SIGN LANGUAGE

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PROJECT OVERVIEW

SIGN LANGUAGE IS THE ONLY WAY FOR DEAF PEOPLE TO COMMUNICATE WITH OTHER INDIVIDUALS, NOT ALL INDIVIDUALS CAN UNDERSTAND SIGN LANGUAGE. WHICH LEADS TO DEAF PEOPLE HAVING A HARD TIME COMMUNICATING WITH OTHERS. OUR GOAL OF THIS PROJECT IS TO BUILD A CONVOLUTION NEURAL NETWORK(CNN) THAT DECIDES WHICH IS THE LETTER BASED ON THE SHAPE OF THE HAND IN SIGN LANGUAGE AND BRIDGING THE GAP IN THE PROCESS OF COMMUNICATION BETWEEN THE DEAF AND DUMB PEOPLE WITH THE REST OF THE WORLD.

DATA

WE ARE GIVEN 2 COMMAS SEPARATED FILES (.CSV) EACH ON THEM CONTAINING SOME ROWS AND 785 COLUMNS.

-FROM 2ND COLUMNS ONWARDS EACH COLUMN REPRESENTS THE PIXEL VALUES ASSOCIATED , REPRESENTING A 28X28 GRAYSCALE IMAGE.

-FIRST COLUMN IN EACH ROW REPRESNTS LABEL WITH THE IMAGE.

-THERE ARE TOTAL 24 LABLES (IN AMERICAN SIGN LANGUAGE) A-I,K-Y MEANS A-Z EXCEPT J AND Z.

TOOLS & MODELS

TOOLS

GOOGLE COLAB

LANGUAGE: PYTHON

LIBRARIES: NUMPY, PANDAS, SEABORN, MATPLOTLIB, SKLEARN, TENSORFLOW

MODELS

MACHINE LEARNING MODELS:

KNN, CNN USING KERAS, CNN USING PYTORCH.