Great choice 🔥
নিচে তোমার জন্য **Only Computer Vision focused Deep Learning Plan** দিলাম
⏱️ **প্রতিদিন 30–60 মিনিট**
🎯 **Goal:** Image + Video + CCTV level projects confidently করা

🖼️ Computer Vision–Only Daily Study Plan

Duration: 7 Weeks (30–60 min/day)

🔹 Week 1: Vision + DL Foundations

Goal: Image কীভাবে machine দেখে বুঝে নেওয়া

Day 1

- What is Computer Vision
- Real-world CV use cases (CCTV, medical, self-driving)

Day 2

- Digital image basics
  - Pixel, Resolution, Channels (RGB, Grayscale)

Day 3

- Image as matrix
- NumPy for images

Day 4

- OpenCV basics
  - Read, show, save image

Day 5

- Image preprocessing
  - Resize, Normalize, Blur

Day 6

- Edge detection (concept)

- Sobel, Canny

Day 7

- Mini practice: Image preprocessing pipeline

🔹 Week 2: CNN (Core of Vision)

Goal: CNN deeply বুঝা

Day 8

- Why CNN works better than NN

Day 9

- Convolution operation (visual intuition)

Day 10

- Filters & Feature maps

Day 11

- Pooling layers

Day 12

- CNN architecture (Conv → ReLU → Pool)

Day 13

- Build CNN from scratch (PyTorch)

Day 14

- Train CNN on small image dataset

🔹 Week 3: Image Classification (Practical)

Goal: Real dataset handling

Day 15

- Image datasets structure

Day 16

- DataLoader & Dataset class

Day 17

- Data augmentation (flip, rotate)

Day 18

- Improve accuracy techniques

Day 19

- Evaluation metrics (Accuracy, Confusion Matrix)

Day 20

- Error analysis (Why model fails)

Day 21

- Mini project: Image Classifier

🔹 Week 4: Transfer Learning (Industry Standard)

Goal: Fast & accurate models

Day 22

- What is transfer learning

Day 23

- Pretrained CNNs (ResNet, VGG)

Day 24

- Fine-tuning vs Feature extraction

Day 25

- Train on custom dataset

Day 26

- Model optimization tricks

Day 27

- Save & load trained model

Day 28

- Mini project: Custom image classifier

🔹 Week 5: Object Detection (YOLO Focus)

Goal: CCTV-level detection

Day 29

- Detection vs Classification

Day 30

- Bounding box & IoU

Day 31

- YOLO architecture (high level)

Day 32

- YOLO dataset format (labeling)

Day 33

- Train YOLO on custom data

Day 34

- Inference on images

Day 35

- Inference on videos (OpenCV + YOLO)

🔹 Week 6: Advanced Vision (Tracking + Video)

Goal: Motion understanding

Day 36

- Object tracking basics

Day 37

- SORT / Deep SORT concept

Day 38

- Frame extraction from video

Day 39

- Person detection + tracking

Day 40

- Video pipeline optimization

Day 41

- Multi-camera concept

Day 42

- Mini project: Person tracking system

🔷 Week 7: Action & Suspicious Detection

Goal: Your main target 🚨

Day 43

- Why frame-based detection fails

Day 44

- CNN + LSTM idea

Day 45

- Video sequence modeling

Day 46

- Simple action recognition

Day 47

- Anomaly detection concept

Day 48

- Real-time suspicious pipeline

Day 49

- Final project: CCTV suspicious behavior detection

⏱️ Daily 30–60 Min Formula

- **10 min** → Concept
- **20–30 min** → Code
- **10–20 min** → Practice

🏆 After This Plan, You Can:

✅ Handle image & video data
✅ Train CNN & YOLO on custom datasets
✅ Build real-time CCTV systems
✅ Do final year / portfolio projects confidently

👉 How do you want to continue?

আমি এখন:
1️⃣ **Day 1 full lesson + code**
2️⃣ **YOLO-only fast track**
3️⃣ **CCTV Suspicious Detection full pipeline**

👉 বলো, কোনটা শুরু করবো?