Geometric Shape Detector

Group 11
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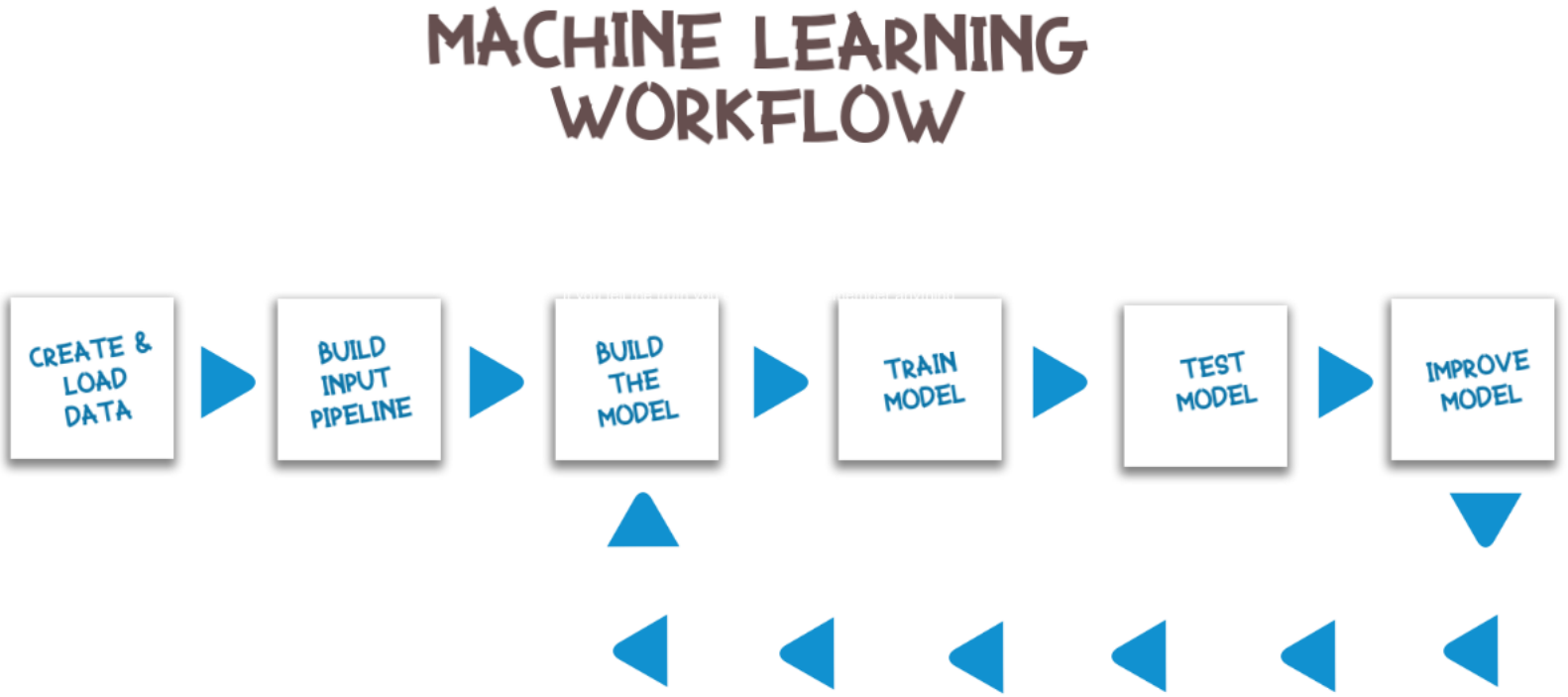
Introduction

- CNN model
- Detects handwritten rectangle, square, circle, triangle
- Dataset of 2,000 handwritten shapes
- User draws a shape in the interface, the model takes the drawing and then predicts the shape
- Model also shows a confidence level of it’s prediction

Methodology

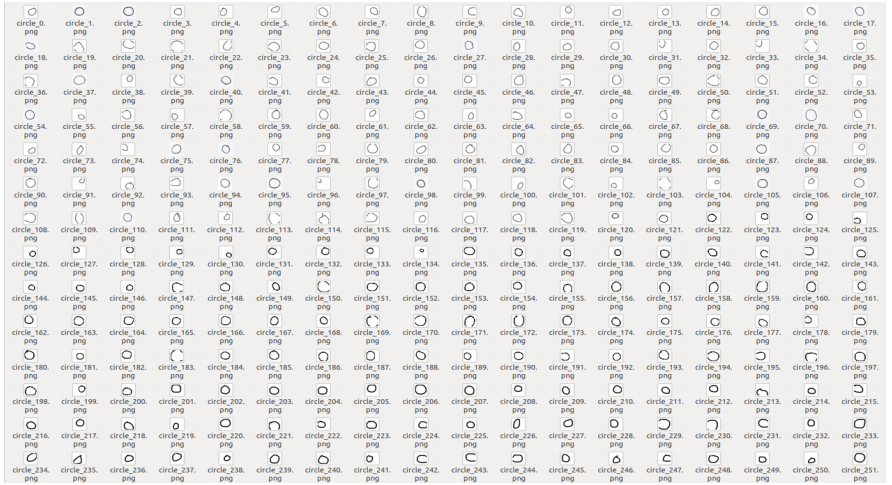


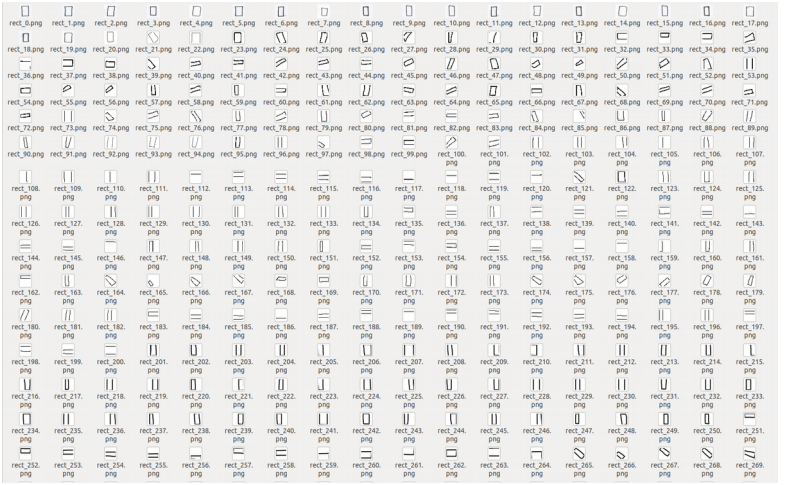
Methodology

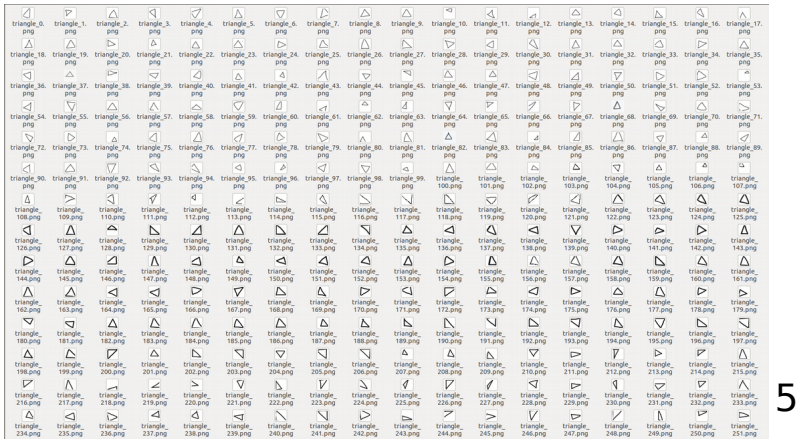
- Libraries and tools used
  - Tensorflow
  - Matplotlib
  - Numpy
  - PIL
  - Keras

Methodology

- Dataset

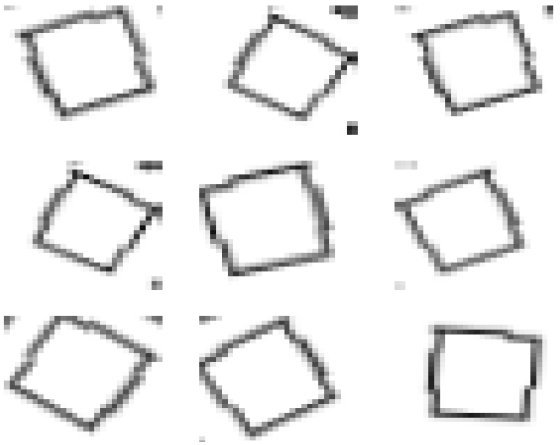






Methodology

- Dataset
  - 28 x 28 pixel images
  - Validation split is 20%
  - Batch size = 4
  - Used data augmentation for fighting overfitting



Methodology

- Model
  - Consists of three convolution blocks with a max pool layer in each of them.
  - Fully connected layer with 128 units on top
  - Relu activation function is used
  - Dropout function used to fight overfitting

Result

- Accuracy
  - 95%

Demo

Thank You