Project 3 - Cilia Segmentation
Team Tamiyo

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PROJECT STRUCTURE

- ❏ Data Organization
- ❏ U-NET for segmentation
- ❏ Video Segmentation
- ❏ Unit Testing
- ❏ Code Documentation

APPROACH - 1

- We used UNET for semantic segmentation
- Data organized to train and test sets
- Resized all the images to an equal size
- Normalized the images
- Built a model
- Saved the model
- Predicted the masks for test dataset

APPROACH - 2

- Tried converting frames of images to a video
- Performed Video Segmentation on it

ISSUES

- Jupyter Notebook was not responsive in GCP while running video segmentation model
- Spent lot of time to figure out the correct approach
- Covid in different part of the world affecting the working environment and motivation

RESULT

- Training dataset had an accuracy of 49%
- Generated masks for test dataset but we didn’t perform well in autograder

LESSONS LEARNED

- Team have gone through research papers before formulating the solutions.
- Had a good learning in image segmentation
- Had a good hands-on experience in Tensorflow, Py-Torch and Keras libraries
- Explored Semantic Segmentation Using Random Forest
- Should have done some debugging on predicted masks to figure out why the outputs didn’t perform well at Auto-Grader