# Learn with me

# AI Learning Plan

## 1. Basics

- Python

- Data Analysis with Python

- Data Structures using Python (NumPy, Pandas, Matplotlib ,etc..)

## 2. Machine Learning

- Supervised Learning

- Linear Regression (with intro to Linear Algebra, Matrices, and Calculus)

- Classification

- Naive Bayes

- KNN

- Decision Trees

- Random Forest

- Time Series

- SVM

- K-Folds

- Cross Validation

- XGBoost

- Gradient Descent

- Unsupervised Learning

- Clustering

- KMeans

- DBSCAN

- Hierarchical Clustering

- PCA

- Dimensionality Reduction

## 3. Deep Learning

- Neural Networks

- Deep Neural Networks

- Optimization with Gradient Descent

- Hyperparameters Optimization

- CNN

- YOLO

- RNN (Sequence Models)

- LSTM

- GRU

- Hyperparameter Tuning

- Fine-tuning Pretrained Models

## 4. Natural Language Processing (NLP)

- Libraries: nltk, re

- Tokenization

- Word Embedding

- Vectors

- word2vec

- Similarity Algorithms

- Text Classification

- Ngrams (Probabilistic Models)

- Text Generation

- Sentiment Analysis

- Auto Correct

- Translation Models

- Transformers

- Pretrained Transformers

- Hugging Face

- Search Engines

## 5. Tools and Deployment

- How to Scrape Data and Extract Information

- Backend using Flask

- Docker

- Cloud for Deployment

- Final Task: Learn what you need to specialize in your major

## 6. Additional Learning Tracks

- Second Track: Mobile Development using Dart, Flutter, Firebase