

MACHINE & DEEP LEARNING INTRO COURSE

For Curious with a Technical Background

PARTICIPANTS WILL LEAVE THE COURSE WITH:

- The ability to use and run python code for basic AI models
- Understanding what's under the hood of AI models
- Understand the AI training process mechanism

COURSE FEATURES

- In the course we will demystify concepts of machine learning basics and deep convolutional neural networks, back-propagation theory along with hands on examples.
- The course assumes no significant math background. The mathematical contents will be simplified, and the focus will be on the implementation tools.
- During the course period we'll be available by mail\phone\chat to any questions of the attendees.
- Course will be given in Hebrew, but the training materials are in English.

DEVELOPMENT FRAMEWORKS

- During the course we will use python and work with Tensorflow and Pytorch.
- We will use GPU on clouds (Colab, Kaggle)

PRE-REQUISITES

- A basic experience in python programming is required (if you don't have we recommend our courses: python for programmers or python for non programmers)

COURSE DURATION

- The course is online and takes 6 days, 2 hours each day that are split to theory and hands on learning.

THE INSTRUCTOR

- **Tamir Nave** has 10 years experience in the field of algorithms, focusing on computer vision, deep learning and reinforcement learning as a developer, team leader, consultant and mentor. Tamir holds a Bsc in math & EE and MSc in EE. Tamir is the founder of the collaborative Hebrew blog for AI ai-blog.co.il and the podcasts amlek.ai and [explAInable](https://explAInable.com). Tamir worked as a freelancer on various projects and startups as a developer, consultant, mentor and an instructor. Some of his previous customers are: Microsoft, IAI, Israeli Intelligence Corps, ITC, CB4, Polygon Tech, Parkam, Senecio Robotics, Steam CC, Alma and many more...

CONTACT DETAILS

- **Tamir Nave:** 052-2962775 , tamir@ai-blog.co.il

COURSE SYLLABUS

Day	Topic	Description
1	Intro to Machine and Deep Learning	We will understand what kind of problems can be solved by machine learning and what is the different from traditional coding. We will learn <ul style="list-style-type: none"> • Classification • Regression • Clustering • Generative • Reinforcement Learning
2	AI Models and their Training	<ul style="list-style-type: none"> • Perceptron • CNN • AutoEncoders • Transformers • BackPropagation
3	Vision Models	AI models that analyze images and videos, recognize objects, generate images, etc... In this lesson we will use pytorch code to train a simple CNN model to recognize the object in a given image.
4	Language Models	Today LLM's (large language models) like the GPT's, Claude, Llama, Gemini, etc...) are widely familiar. In this lesson we will learn about how they were built and trained. We will experience in a simple code demo of an

		AI model that process natural language.
5	Reinforcement Learning Models	AI models that takes decision in a dynamic environment. Can be applied to robotics, industry, aviation, transportation, gaming, etc.. In this lesson we will create an AI model that will learn to play and win a simple game.