

Got it — you want a clear weekly plan **ONLY** for AI/ML,

- **where to learn,**
- **what mini-projects to build each week**  
(based on *government exam + practical placement-ready* needs).

Here is a **clean, focused, actionable plan** 

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## ⭐ 8-Week AI/ML Roadmap (Beginner → Confident)

*(No unnecessary prerequisites — only what you ACTUALLY need.)*

Each week =

- ✓ What to study
  - ✓ Where to learn (FREE, best sources)
  - ✓ What mini-project to build
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## WEEK 1 — Python for AI (**ONLY** the needed parts)

### **What to study**

- Data types
- Loops
- Functions
- List, Tuple, Dict (MOST USED in ML)
- Numpy basics

### **Output by week-end**

→ You should be able to load data, do simple math, and write functions.

### Where to learn

- **YouTube:** Kris Naik – Python for Machine Learning
- **Course:** Kaggle “Python” micro-course (free & best)

### Mini Project

#### ✓ *Number Guessing Game with ML twist*

- User gives number
  - You write a program that guesses it using binary logic
  - Helps thinking like ML
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## WEEK 2 — Data Handling + Pandas + Matplotlib

### What to study

- Pandas (read CSV, filtering, cleaning)
- Matplotlib basics (line, bar, scatter)
- Basic data cleaning

### Learn from:

- **Kaggle’s “Pandas” micro-course**
- YouTube: Siddhardhan – Pandas playlist

### Mini Project

#### ✓ *COVID Data Analyzer*

- Download COVID dataset
- Show “Top 5 countries by cases”
- Line graph of India cases
- Pie chart of deaths vs recovered

This improves **data thinking** — core of ML.

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## WEEK 3 — Statistics for ML (simple, practical)

**Learn only what is USED:**

- Mean, median, mode
- Variance, SD
- Correlation
- Probability basics
- Normal distribution
- Outliers

 **Learn from:**

- YouTube: StatQuest by Josh Starmer (BEST)
- Khan Academy basics

 **Mini Project**

✓ *Student Marks Analysis*

- Correlation between hours studied and marks

- Detect outliers
  - Predict marks using simple linear formula
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## WEEK 4 — Machine Learning Foundation



### What to learn:

- What is ML?
- Supervised vs Unsupervised
- Regression
- Classification
- Train–Test Split
- Accuracy, Confusion Matrix



### Where to learn

- Kaggle “Intro to ML”
- YouTube: Codebasics ML playlist



### Mini Project

#### ✓ *House Price Predictor (Basic)*

- Use a small CSV
- Predict house price using Linear Regression
- Show error/accuracy

This is the **first real ML model** you'll build.

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# WEEK 5 — Core ML Algorithms (the actual ones used)

## Algorithms:

- Linear Regression
- Logistic Regression
- Decision Trees
- Random Forest
- KNN
- K-Means (unsupervised)

## ★ Where to learn

- Kaggle “Intermediate ML”
- YouTube: Krish Naik – ML algorithms

## ✖ Mini Project

- ✓ Iris Flower Classifier
  - ✓ Customer Segmentation using K-Means
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# WEEK 6 — Real-World ML + Feature Engineering

## Learn:

- Handling missing data
- Normalisation
- One-hot encoding

- Feature scaling
- Overfitting / Underfitting
- Cross-validation

### Mini Project

- ✓ *Loan Approval Prediction* (classification)
- ✓ *Food Delivery Time Prediction* (regression)

These mimic **placement-level questions**.

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## WEEK 7 — Deep Learning (ONLY the useful core)

### Topics:

- What is a neural network
- Activation functions
- Loss functions
- Gradient descent
- TensorFlow / Keras basics

### Learn from:

- YouTube: Codebasics DL playlist
- Course: “Intro to DL with Keras” on Kaggle

### Mini Project

- ✓ *Handwritten Digit Classifier (MNIST)*  
Using TensorFlow/Keras.
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# WEEK 8 — End-to-End AI Portfolio Project

Now build ONE big project — usable for resume.

## Options:

- ✓ Fake News Detector (NLP)
- ✓ Movie Recommendation System
- ✓ Image Classifier for Fruits
- ✓ Chatbot using ML + NLP
- ✓ Sentiment Analyzer

This shows you are **job-ready**.

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## ★ What you will achieve after 8 Weeks

- ✓ Can build ML models
  - ✓ Understand algorithms
  - ✓ Know Pandas, Matplotlib, Numpy
  - ✓ Can work on Kaggle datasets
  - ✓ Have 5+ mini-projects
  - ✓ Have 1 full portfolio project
  - ✓ Ready for internships + placements
  - ✓ Enough base for gov exams (basic AI topics asked)
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## ★ If you want, I can generate a PDF for:

- ✓ Weekly plan in table format
- ✓ Study sources
- ✓ Project list
- ✓ Checklist for each week
- ✓ Notes space

Just say "**Make PDF**".