Project Documentation:

Cover sheet

Faculty: Computers and Artificial Intelligence

Course: Selected-2

Team Number: 17

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Paper Details:

a)

Authors name	1- Waluyo Nugroho 2- Rizal Isnanto 3- Adian Fatchur Rochim
paper name	Comparison of Mycobacterium Tuberculosis Image Detection Accuracy Using CNN and Combination CNN-KNN
publisher name	Jurnal RESTI
year of publication	03-02-2023

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b)

1) dataset used: Mycobacterium tuberculosis image data were obtained from the Semarang City Health Center. The dataset used is 220 sputum images, which are divided into 180 training data and 40 testing data.

2) the implemented algorithms: 1-CNN 2-KNN

3) Results:

1- The CNN-KNN accuracy result is 92.5%.

2- The CNN accuracy result is 90% .

Project Description Document

a) General Information on the dataset:

1-Name: Tuberculosis (TB) Chest X-ray Database

2-Link: https://www.kaggle.com/datasets/tawsifurrahman/tuberculosis-tb-chest-xray-dataset

3-the total number of samples: 2

4-the dimension of images:150 *150

b) Implementation details: -

	Ratio	Num of images
Training	56%	3547
Validation	24%	1521
Testing	20%	1268

1)hyperparameters: 1- `MaxPooling2D(padding="same")`

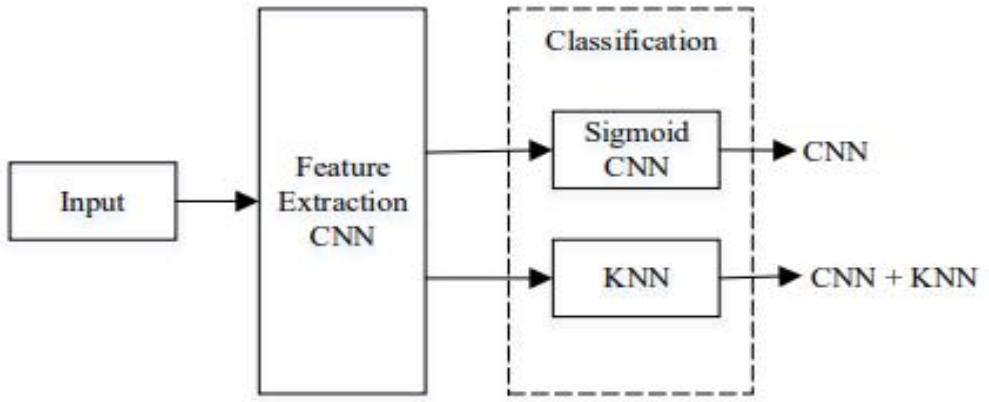
2- Dropout

3- Activation Functions:(SoftMax, Relu)

4- Optimizer: Adam

5- early stopping

2)Block Diagram:

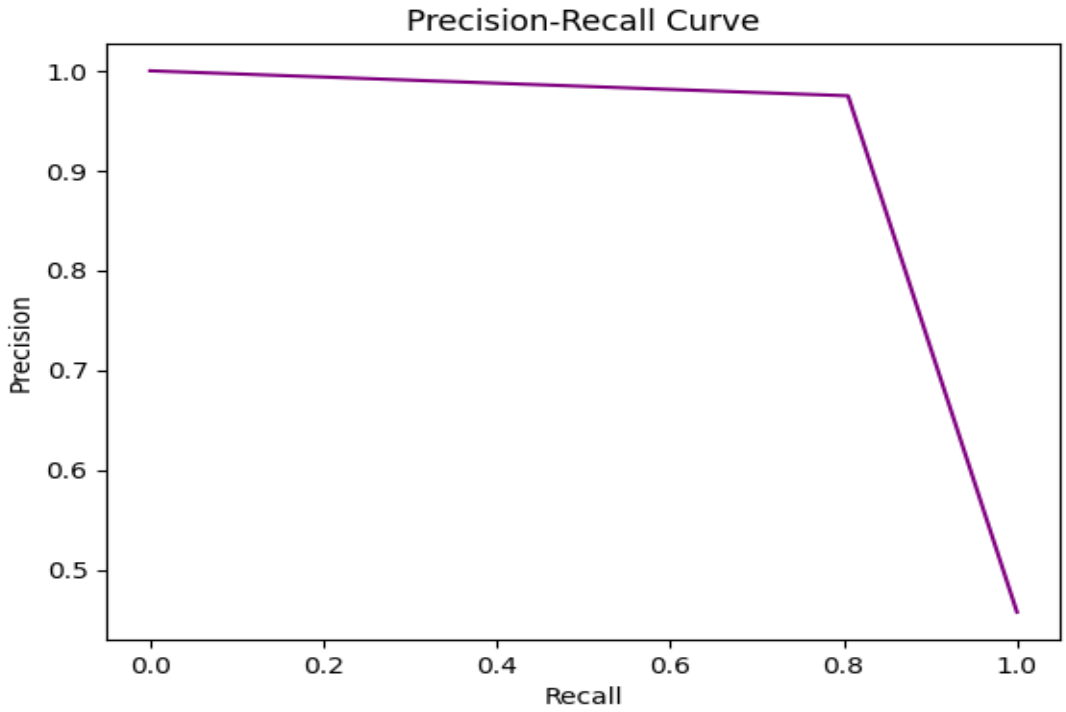


c)Result details:

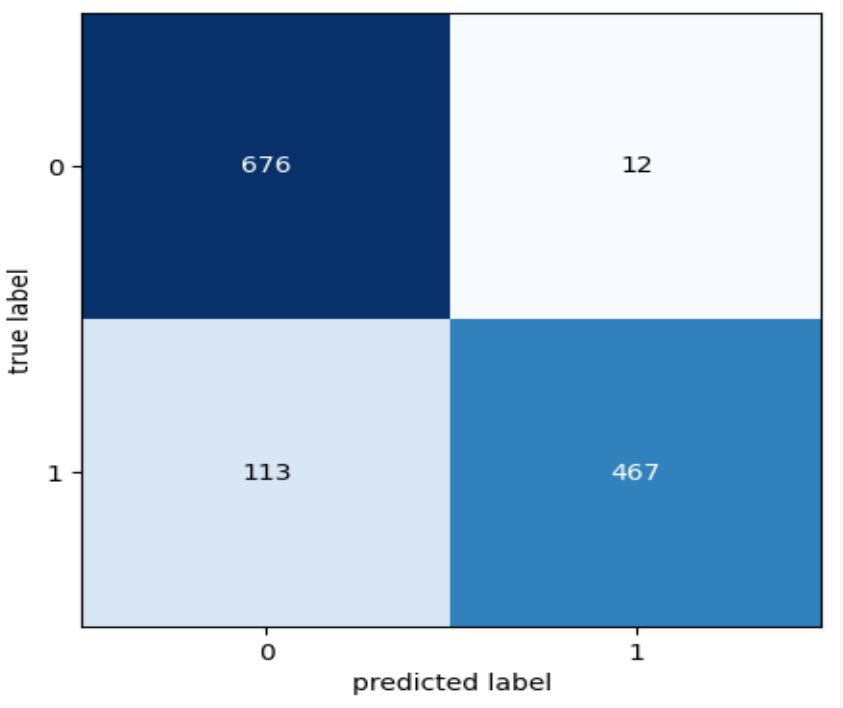
-Measures:

For Cnn-Knn: accuracy→90%

1)Precision-Recall:

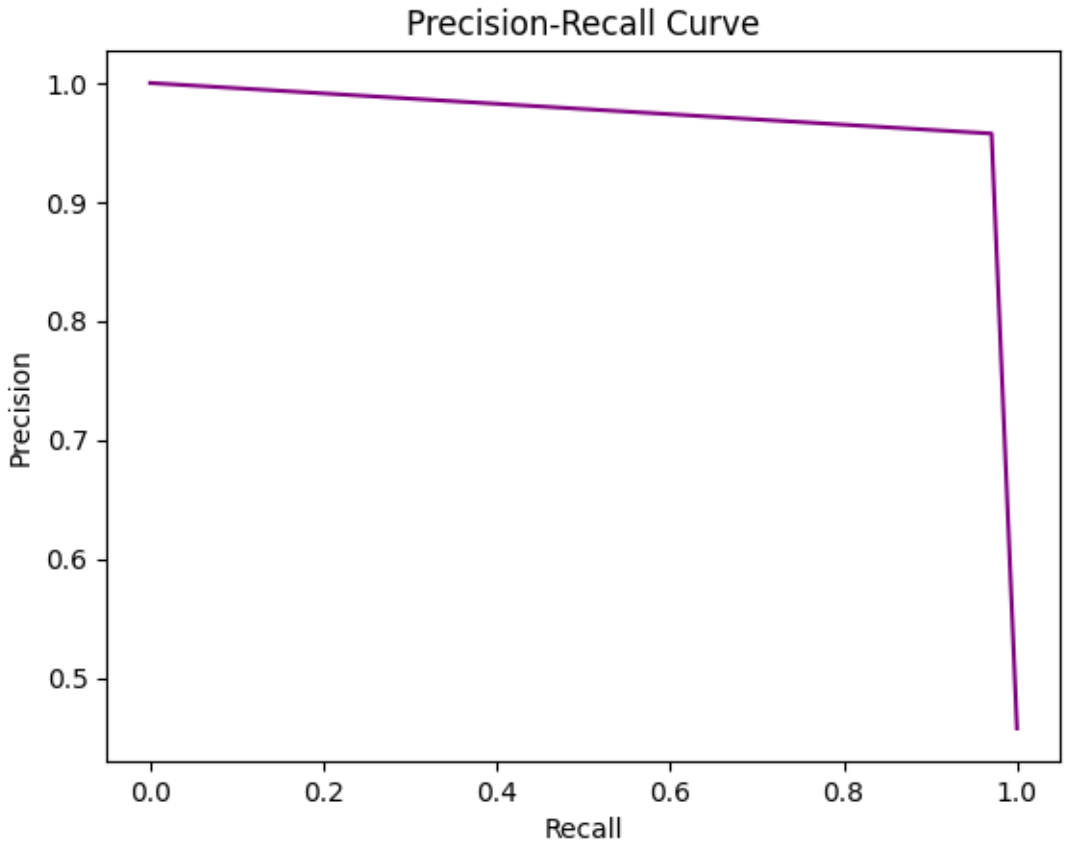


2) confusion matrix:



For CNN: accuracy →97%

1)Precision-Recall:



2) confusion matrix: