

Free-hand Sketch Recognition

TalentSprint WE

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Description

- ▶ Provides web interface for drawing
- ▶ Captures the image
- ▶ Recognizes the object using CNN

Challenges

- ▶ Large intraclass deformations
- ▶ Less detailed
- ▶ Sketch orientation

Tech Stack

- ▶ Framework
 - ▶ Django
- ▶ Environment
 - ▶ Google colab
- ▶ Frontend
 - ▶ HTML, CSS, JS
- ▶ Backend
 - ▶ Python
- ▶ Modules
 - ▶ OpenCV, Keras

Project Plan

- ▶ Image Processing (3 days)
- ▶ Neural Networks (5 days)
- ▶ Front end development (2 days)
- ▶ Integration and improve accuracy (week3)

Dataset Description

- ▶ Name: TU Berlin
- ▶ Source: Cybertron
- ▶ Number of samples: 20,000
- ▶ Categories: 250
- ▶ Number of images per category: 80

- ▶ Image augmentation
 - ▶ Mirroring
 - ▶ Erosion
 - ▶ Rotation
 - ▶ Shifting
 - ▶ Scaling

Implementation: Mirroring

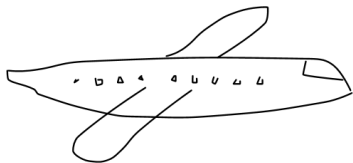


Figure: Original image

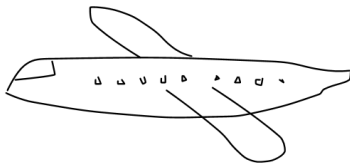


Figure: Mirrored image

Implementation: Erosion

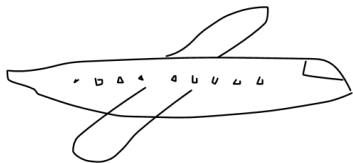


Figure: Original image

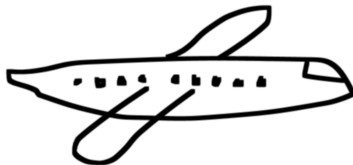


Figure: Image after erosion

Implementation: Rotation

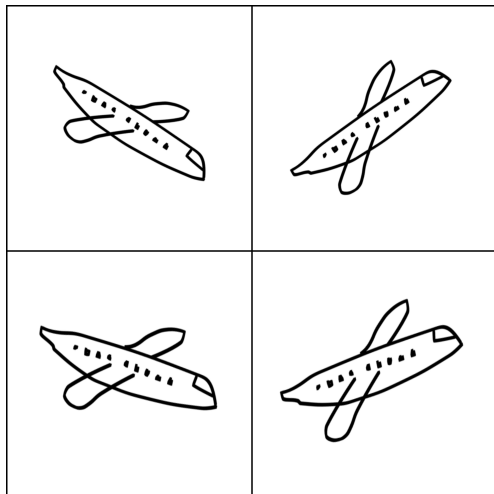


Figure: Rotated images

Implementation: Shifting

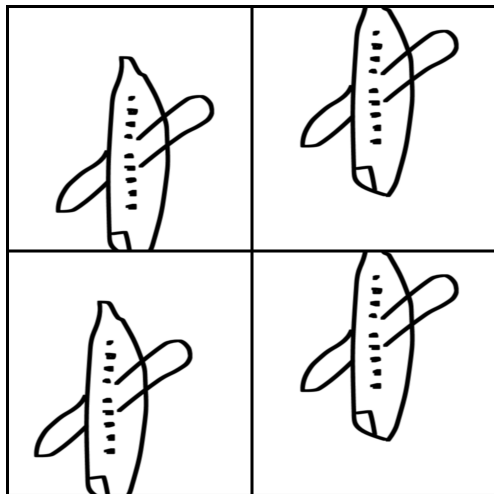


Figure: Shifted images

Implementation: Scaling

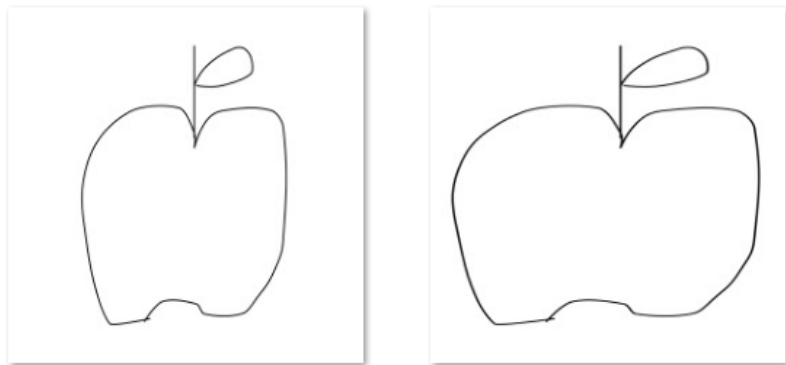


Figure: Scaling of image

Progress as of 25-06-2019

- ▶ Dataset augmentation
- ▶ New dataset description
 - ▶ Number of samples: 2,40,000
 - ▶ Categories: 250
 - ▶ Number of images for category: 960

Git commits

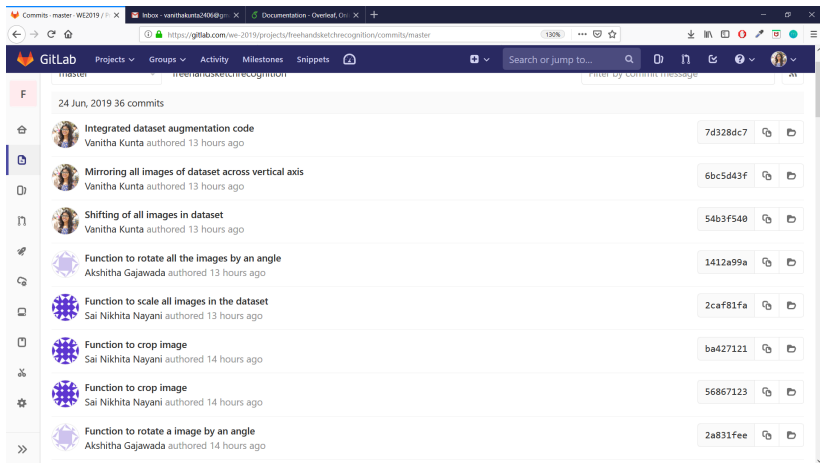


Figure: Commits

Git issues

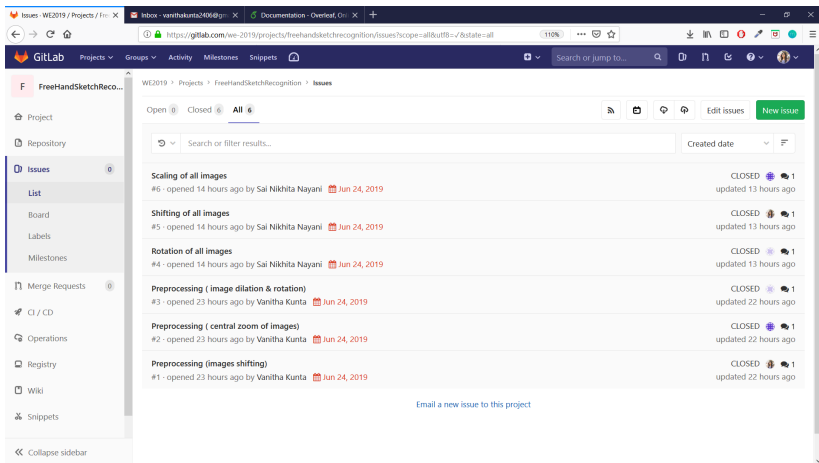


Figure: Issues

Discussions