

# PROJECT SYNOPSIS

## CREATING PANCARD TAMPERING DETECTOR USING OPEN CV

*Submitted towards the partial fulfillment of the criteria for award of Genpact Data  
Science Prodegree by Imarticus*

*Submitted By:*

*KHANANCHAN BALANARASIMHAN (Roll No: )*

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## Scope & Objective

The project aims to detect the pan card tampering of the employees given to organization to detect forgery and is extremely used in background checks where one knows if the card is really tampered or not.

This project can be used in different organizations where customers or users need to provide any kind of id in order to get themselves verified. The organization can use this project to find out whether the ID is original or fake. Similarly, this can be used for any type of ID like Aadhar, voter id, etc.

## Business Problem Statement

The authenticity of the employee submitting the documents to the employer is challenged if there is no mechanism to find whether the card is valid or not or has been tampered with. This also enables the company to do a proper background checks.

The purpose of this project is to detect tampering/fraud of PAN cards using computer vision. This project will help the different organizations in detecting whether the Id i.e. the PAN card provided to them by their employees or customers or anyone is original or not.

For this project we will calculate the structural similarity of the original PAN card and the PAN card uploaded by the user

## Data Sources

Internet – Torrent websites and other websites like Towards data science and research papers.

## Analytics Tools

- Programming Language: Python ( Google Collab)
- Open Cv (Library Import)

## Analytics Approach

**Diagnostic analytics:**

**The Structural Similarity Index (SSIM) is a perceptual metric that quantifies the image quality degradation that is caused by processing such as data compression or by losses in data transmission.**

**This metric is basically a full reference that requires 2 images from the same shot, this means 2 graphically identical images to the human eye. The second image generally is compressed or has a different quality, which is the goal of this index.**

## KPIs, Timelines, Milestones

**Important KPI: SSIM index and the Difference it provides using various CV filters.**

## PACKAGES USED FOR THE PROJECT

- Skimage: Scikit-image, or ski-mage, is an open-source Python package, in this project most of the image processing techniques will be used via scikit-image
- imutils: Imutils are a series of convenience functions to make basic image processing functions such as translation, rotation, resizing, and displaying images easier with OpenCV.
- cv2: OpenCV (Open Source Computer Vision Library) is a library of programming functions. Here in this project major reading and writing of the image are done via cv2.
- PIL: PIL (Python Imaging Library) is a free and open-source additional library for the Python programming language that adds support for opening, manipulating, and saving many different image file formats.

### Timelines:

Milestone	Task start date	End date
Objective discussion	05.02.2022	11.02.2022
Project approval	12.02.2022	18.02.2022
Model Building	19.02.2022	25.02.2022
Model evaluation	26.02.2022	04.03.2022