

Not So Easy

**Face Recognition System using FaceNet/VGG16**

Throughout this project, students will be held to exercise their knowledge to build a face recognition system using Python and its ecosystem of powerful packages. From data gathering to model testing and deployment, students will learn how to build an efficient face recognition system pipeline using existing face detection models like t...

Duration : 18 Hours

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3 Steps

**Project Objective**

The Objective of the Face Recognition System is to showcase the student's ability to practice the acquired skills during the data science boot camp. The project aims to consolidate the student's skills and open new perspectives towards new exciting tasks of the state-of-the-art artificial intelligence techniques within the computer vision field.

**Inspiring Project Examples**

https://medium.com/dataman-in-ai/module-6-image-recognition-for- insurance-claim-handling-part-i-a338d16c9de0

https://www.g2.com/categories/image-recognition

**Step By Step**

On this project, you will pass by these steps. All steps must be done to successfully complete this project.

**Data gathering and preprocessing**

In The Initial Phase Of This Project, Students Will Set Up Their Work Environment By Installing The Required Components Provided By The Instructor. They Will Then Gather Data By Selecting Appropriate Images With Consent, Such As Celebrities' Faces Or Family Members' Images. The Next Step Involves Extracting Faces From These Images Using Either The HAAR Cascade Or MTCNN Models. This Phase Prepares Students For The Subsequent Modeling Step.

**Features extraction with FaceNet/VGG16**

At This Stage, Students Should Have Created An Entire Dataset Of Faces From The Previous Stage. Now, Students Will Take A Look At The Concept Of Image Embedding And Try To Apply It Using A Pre-Trained Model Called FaceNet Or A VGG16 Model

**Modeling and deployment**

This Is The Final Stage Of The Lab Phase, Where Students Need To Build And Train A Classification Model, Typically An SVM Model

**Instructor Guideline**

Phase 1: Data gathering and preprocessing 1. Guide students to build their dataset of images. 2. Explain the HAAR model as a Face detector model. 3. Simplify the process of face extraction using the previous model. Phase 2: Features extraction with FaceNet/VGG16 1. Help students understand the concept of image embedding or feature extraction. 2. Give a summary of the provided model architecture and use cases. 3. Assist students with integrating those models into the code. Phase 3: Modeling and Deployment 1. Assist students with the modeling phase, including Building, training, and evaluation. 2. Give a brief demo on using GITHUB to upload the code correctly. 3. Help students in the deployment step with the Streamlit share platform.

**Guidelines Ressources**

https://aws.amazon.com/what-is/facial-recognition/

https://www.innovatrics.com/facial-recognition-technology/