Free-hand Sketch Recognition

TalentSprint

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Contents

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(Imagenet, LeNet, ResNet)

Progress: 21-06-2019

- TU Berlin dataset (20000 samples - 250 classes)
- Research papers
- Django overview

Progress: 24-06-2019

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

Implementation: Mirroring

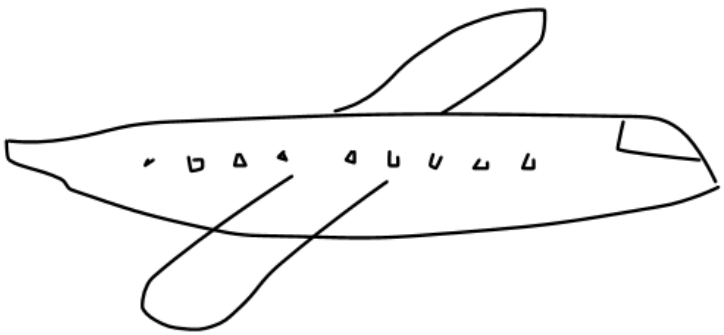

Figure: Original image

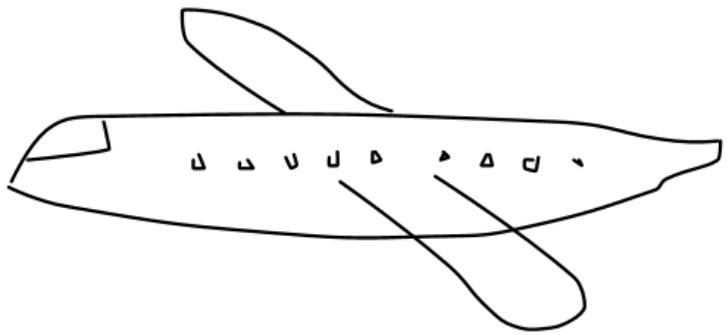

Figure: Mirrored image

Implementation: Erosion

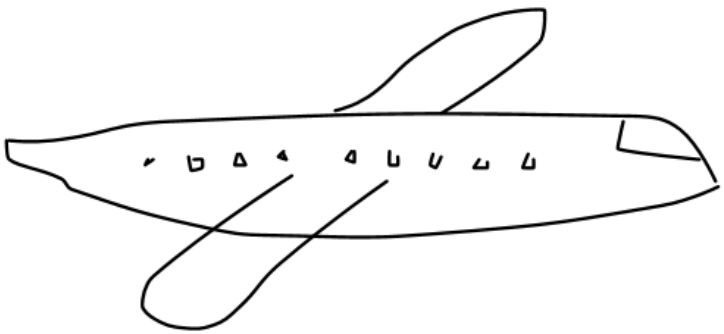

Figure: Original image

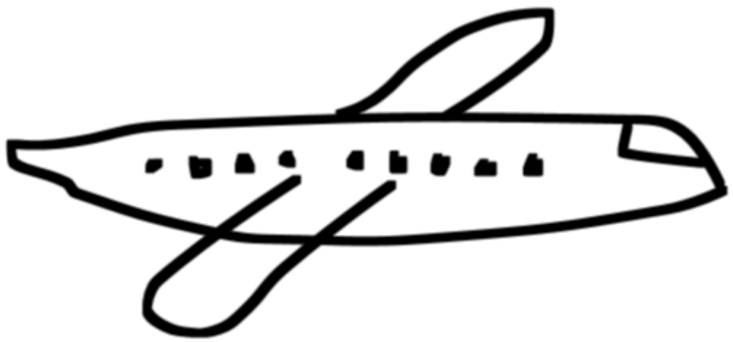

Figure: Image after erosion

Implementation: Rotation

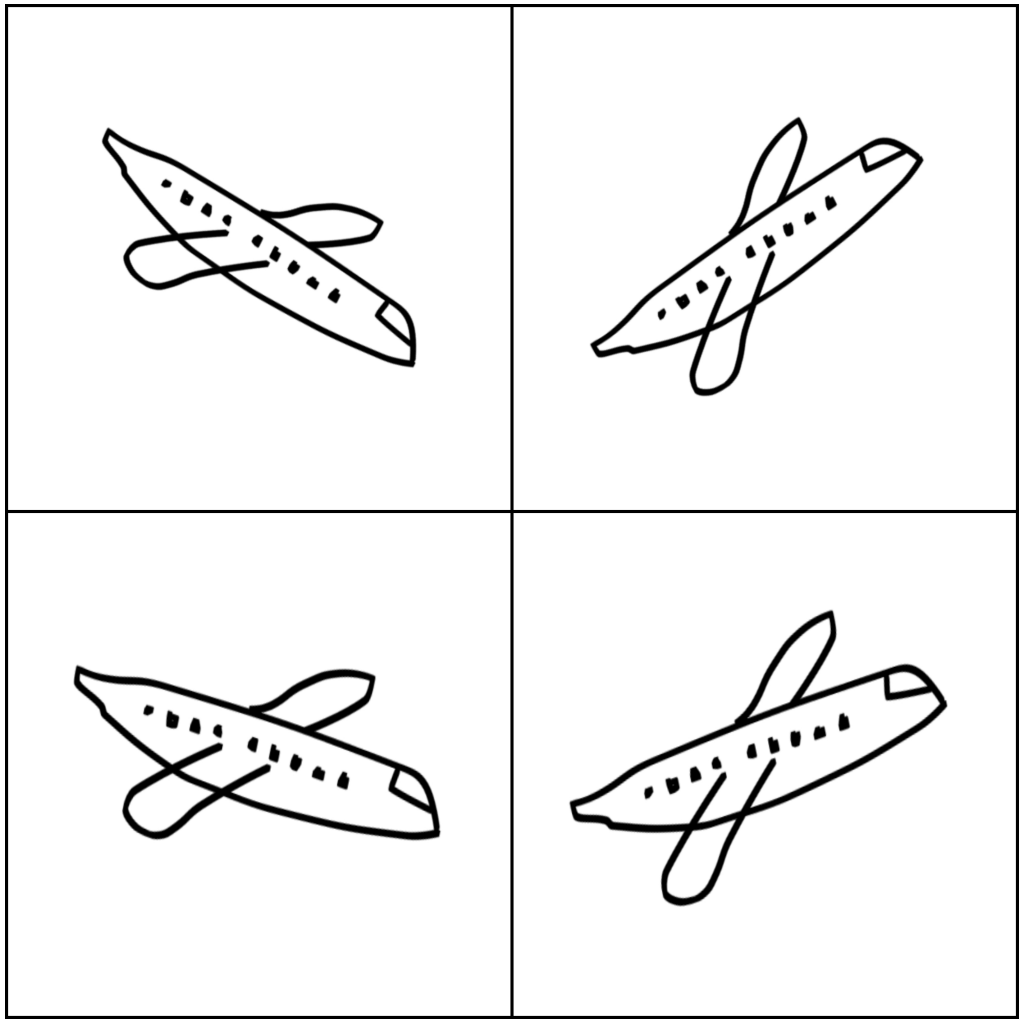

Figure: Rotated images

Implementation: Shifting

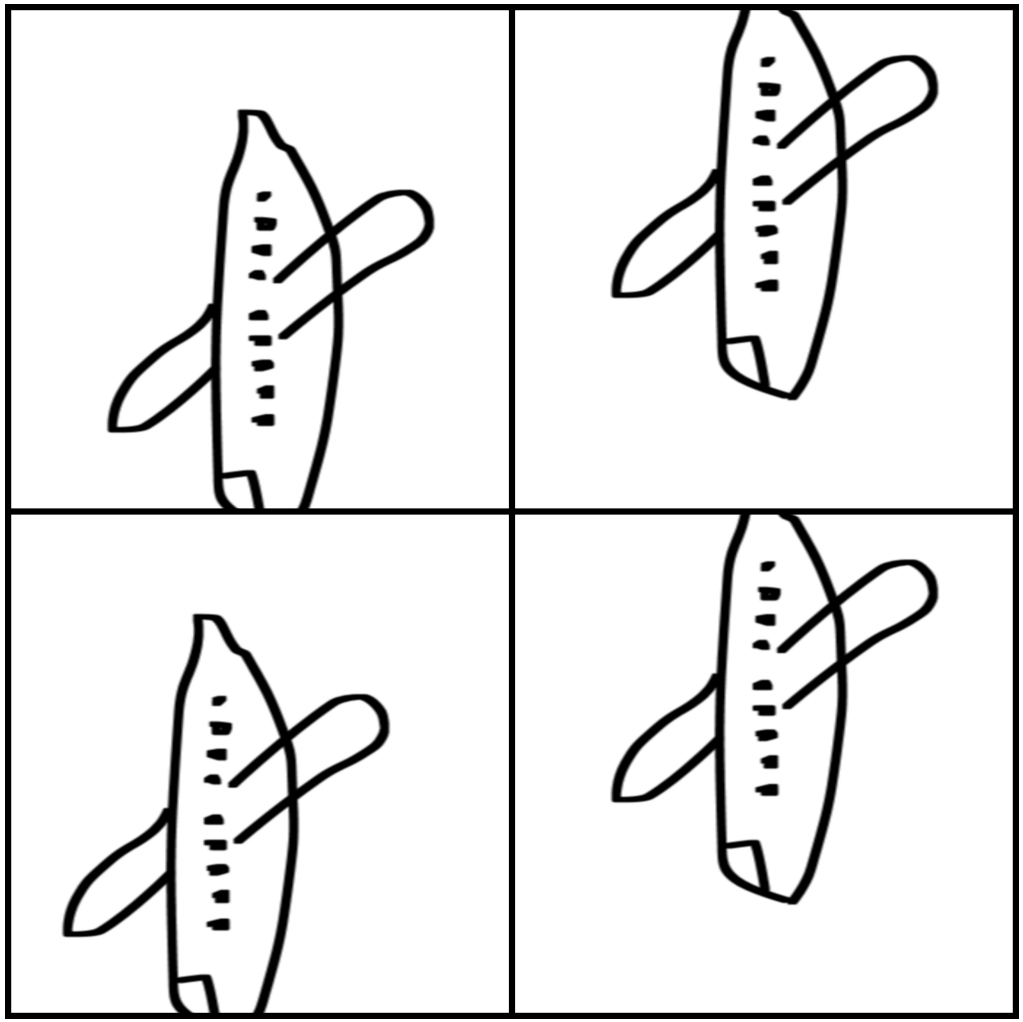

Figure: Shifted images

Implementation: Scaling

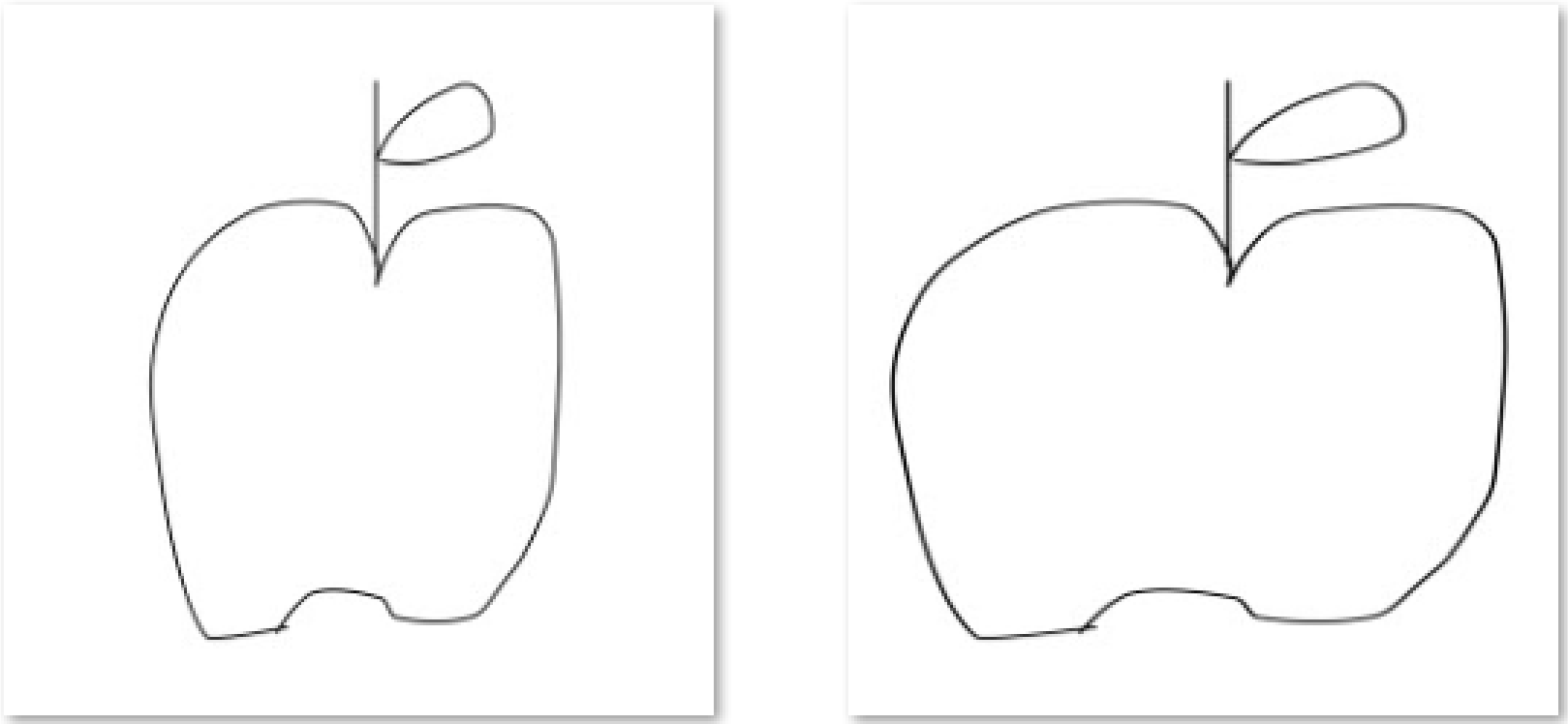

Figure: Scaling of image

Implementation: git commits

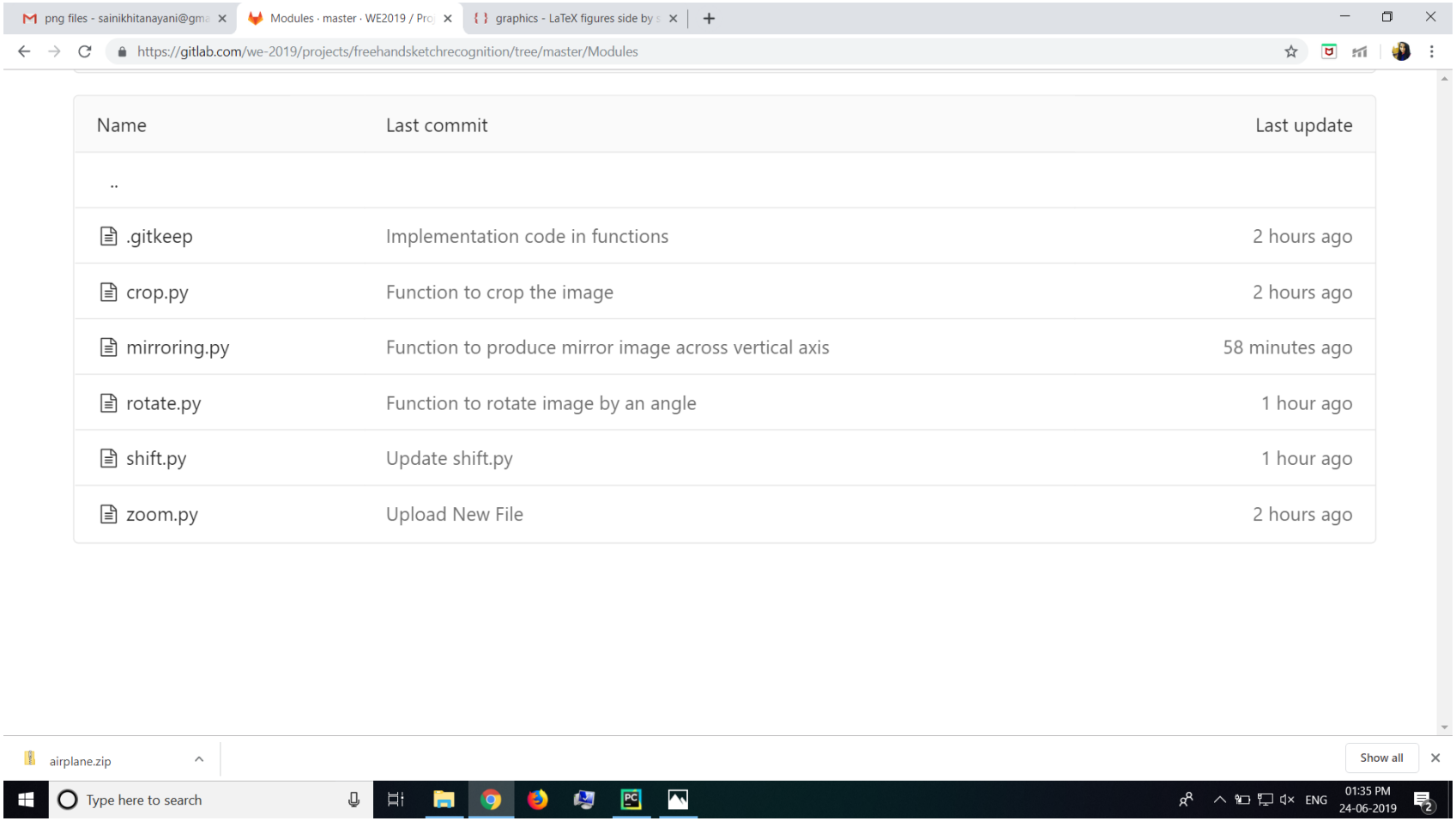

Figure: Commits

Implementation: git issues

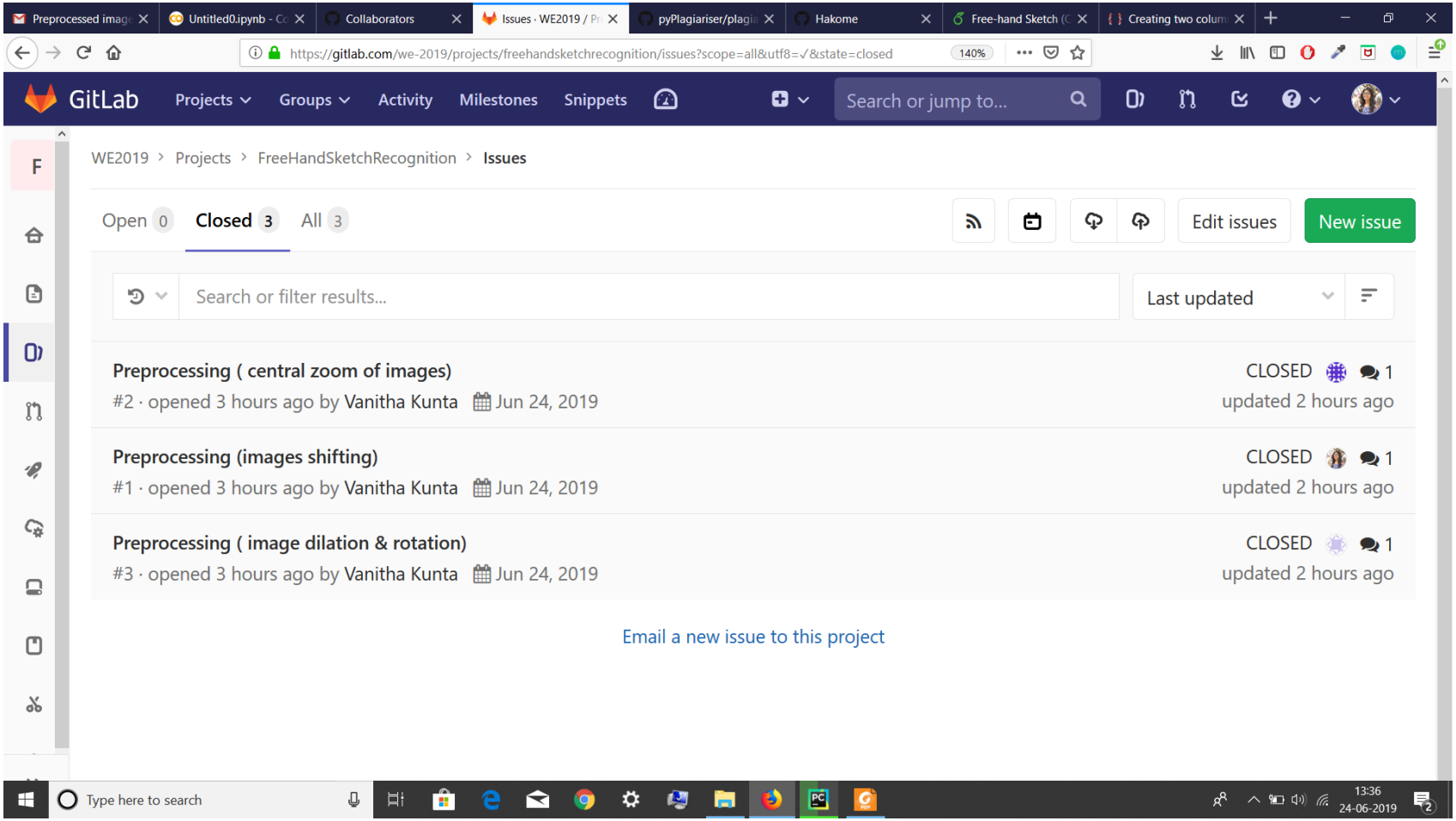

Figure: Issues

Project Plan

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

Discussions