End to End Object Detection

Instructors:

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Curriculum:

Introduction to Course

• Introduction to Course Preview

• Who is this Course for? Preview

• Course Overview

• Course Outcome

• Installing Anaconda, Pycharm & Postman

• Working with Conda Envs

• Pycharm Introduction

• Pycharm with Conda

• Pycharm with venv

• Pycharm with Pipenv

Covering Python Basics

• Introduction

• Building a Calculator

• Working with Command Line Arguments

• Building the Flask Application

• Testing our App in POSTMAN

• Learn to Debug with Pycharm

• Adding an UI to our Web App

Understand Object detection theoritically

• Introduction

• What is Object Detection?

• What are Bounding Boxes?

• Metrics used in Object Detection

• Applications of Object Detection

Object Detection using Tensorflow 1.x

• Introduction

• Introduction to TFOD1.x

• Using Google Colab with Google Drive

• Installation of Libraries in Colab

• TFOD1.x Setup in Colab

• Visiting the Model Zoo

• Inferencing in Colab

• Inferencing in Local

• Important Configuration Files

• Webcam Testing

Training a Custom Mask Detector using Tensorflow1.x

• Introduction

• Our Custom Dataset

• Doing Annotations or labeling data

• Preparing the Dataset for Training

• Selection of Pretrained Model from Model Zoo

• Files Setup for Training

• Let's start Training

• Resume or Stop Training

• Converting CKPT to Frozen Inference Graph

• Inferencing with our trained model

Creating an End To End Mask Detector Web Application with TFOD1

• Introduction

• Creating a Pycharm project & Environment Setup

• Debugging our Application

• Testing our App with PoSTmaN

• Adding an UI to our Web APP

Object Detection using Tensorflow 2.x

• Introduction

• Introduction to TFOD2.x

• Installation of Libraries in Colab

• Visting TFOD2.x Model Garden

• Inference using Pretrained Model

• Important Configuration Files

• Inferencing in Local with a pretrained model

Training a Custom Chess Piece Detector using Tensorflow2

• Introduction

• Our Custom Dataset

• Doing Annotations or labeling data

• Preparing the Dataset for Training

• Selection of Pretrained Model from Model Zoo

• File Setup for Training

• Let's start Training

• Stop Training or resume Training

• Convert CKPT to Saved Model

• Inferencing using the Custom Trained Model in Colab

• Inferencing using the Custom Trained Model in Local PC

Creating an End To End Chess Piece Detector Web Application with TFOD2

• Introduction

• Creating a Pycharm project & Environment Setup

• Building a Flask Application

• Debugging our Application

• Testing our App with PoSTmaN

• Adding an UI to our Web APP

Object Detection using Detectron2

• Introduction

• Introduction to Detectron2

• Installing libraries in Google Colab

• Visiting the Model Zoo

• Inferencing using Pre Trained Model

Training a Custom Detector using Detectron2

• Introduction

• Our Custom Dataset

• Doing Annotations or labeling data

• Registering Dataset for Training

• Selection of Pretrained Model from Model Zoo

• Let's start Training

• Stop Training or resume Training

• Inferencing using the Custom Trained Model in Colab

• Evaluating the Model

Creating an End To End Custom Detector Web Application with Detectron2

• Introduction

• Creating a Pycharm project & Environment Setup

• Building a Flask Application

• Debugging our Application

• Testing our App with PoSTmaN

• Adding an UI to our Web APP

Object Detection using YoloV5

• Introduction

• Introduction to YoloV5

• Inferencing using Pre Trained Model

Training a Custom Warehouse Apparel Detector using YoloV5

• Introduction

• Our Custom Dataset

• Doing Annotations or labeling data

• Preparing the Dataset for Training

• Let's start Training

• Inferencing using the Custom Trained Model in Colab

Creating an End To End Warehouse Apparel Detector Web Application with YOLOV5

• Introduction

• Creating a Pycharm project & Environment Setup

• Building a Flask Application

• Debugging our Application

• Testing our App with PoSTmaN

• Adding an UI to our Web APP

Mask detector

Chess Piece detector

Mixed Classes detector

Warehouse Apparel detector