#4 Transfer Learning

AI Training

Recap: CNN

- More training images → higher model accuracy
- Example:
  - **1,000 training images** → lower accuracy
  - **8,000 training images** → higher accuracy
- Challenge: Often we don't have large datasets

Why Transfer Learning?

- Training from scratch requires huge labeled datasets
- **Transfer Learning** allows us to:
  - Use **pretrained models** trained on millions of images
  - Fine-tune them on our **specific dataset**
- Saves time & resources

Transfer Learning Architectures

- We will focus on:
  - VGG family (e.g., VGG16)
  - Residual Networks (ResNet)

Chapter Summary

- What you will learn:
  - Transfer Learning concepts
  - VGG16 & ResNet architectures
  - Multi-task Learning (Age & Gender)

Practice

Train a CNN

Transfer Learning for Image Classification

Transfer Learning

Any questions?

THANKS