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**SPARK Mid-Term Report**

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**Institute Name –Sant Longowal Institute of Engineering and Technology, Deemed University**

**Joining Date – 06/06/2022**

**Category – National**

**SPARK ID – SPA2202882**

**Department – Mehta Family School of Data Science and Artificial Intelligence**

**Project Title – Identification of topographic changes using computer vision on UAV images**

* On Week1, I studied and implemented the codes of 2D CNN (Convolution Neural Network), KNN (K-Nearest Neighbour), SVM (Support Vector machine) on different types of classification dataset like Diabetes Classification dataset (based on 9 parameters),MNIST Dataset of Hand written digits. I also studied about activation Layers (RELU, Sigmoid, SoftMax), Pooling Layers (Max, Average), Batch Normalization, Fully Connected Layers, Dropout Layers. I also implemented YOLO v3 on COCO Dataset and gained 92% accurate results.

1. On week2 ,I studied about Open CV and its applications like Thresholding , Binarization ,Adaptive Thresholding , Dilation , Erosion , Edge Detection, Image Gradient
2. [Dilation, Erosion, Opening and Closing](https://www.kaggle.com/code/bulentsiyah/learn-opencv-by-examples-with-python/notebook#3.)
3. [Thresholding, Binarization & Adaptive Thresholding](https://www.kaggle.com/code/bulentsiyah/learn-opencv-by-examples-with-python/notebook#2.)

* Implemented 2D CNN (Convolution Neural Network), KNN (K-Nearest Neighbour) , SVM(Support Vector machine)on different type of classification dataset like Diabetes Classification dataset (based on 9 parameters).
* Studied about activation Layers (RELU, Sigmoid), Pooling Layers (Max, Average), Batch Normalization, Fully Connected Layers, Dropout Layer.
* Implemented YOLO v3 on COCO Dataset.
* Practice of Open CV

**Week 2:**

* Implemented Image Segmentation on Given image and dataset

Week 3:

* Worked and Implemented GoogleLeNet

On Week 3 , I have worked and implemented codes in python language of Pretrained Models ( LeNet-5(1998) ,AlexNet(2012) , ZFNet (2013) , GoogleLeNet (2014) , VGGNet(2014) , ResNet (2015) , EfficientNet (2019) , MobileNet (2019) .