

11-Midterm Presentation COSMOP-Project-1

BY: Xiaoqing Liu, Subin Varghese,
Sunita Villarreal

Mentor: Athina Bikaki

Objective

- Generate various quasi-realistic, using Generative Adversarial Networks, immigration images from a smaller dataset of real ones
- Immigration images
 - People carrying bags
 - People with children
 - People crowded around at the border
 - People with border patrol

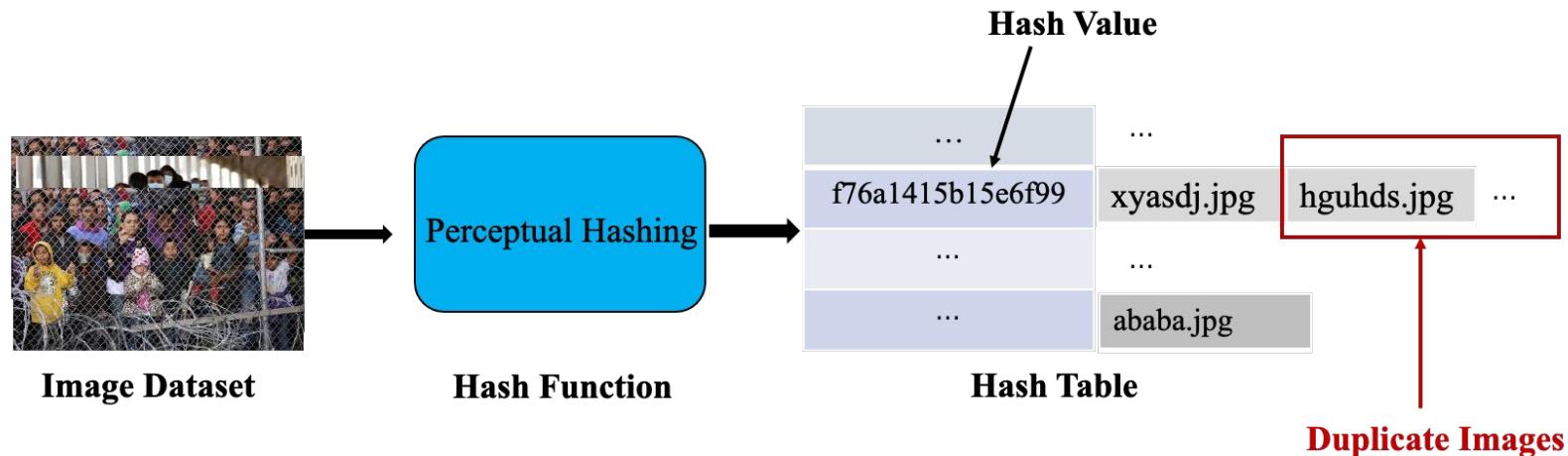
Building our dataset

- Webscraping using
 - selenium webdriver
 - Python
 - Keywords:
 - “[country] + immigration border”
- > 12000 results
- Pre-processing:
 - Remove duplicates
 - Remove images without people
 - Get only relevant images
 - > 1600 results



https://en.wikipedia.org/wiki/List_of_countries_and_territories_by_land_borders

Remove Duplicate Images From Dataset



Remove Duplicate Images From Dataset



Original Image



Gray Image



Resize Image
(32 x 32)

	0	1	2	3	4	5	6	7
0	2695.75	183.03	25.67	-9.87	-28.53	190.49	-209.49	-129.36
1	-35.63	-9.4	48.99	-183.2	-164.72	103.19	94.72	162.46
2	-180.23	-17.94	-187.33	48.69	-97.08	1.02	128.6	-8.86
3	170.07	171.71	110.75	-15.24	175.67	-5.7	-4.93	-46.96
4	0.83	-23.5	36.72	32.19	74.75	-1.5	46.93	-0.62
5	-34.72	-57.99	-18.34	68.62	43.66	-91.67	-12.05	23.01
6	-36.69	41.82	30.53	-50.22	35.3	7.33	-86.91	7.91
7	102.35	17.89	-57.32	13.7	-73.18	-12.67	9.38	19.77

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Low Frequency
(8 x 8)

1	1	0	0	0	1	0	0
0	0	1	0	0	1	1	1
0	0	0	1	0	0	1	0
1	1	1	0	1	0	0	0
0	0	0	0	1	0	0	0
0	0	0	1	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0

c42712e808100080

Hash Value

Binary Matrix

Threshold

Calculate
Average Value

Filter for Humans in a photo

Combine PASS (Asano et al. 2021) and CrowdHuman (Shao et al. 2018)dataset.

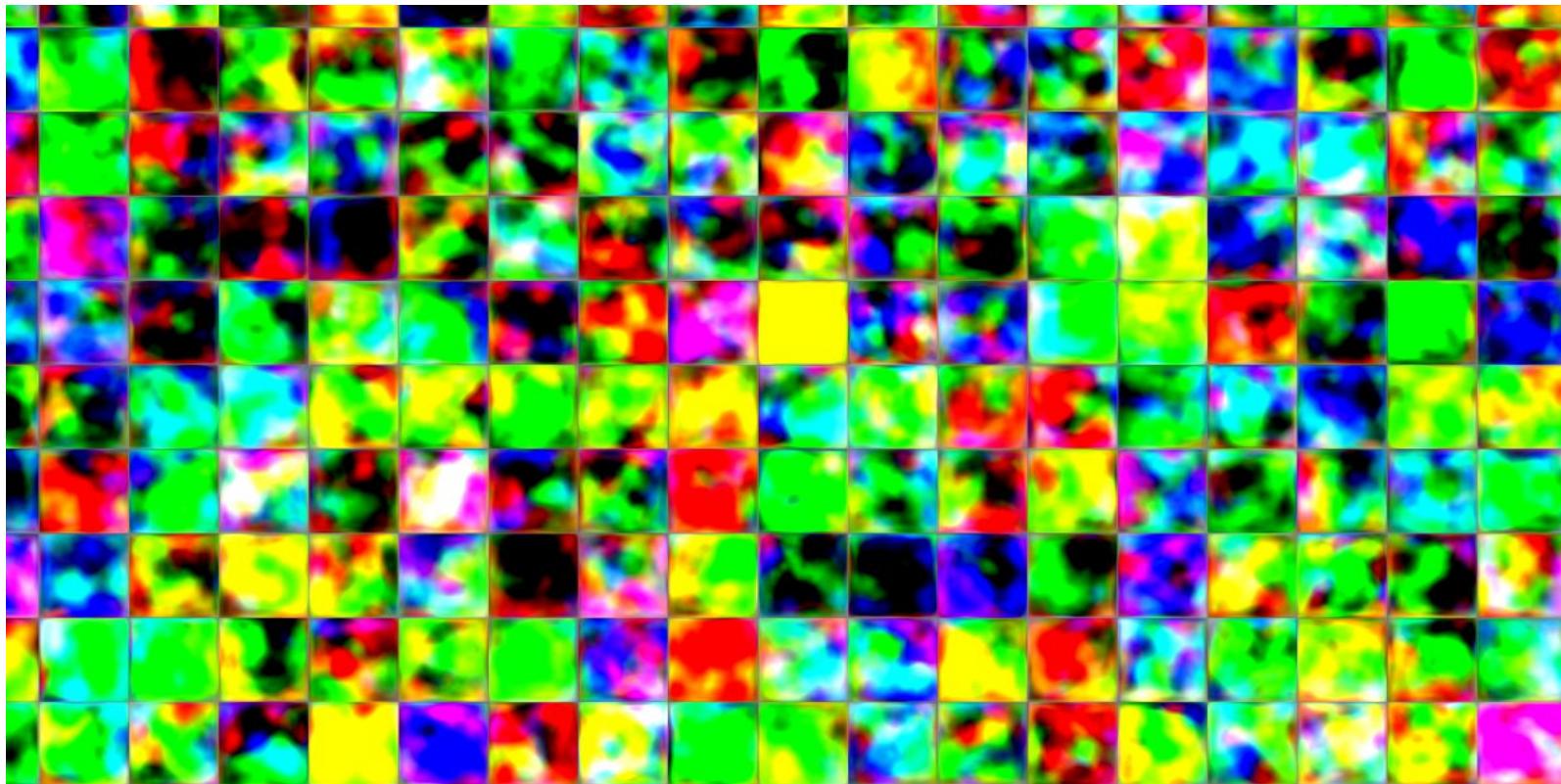
Train a CNN ResNeXt-101_32X8D (Xie et al. 2017) with transfer learning from ImageNet and 3 additional linear layers.



Real Images



Initial Generated Images



2000k images with batch size of 16



4000k images



4000k images

