# Idea Proposal Submission: Deepfake videos detection using CNN

**1.Project Idea:**

I propose a deep learning project focused on detecting deepfake videos. Deepfake videos, which use artificial intelligence to replace or manipulate the content of videos, pose significant risks in various areas such as misinformation, privacy, trust, etc. Specific objectives of this project is to develop an effective deepfake detection model.

**2. Relevance to Sustainable Development Goals (SDGs):**

This project aligns with the United Nations Sustainable Development Goals (SDGs), particularly in the areas of:

* Goal 9 of SDG: Industry, Innovation, and Infrastructure: By creating advanced tools to detect deepfakes, we contribute to the development of innovative technologies that can safeguard against malicious uses of AI.
* Goal 16 of SDG: Peace, Justice, and Strong Institutions: Deepfake detection plays a role in maintaining the integrity of information, supporting justice, and preventing the spread of misinformation.

**3. Literature Examples:**

I. "Deepfakes Detection Techniques Using Deep Learning: A Survey" by [Abdulqader M. Almars](https://www.scirp.org/journal/articles.aspx?searchcode=Abdulqader+M.++Almars&searchfield=authors&page=1) - This comprehensive review provides insights into various techniques and methodologies used in deepfake detection.

II. " DeepFake Detection using InceptionResNetV2 and LSTM" - This paper introduces InceptionResnetV2, focusing on video deepfake detection, employs LSTM and InceptionResNetV2

**4. Describe Your Data:**

The dataset for this project is sourced from the "Deepfake Detection Challenge" on Kaggle. It includes real and fake video frames labeled accordingly. The Dataset contains 400 test\_videos and 401 train\_sample\_videos. we will apply video processing to capture frames on videos and then making seperate images of real and fake.  
Data Augmentation to preprocess and augment training images and testing images.

**5. Approach:**

I opt for a deep learning approach, InceptionResNetV2 architecture pretrained on ImageNet for feature extraction. This choice is justified by the complexity of deepfake detection and the need for a model with the capacity to capture patterns in image data.   
Note: The code includes model training with data augmentation, transfer learning using InceptionResNetV2, and evaluation metrics such as accuracy.