Project Proposal

Exams Setting Background Recognition

# Group Members

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# Introduction & Problem Statement

The current pandemic has forced institutions to move to online setting creating new challenges with that. One of such challenges is how to proctor an online exam where the only tool the teachers or lecturers could have is the student's laptop camera. In this project, we intend to use machine learning to develop a new tool that could aid teachers in proctoring an exam.

# Methodology

For this project to be possible we must begin with determining what is background a foreground in each image from a video stream. We will need to create a neural network which is going to be supplied an image with a person writing on an exam sheet and output a single bit per pixel image which represents background and foreground. Typically, these images are displayed as black and white images. Once we have this black and white image, we can move onto background change detection.

To detect the changes, we must supply the full image along with the black and white image to a program which is able to extract all the information about the background image and compare to a base background image. We expect that as soon as the first image is supplied, the program will save as much of the background as is visible, as the user moves and shows more of the background then more of the background will be recreated and saved for further comparisons. To detect the changes, if a new image has a background that doesn’t match the currently saved background, we flag this point in time for possible cheating and save the newly changed background for further changes.

# CONCLUSION

With this project, we will apply machine learning principles in background detection which can be very useful to fix the challenge posed by the switch to online testing in institutions today.