Welcome to ineuron.ai

Computer Vision Projects

Description:

Computer vision is the study of how computers extract useful information from photos or videos and put it to use in various applications. Examples include reverse engineering, security checks, image editing and processing, computer animation, autonomous navigation, and robots. This course will help you learn and implement various unique vision-based projects with real-world applications and use Computer Vision to tackle numerous real-world issues.

Start Date:

Doubt Clear Time:

Course Time:

Features:

Real-time project building

Quizzes

Assignments

Downloadable resources

Completion certificate

What we learn:

Working with desktop & web applications

Computer vision projects like object detection, object tracking & much more.

Full project pipelines from scratch to deployment.

Project presentation skills

Requirements:

Prior knowledge in Python

Prior knowledge in Computer vision models

Quiz questions

A system with a stable Internet Connection

Your dedication

Instructor:

Name:

Sourangshu Pal

Description:

Visual Computing Engineer and instructor at iNeuron.ai having 3 years of diverse experience in the discipline of visual computing with specialization in Deep Learning and Computer Graphics. Loves to analyze, process, and model visual data then interpret the insights to create actionable plans for solving challenging business problems.

>Introduction to Course:

>>Inroduction to the course

>>Course Curriculum

>>Installing Software and Applications

>>Working with Anaconda environments

>>Pycharm introduction

>>Pycharm with conda

>>Pycharm with venv

>>Pycharm with pipenv

>Covering Python Basics:

>>Building a calculator part

>>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

>Intro to Object detection:

>>What is Object Detection?

>>What are Bounding boxes?

>>Applications of Object detection

>>Metrics used in Object detection

>Practicals Object Detection using Tensorflow 1.x:

>>Introduction to TFOD1.x

>>Using Google colab with Google drive

>>Installation of Libraries in colab

>>TFOD 1.x setup in colab

>>Visiting the Model Zoo

>>Inferencing in Colab

>>Inferencing in Local

>>Important Configuration Files

>>Webcam Testing

>Practicals Training a Custom Cards Detector using Tensorflow1.x:

>>Custom model training in TFOD 1.x

>>Our custom dataset

>>Doing Annotations or labeling data

>>Selection of pretrained model from Model zoo

>>Files setup for training

>>Let's start Training in Colab

>>Export Frozen inference graph

>>Inferencing with our trained model in Colab

>>Training in Local

>>Inferencing with our trained model in Local

>Practicals Creating an Cards Detector Web App with TFOD1:

>>Creating a Pycharm project & Environment Setup

>>WebApp workflow

>>Code Understanding

>>Prediction with Postman

>>Debugging our Application

>Practicals Object Detection using Tensorflow 2.x:

>>Introduction to TFOD2.x

>>Using the default colab notebook

>>Google colab & Drive setup

>>Visting TFOD2.x Model garden

>>Inference using Pretrained model

>Inferencing in Local with a pretrained model:

>>Custom model training in TFOD 2.x

>>Our custom datset

>>File setup for training

>>Let'S start training

>>Stop training or resume training

>>Evaluating the trained model

>>Convert CKPT to saved model

>>Inferencing using the custom trained model in colab

>>Inferencing using the custom trained model in local PC

>Practicals Training a Custom Chess Piece Detector using Tensorflow2:

>>Creating a pycharm project & environment setup

>>Application workflow

>>Code understanding

>>Testing our app with postman

>>Debugging our application

>Practicals creating an chess piece detector web app with TFOD2:

>>Introduction to detectron2

>>Detectron2 colab setup

>>Visiting detectron2 model zoo

>>Detectron2 pretrained model inferencing

>Practicals object detection

using detectron2:

>>Detectron2 custom training

>>Exploring the dataset

>>Registering dataset for training

>>Let'S start training

>>Inferencing using the custom trained model in colab

>>Evaluating the model

>Practicals training a custom detector using detectron2:

>>Creating a pycharm project & environment setup

>>Application workflow

>>Code understanding

>>Testing our app with postman

>>Debugging our application

>Practicals creating an custom detector web app with detectron2:

>>Introduction to yolov5

>>Yolov5 colab setup

>>Inferencing using pre trained model

>Practicals object detection

using yolov5:

>>Custom training with yolov5

>>Exploring the dataset

>>Doing annotations or labeling data

>>Setting up google colab & drive

>>Let'S start training

>>Inferencing using the custom trained model in colab

>Practicals training a custom warehouse apparel detector using yolov5:

>>Creating a pycharm project & environment setup

>>Application workflow

>>Code understanding

>>Testing our app with postman

>>Debugging our application

>Practicals creating an warehouse apparel detector web app with YOLOV5:

>>Introduction to vehicle detection project

>>Requirement gathering

>>Framework selection

>>Detailed project workflow

>>Data collection

>>Data preparation

>>Data augmentaion

>>Data annotations

>>Model training

>>Creating a pycharm project & environment setup

>>Webapp workflow

>>Code understanding

>>Prediction with postman

>>Debugging our application

>Traffic vehicle detection:

>>Object tracking project

>>Project installation

>>Project demo

>>Code understanding

>Object tracking with detection:

>>Introduction to helmet detection project

>>Requirement gathering

>>Techstack selection

>>Detailed project workflow

>>Data collection

>>Data preparation

>>Data augmentaion

>>Data annotations

>>Model training

>>Creating a pycharm project & environment setup

>>Webapp workflow

>>Code understanding

>>Prediction with postman

>>Debugging our application

>Helmet detection:

>>Introduction to fashion apparel detection project

>>Requirement gathering

>>Techstack selection

>>Detailed project workflow

>>Data collection

>>Data preparation

>>Data augmentaion

>>Data annotations

>>Model training

>>Creating a pycharm project & environment setup

>>Project demo

>>Webapp workflow

>>Code understanding

>>Prediction with postman

>>Debugging our application

>Fashion apparel detection:

>>Introduction to project

>>Project installation

>>Project demo

>>Application Workflow

>>Code Understanding

>>Debugging our App

>>Different OCR's available

>Image TO text OCR:

>>Introduction to Project

>>Requirement Gathering

>>Techstack Selection

>>Project Installation

>>Project Demo

>>Project Workflow

>>Core Components of the Application

>>Data Collection Module

>>Generate Face Embeddings

>>Training Face Recogniton Module

>>Prediction Pipeline

>>Entrypoint of the Application

>>Application Workflow

>Vision based attendance system:

>>Introduction to Shredder Systems

>>Requirement Gathering

>>Techstack Selection

>>Data Collection

>>Data Augmentation

>>Data Preparation

>>Data Annotation

>>Model Selection from Zoo

>>Model Training

>>Creating a Pycharm project & Environment Setup

>>Application Workflow

>>Project Demo

>>Code Understanding

>>Debugging our Application

>>Project Workflow

>Shredder System:

>>Introduction to ANPR Project

>>Requirement Gathering

>>Tech Stack Selection

>>Project Workflow

>>Data Collection

>>Data Augmentation

>>Data Preparation

>>Data Annotation

>>Model Selection From Zoo

>>Model Training

>>Creating a Pycharm project & Environment Setup

>>Application Workflow

>>Create Google OCR API Key

>>Project Demo

>>Code Understanding

>>Debugging our Application

>Automatic Number plate Recognition with TFOD1.x: