Image experiment analyzer

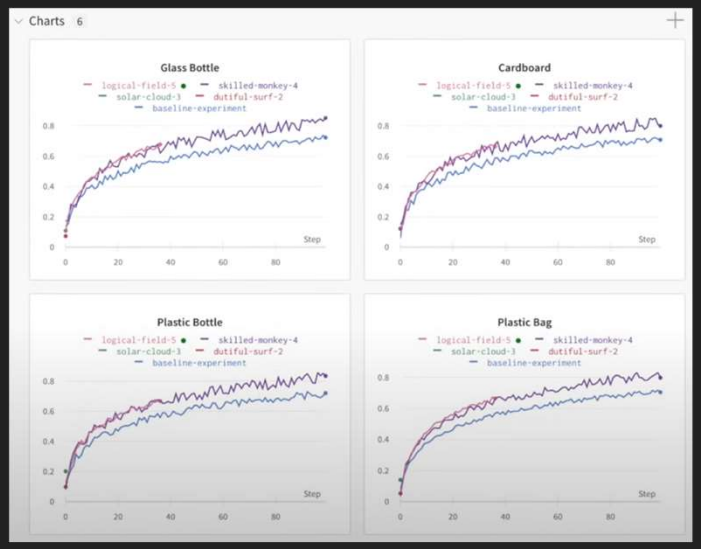
CPSC 547 project proposal

One line pitch

Make a visualizer to debug image/video reconstruction/augmentation computer vision methods

Motivation

- Current tools mainly support hyper parameter visualization only:
  - Tensorboard
  - Weights and biases



- Image level comparison is largely missing
  - From comparison between experiments and ground truth, researchers can figure out what the bug is

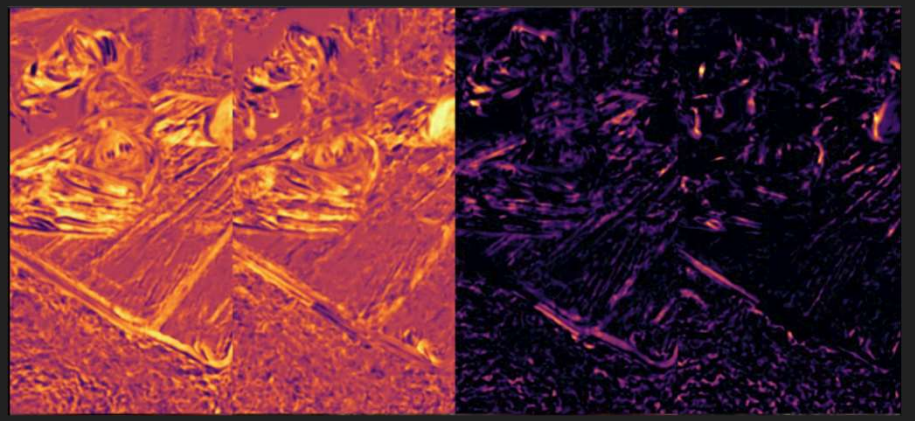
Possible Questions

- Frame comparison

A **B**

Is frame in experiment **A** better than experiment **B**?

- 2d metrics visualization (correspondence with real images)

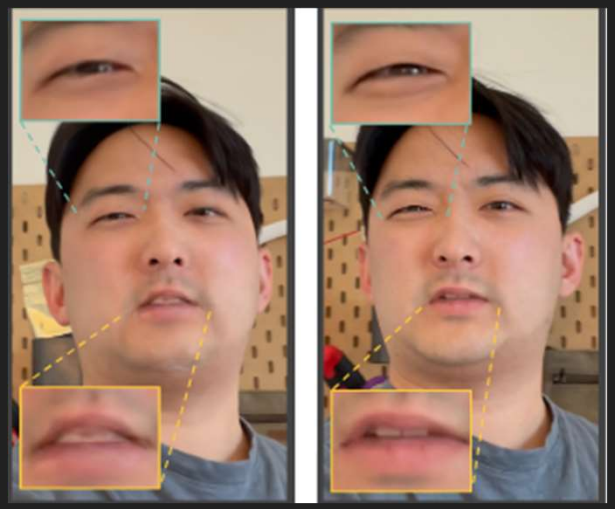


A **B** **A** **B**

Where is the experiment **A** better than experiment **B** in this metric?

Possible Questions

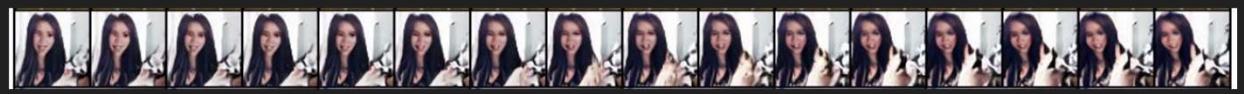
- Zoom in comparisons

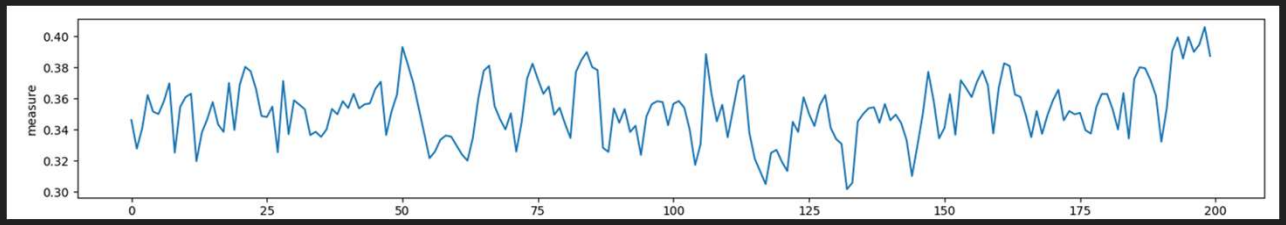


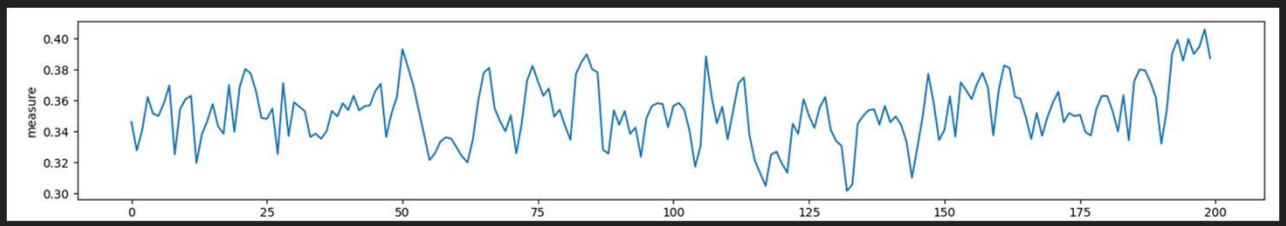
Exploring and comparing experiment details

Are the images aligned?

- Video metric alignment







Which frame is experiment **A** better than experiment **B** under this metric?

Further challenges

- How to “show” motion quality between experiments
- How to compare between multiple experiments
- How to make 2D metric difference obvious
- What kind of data transformation is useful
- ….

miscellaneous

Possible todos

- Talk to domain experts (the researchers)
- Get more data sets

Dataset properties:

- Lots of images
- Many metrics

Looking for partners/Looking for projects to join

- Will probably use python

Thankyou!!