

Hands-on 3 - Background Removal

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Outline

- Background subtraction
- Homework 2

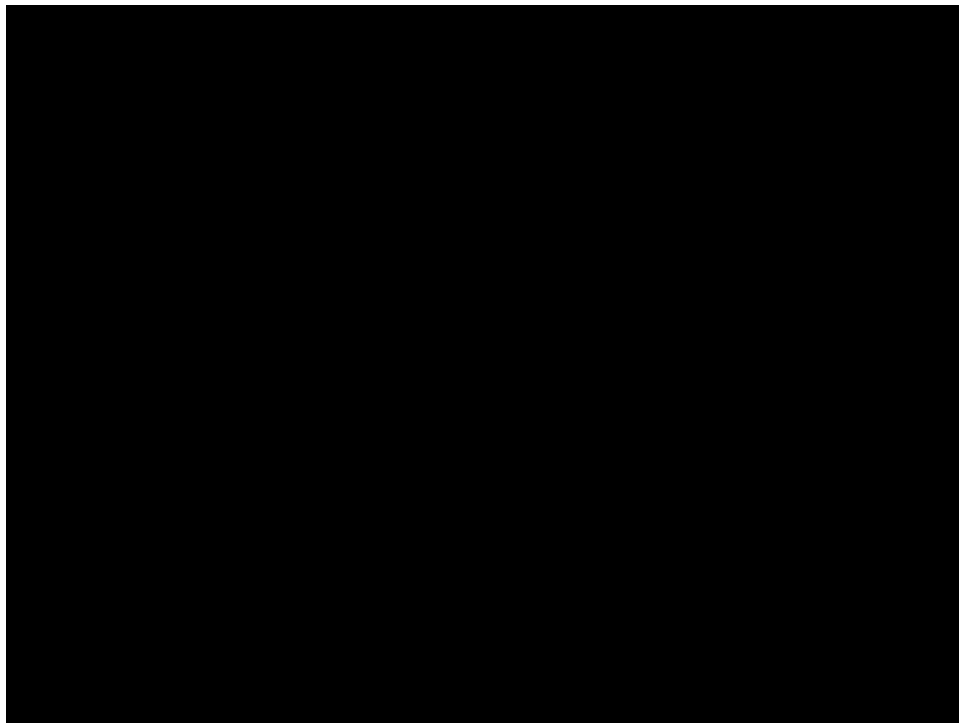
Background Subtraction



Datasets

- Background Models Challenge
http://bmc.iut-auvergne.com/?page_id=24
- Human Activity Video Datasets
https://www.cs.utexas.edu/~chaoyeh/web_action_data/dataset_list.html
- Background Subtraction Websites
<https://sites.google.com/site/backgroundsubtraction/test-sequences>
- Carvana Image Masking Challenge
<https://www.kaggle.com/c/carvana-image-masking-challenge#prizes>

Background Removal Demo



Background Removal Demo



Evaluation - Dice Coefficient

- Dice Coefficient

The Dice coefficient can be used to compare the pixel-wise agreement between a predicted segmentation and its corresponding ground truth.

$$\frac{2 * |X \cap Y|}{|X| + |Y|}$$

where X is the predicted set of pixels and Y is the ground truth. The Dice coefficient is defined to be 1 when both X and Y are empty.

Homework 2

Content

- Programming
- Report
- Video

Programming and Report

- Try to analysis in better resolution.
- Report should contain following information:
 - Select two videos to analyze, please specify which videos you used.
 - Plot matrices
 - Background subtraction comparison
 - Try to analysis performance
 - How to improve performance
 - Summary
 - Anything you want to say ...
- Hand in the video

Hand In

- Due at 2018/03/27 13:00 via ceiba
- A compress file (.zip) contain
 - Jupyter notebook
 - Report
 - Video