1. What is ai for noobs and dummies
2. Programming and ai field and how both differ

Classic Programming: i + process = output,

Ai Programming: I + o = process

1. Types of ai, ai hagiarchy ‘talk about each one’

Supervised learning, unsupervised learning, mixed learning

Ai, ml, dl, gen\_ai, rf

1. Most famous algos for each type of ai category

Ai (if statements programming ‘condition based state machine’),

Ml (expert sys , knowledge base machines, preceptron),

Dl (regression, nn, cnn, rnn, gru, lstm, sec2sec, attention, transformer),

Rf (kornov graf),

Gen ai (GAN, DEFFIUSION)

(define all and how they differ)

1. Use cases for each one (applications)

Regression and classification, (perceptron, neural network)

Computer vision, (cnn, transformer based computer vision

Unet, inception network)

Sequential data like NLP (rnn, gru, lstm, sec2sec, encoder\_decoder networks, attention, transformer network)

1. Diving deeper in the way of how Supervised learning works

Explaining an overall idea of Supervised learning

Starting from the definition of the linear function y =w\*x+b

As the regression model problem

Then understanding the cost/loss function

Then the how do we minimize it with gradient decent

The use of chain rule and updating parameters

Putting all of it together

Training process

Pytorch example

Use case in house price prediction

1. Understanding and describing the activation functions
2. The classification problem and how it differs from the regression problem.

Understanding the sigmoied activation function

The way we compute the loss/cost for classification problems

Use case cover of classifying datapoints and then

hand written numbers ‘uncovering the problem of single perceptron ’

Pytorch example

1. Generalizing the idea to more than one perceptron

Generalizing to a layer then a network and understanding the how and why that works and why it will be able to learn more complex functions/problems

1. Diving deeper into the cnn networks

Understanding why we need cnn

And how cnn works

Explaining the concept of filters

Types of filters

Use case of recognizing hand written digits with pytorch

1. types of cnns and there applications