AI ML - 4578 - Facial demographics		
Duration : 18th May to 27th June 2020		
Reporting Manager : Ms. Tanisha Bhayani		
	Major Task Allotment	**Tools / Language**
Week 1	Literature Review	
	Basic introductory survey papers regarding face detection	
	Basic introductory survey papers regarding age detection	
	Git basics	git vcs
	Work distribution, model distribution	
	EDA with the data	Pandas , Jupyter, Python, numpy, matplotlib
Week 2	EDA with the data that was not done (for all students)	Pandas, Jupyter, Python, numpy, matplotlib
	suggestions and modifications to work according to each student's work	
	changes in activation function; using other models' weights	Keras, Jupyter/colab
	EDA on facial images and try different image processing methods to extract features for classical ML mo	opencv, scipy
	Read about ML, and EDA, and image processing techniques	keras, tensorflow
	Explore different architecture in CNN	keras
	Understand the architecture implemented in CNN, and solve issue related to colab	colab
	Paper reading and ML reading	
Week 3	Feature Extractions from images for ML models, SVM	Pandas, Jupyter, Python, numpy, matplotlib
	Create CNN model, and then improve it	
	Train ML models on those features extracted	Keras, Jupyter/colab
	Transfer Learning for Age and Gender Detection	opencv, scipy
	Make changes in the pretrained model	keras, tensorflow
		keras
		colab

Week 4	Create benchmarks of the changes made	Pandas, Jupyter, Python, numpy, matplotlib
	Feature Extractions from images for ML models, KNN	
	Improve CNN model, explore other architectures for the same	Keras, Jupyter/colab
	After substantial accuracy and loss is attained and reduced, start with age prediction regression model	opencv, scipy
	Do EDA on new age prediction dataset	keras, tensorflow
		keras
		colab
Week 5	Feature Extractions from image for ML models, MLP	Pandas, Jupyter, Python, numpy, matplotlib
	Keep improving the old models for age class prediction and gender detection	
	Start to work on age estimation model	Keras, Jupyter/colab
	Use the extracted features to do age estimation now using regressor models instead of classification	opencv, scipy
	For CNN / transfer learning, work with different architecture and methods to improve the mae/mse	keras, tensorflow
	More work according to the student's update and doubts	keras
		colab
Week 6	Select the best model among all the above model for age class prediction, gender detection, age estimation by creating benchmarks on test dataset	
	Create a script that takes the input as image and gives the above age class, estimated age and gender as output with its relevant scores	
	Create a service for the same	Pandas, Jupyter, Python, numpy, matplotlib
	Demo of the complete benchmark results, insights, and the service	
		Keras, Jupyter/colab
		opencv, scipy
		keras, tensorflow
		keras
		colab
Summary / Pending		

7 Pending Work		