

# Under AI Watcher



# Team: Whitebeard Crew

## Team Members:

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# PROBLEM OVERVIEW

Indiscipline or lack of discipline among students is something that's affecting the society. The use of abusive language, disrespect towards teachers , free fighting in educational institutions, insisting on copying in the examination, ragging, strikes by students, etc. can be commonly seen among students. Being undisciplined has always resulted in a drastic career. Unfortunately, it is a pity that the today's students waste their precious time in acts of indiscipline. Also, no matter how much a teacher puts efforts to bring a student's life back on track, the results always end up in a minority scale.



# OUR SOLUTION

Our prototype is an intelligent video monitoring web application for analyzing school environments. This application will aid the authority incharge in making the students disciplined. Also, the prototype is not only limited to students but also it can detect anomalies or interdisciplinary activities in all public environments.



# FEATURES

- ❖ **Detects students using phone for texting in the classroom.**
- ❖ **Detects students feeling drowsy during class.**
- ❖ **Detects students wearing a mask or not**
- ❖ **Detects gents entering ladies washroom and vice versa**
- ❖ **Classroom attendance system**
- ❖ **Detects students outside their classroom**

# WorkFlow



# TECHNOLOGY USED

## ❖ Programming Language

- Python
- JavaScript

## ❖ Model Development

- Tensorflow 2.0
- Scikit-Learn

## ❖ Web-app development

- Flask
- BootStrap 3.0

## ❖ Version Control

- Git

## ❖ Libraries used

- Numpy
- SciPy
- Pandas

## ❖ Computer Vision Tools

- OpenCV
- Dlib
- FaceNet
- Face\_Recognition

# FUTURE PROSPECTS

## SCALABILITY

The prototype is well scalable and can be implemented widely . There are a few constraints which include unavailability of :

- ❑ Sufficient computing power
- ❑ Sufficient Data
- ❑ Large Database
- ❑ Less Accuracy when performing detection in mobile videos

## FEATURES TO BE BUILT IN FUTURE

- ❑ Detecting medical emergencies
- ❑ Detecting vandalism
- ❑ Detecting smoking in school environment
- ❑ Career recommendations using data collected through observing students involvements in class and their interests



# RESOURCES

## ➤ Dataset

- State Farm Distracted Driver Detection (kaggle)
  - <https://www.kaggle.com/c/state-farm-distracted-driver-detection>
- Gender Classification Dataset (kaggle)
  - <https://www.kaggle.com/cashutosh/gender-classification-dataset>
- Face Mask Detection (kaggle)
  - <https://www.kaggle.com/andrewmvd/face-mask-detection>

## ➤ Paper

- Computer vision based classroom attendance management system-with speech output using LBPH algorithm
  - <https://link.springer.com/article/10.1007/s10772-020-09739-2>
- Facial Mask Detection using Semantic Segmentation
  - [https://www.researchgate.net/publication/336952877\\_Facial\\_Mask\\_Detection\\_using\\_Semantic\\_Segmentation](https://www.researchgate.net/publication/336952877_Facial_Mask_Detection_using_Semantic_Segmentation)

## ➤ Articles

- Pyimagesearch
- Machine Learning is Fun! Part 4: Modern Face Recognition with Deep Learning
  - <https://medium.com/@ageitgey/machine-learning-is-fun-part-4-modern-face-recognition-with-deep-learning-c3cffc121d78>