DIGIX Implementation Instruction

# Strategy of Implementation

*feature process: We define how to read the data and we have defined a dataset for reading files, which makes it easy to perform data reading and data augmentation operations. The custom dataset only requires overriding the init, getitem and len methods. We first labeled the training set with data, binarized the labels, and used data augmentation methods*

*features election: We use the first 1000 images for training, which can be modified later and using Resnet18 as our pretrained model*

*model optimization: We use resnet18 to pre-train the model and then modify the output layer dimension of the final model, using SGD as the model optimizer*

# Implementation Description

## Runtime

*machine learning framework: pytorch*

*3rd party library dependency: pandas numpy cv2 torch torchvision codecs PIL glob*

*hardware specification: GPU-->RTX3060*

## Experiment process

*Procedure of model experiment:*

1. *Training*
2. *Testing*
3. *optimizing*

*tuning method:*

*epoch number of iterations*

*Hidden layers*

*activation function*

*batch size*

*Optimizer*