end of each session
- 3 homeworks
- Final project

Deadline for the homeworks and final project:

28/03/2021, 11:59pm Sunday (GMT+3)

Become a Top Learner!

- Become entitled to participate exclusive Top Learner Hub!
- Become a member of our Talent Program and find a job!
- Access exclusive events to increase your learning process!
- Become entitled to get direct mentorship! Your progress will be tracked by us.



How to become a Top Learner?

- You must take every quiz at the end of classes and get high grades.
- Participate the homeworks. Show us how well you've learned.
- Get great results from Final Project.
- Be active in our Community



About Course



**Global
AI Hub**

AI Community

Q&A, Course Material



Jupyter & Colab

Execution Platforms



GitHub

Homeworks, Project
and Course Material



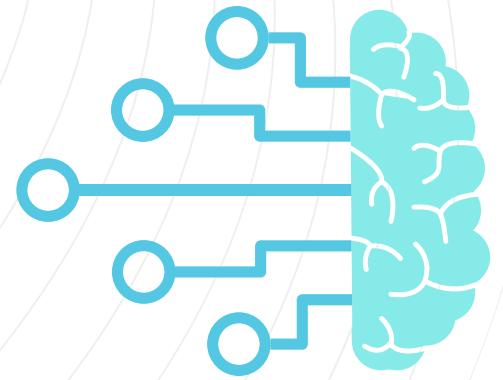


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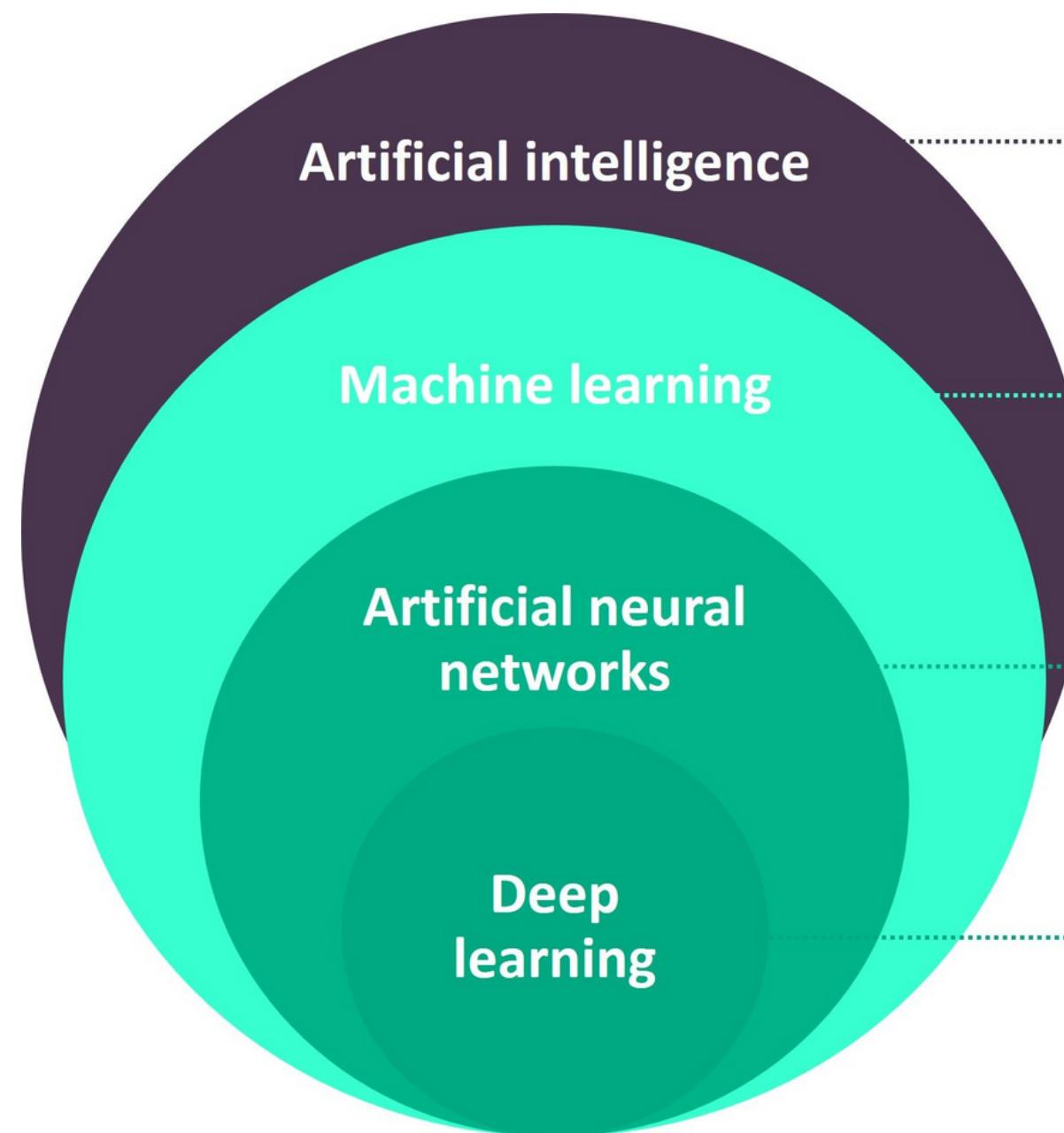
1. Introduction to Machine Learning
2. Linear Algebra Review
3. Probability Review
4. Data Preparation
5. Linear Regression
6. Logistic Regression
7. Regularization
8. Decision Tree
9. Unsupervised Learning

Introduction to ML

- What is ML?
- Supervised Learning
- Unsupervised Learning



What is ML



Artificial intelligence (AI)

Any techniques that enable machines to solve a task in a way like humans do

Machine learning (ML)

Algorithms that allow computers to learn from examples without being explicitly programmed

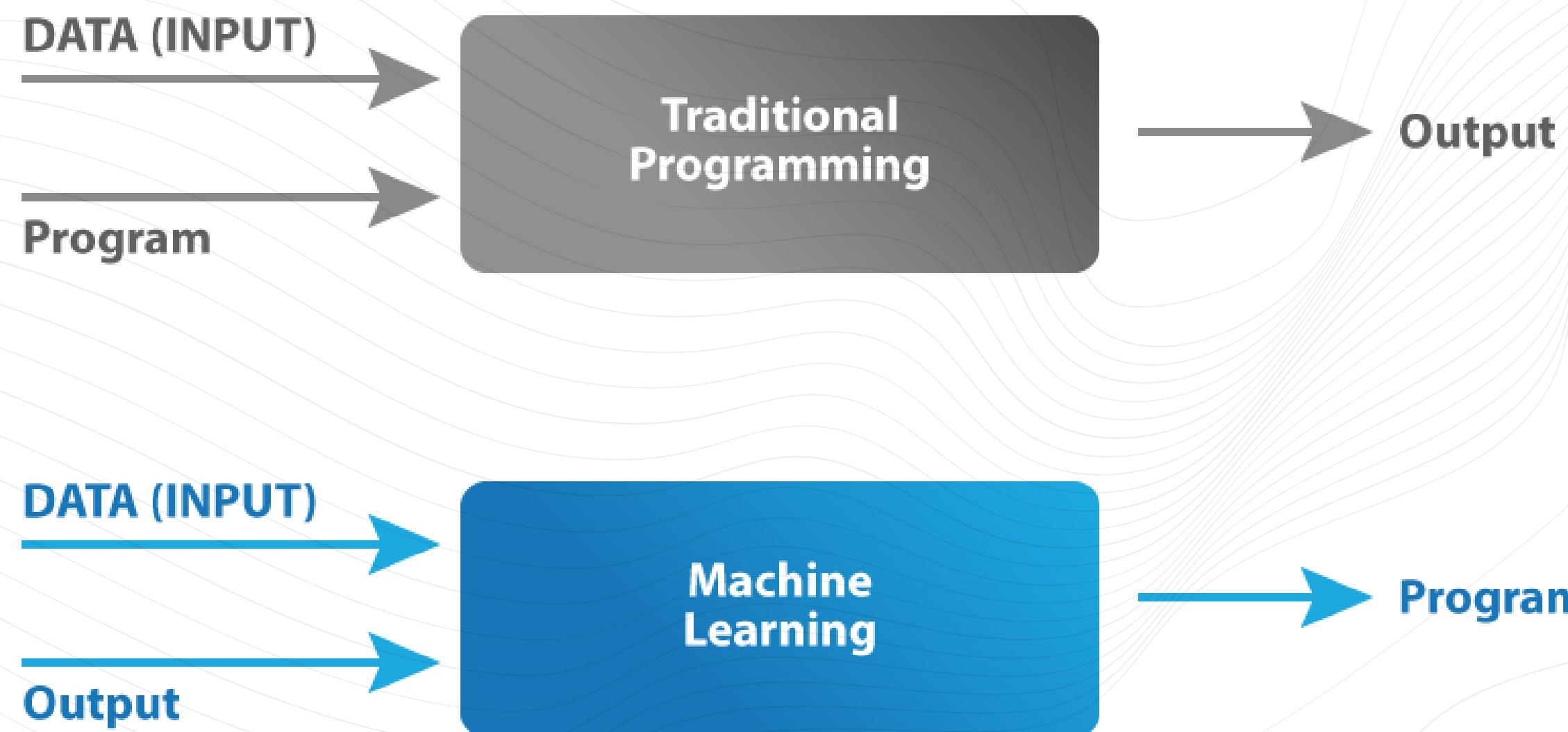
Artificial neural networks (ANN)

Brain-inspired machine learning models

Deep learning (DL)

A subset of ML which uses deep artificial neural networks as models and automatically builds a hierarchy of data representations

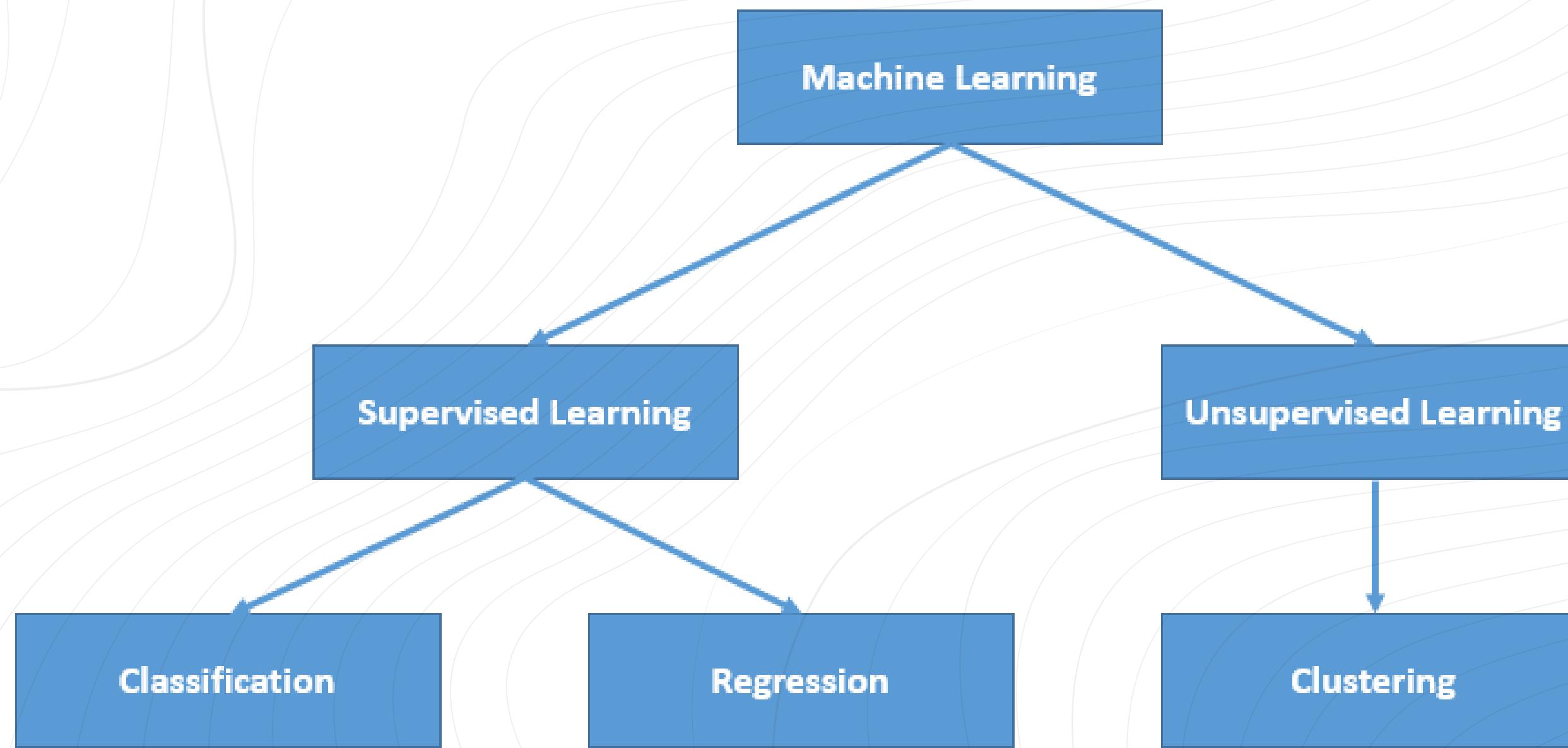
Traditional vs ML



When we use?

- In areas where dangerous for human
- In areas where human skills need to be automated
- In areas big data, repetitive tasks, large humanpower is needed

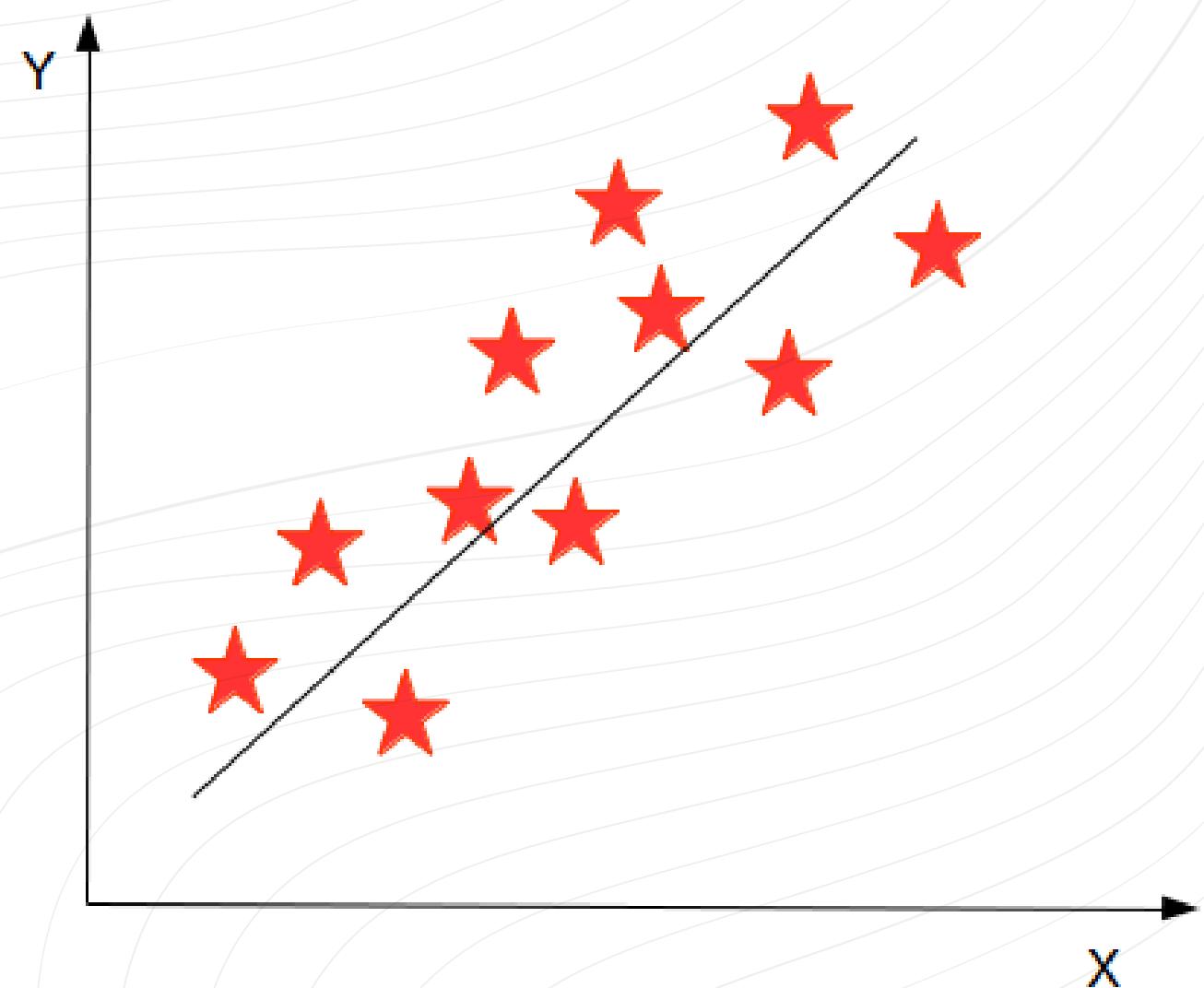
Subtopics of ML



Supervised Learning- Regression

Usage: When our label is numeric (continuous variable)

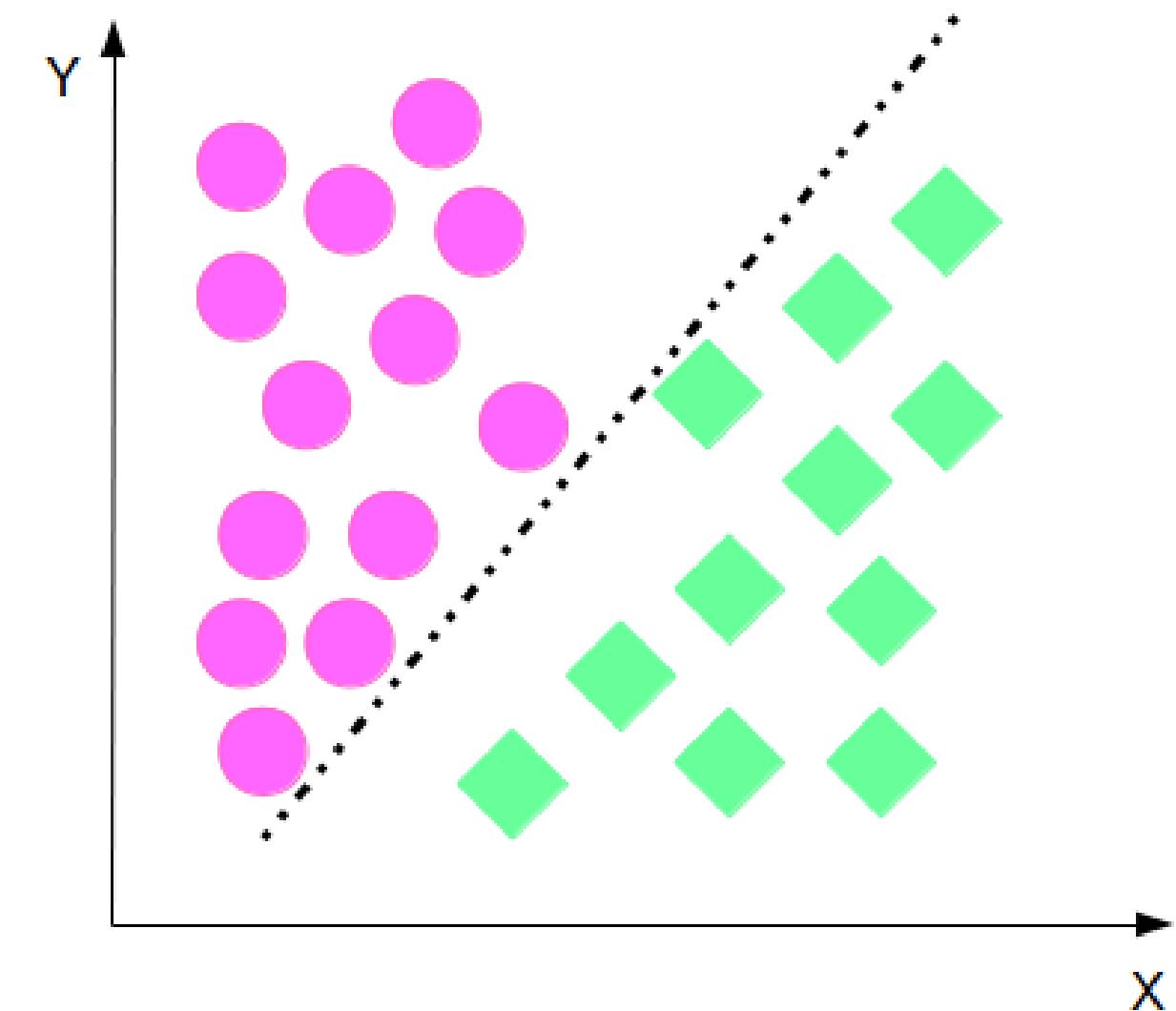
Ex: To estimate how a firm's ad spending affects its sales



Supervised Learning- Classification

Usage: When our label is categorical (discrete variable)

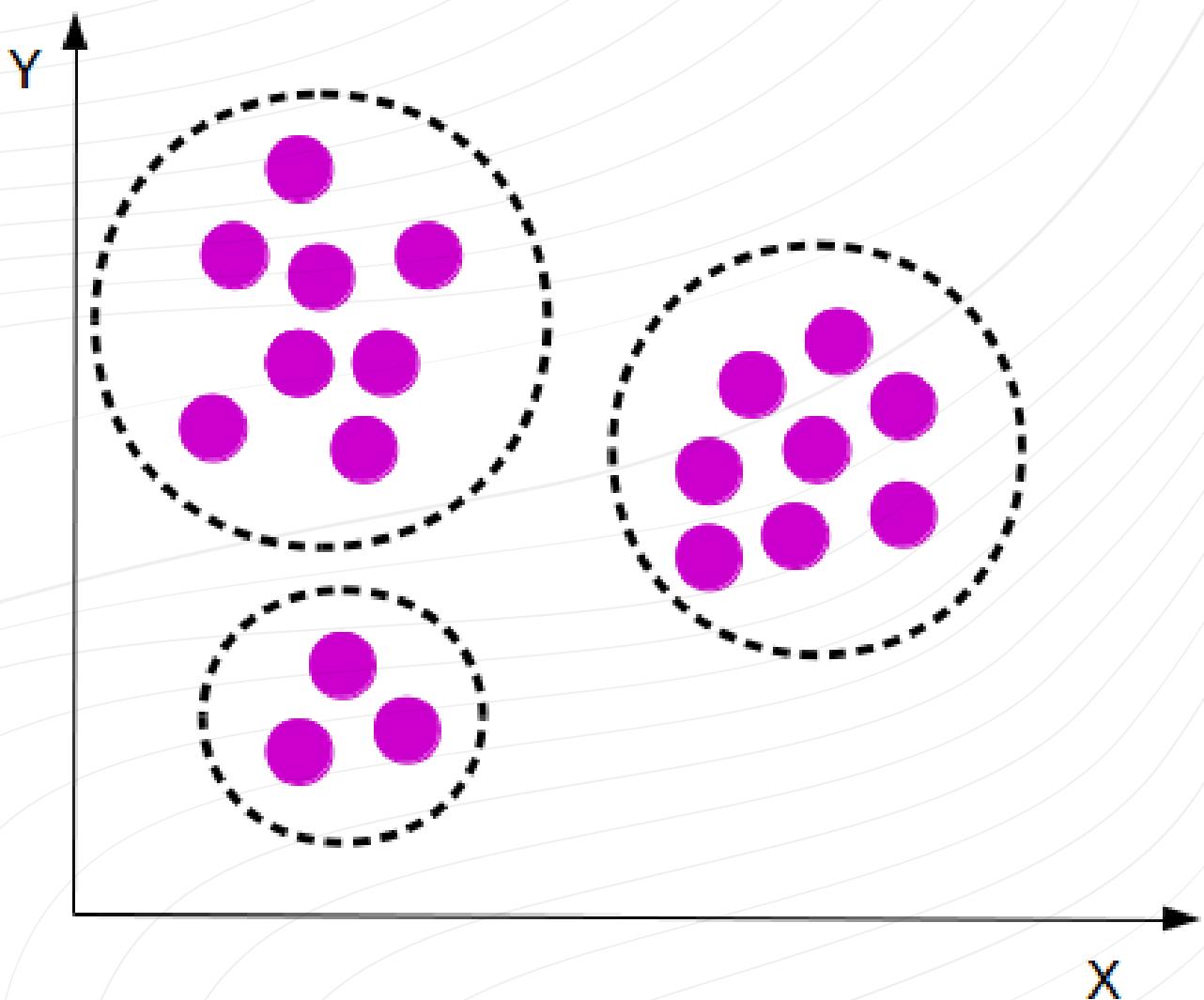
Ex: Classifying emails as "spam" or "not spam"



Unsupervised Learning

Usage: When we don't have any label. The goal is discovering hidden patterns in data.

Ex: Finding customer segments



Python

Python, as an interpreted and dynamic language, mainly supports object-oriented programming approaches and to a certain extent functional programming.



Pandas - Data Wrangling

Pandas is an open source python library that facilitates data analysis and data preprocessing.



NumPy - Data Wrangling

NumPy is the basic package used in scientific calculations like matrices in Python.



NumPy

Matplotlib - Data Visualization

Matplotlib is a comprehensive library for creating static, animated, and interactive visualizations in Python.



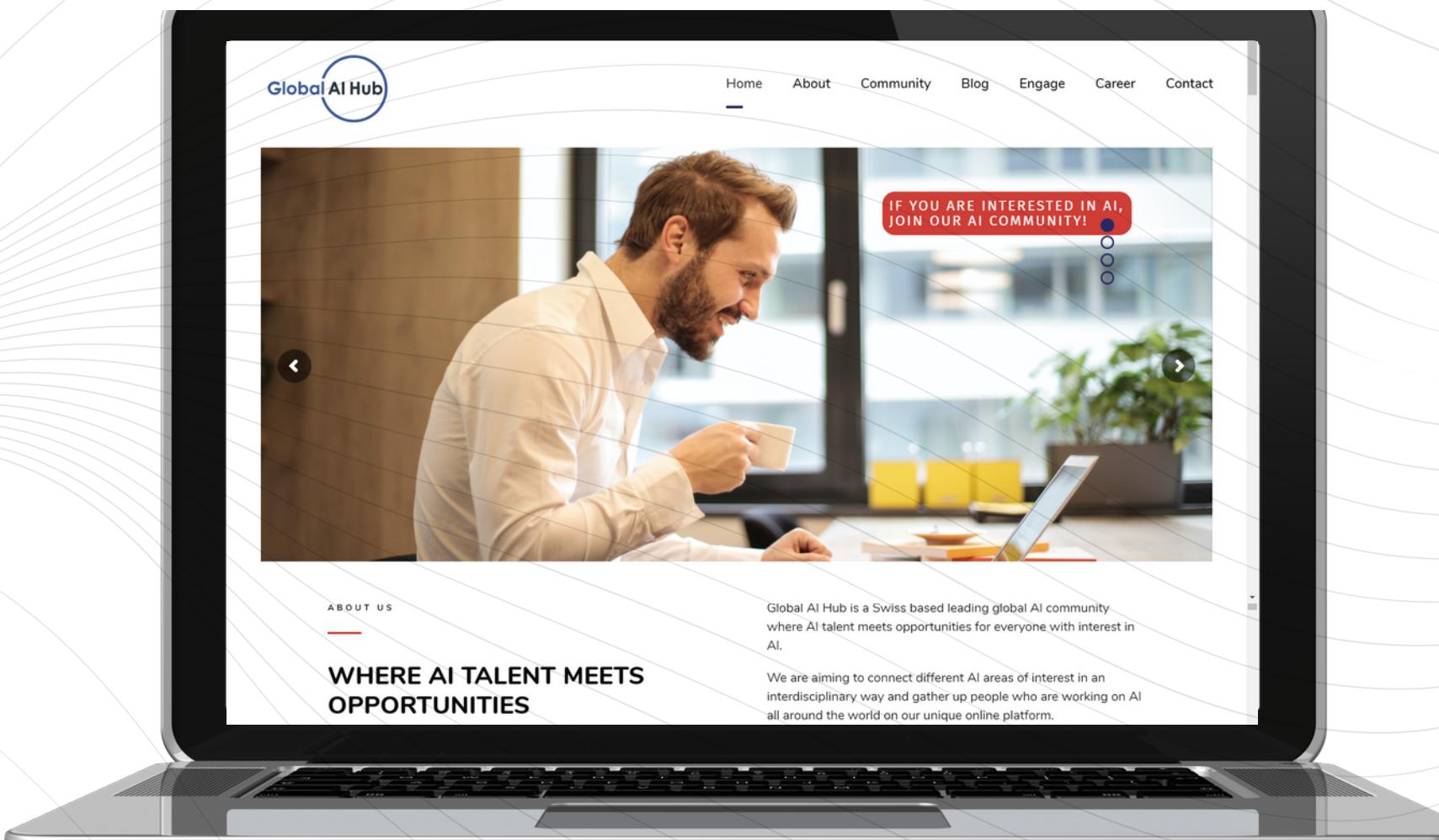
Scikit-learn - Machine Learning

Scikit-learn is a free software machine learning library for the Python programming language



Machine Learning with Scikit-Learn

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