WEEK 8
COUNTING IN DENSE CROWDS USING DEEP LEARNING

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LAST WEEK

- Improvement in results with fusion of SIFT + CNN
- Generated Codebooks
- Encoded Fisher Vectors
- Discovered problems with Fisher Vectors

CURRENT PROGRESS

FIXED ERROR WITH CNN FEATURES

- Problem with image resizing before extracting features
- Rewrote scripts and extracted features from AlexNet and VGG-VeryDeep-19
- Trained and tested SVM with new features
- Received more improved results in terms of absolute and normalized difference

IMPROVEMENT IN RESULTS

- Haroon's Method:

  Absolute Difference (AD): 324.42, Normalized AD (NAD): 30.91

Last Week Results (only CNN Features from AlexNet):		
Layer	Absolute Difference	Normalized Difference
Relu 6	447.06	38.94
Relu 7	463.07	37.35

Present Results (only CNN Features):		
Layer	Absolute Difference	Normalized Difference
AlexNet Relu 6	324.41	29.37
VeryDeep-19 Relu 6	291.85	28.57

FUSION OF SIFT+CNN FEATURES

Last Week Results: (CNN from AlexNet + SIFT)		
Layer	Absolute Difference	Normalized Difference
Relu 6	297.55	27.53
Relu 7	294.96	27.63

Present Results:		
Layer	Absolute Difference	Normalized Difference
AlexNet Relu 6	295.48	27.14

FISHER VECTORS

Results from Last Friday:		
Type	Absolute Difference	Normalized Difference
SIFT	743.01	56.40
RootSIFT	739.67	55.75

Substituted sift for dense sift features extraction function

Results from Last Friday:		
Type	Absolute Difference	Normalized Difference
SIFT	755.64	58.21

NEXT STEPS

- Retrieve results from 5 pre-trained models
- Continue to work on generating better Fisher Vectors
- Try different kernels and tweaking parameters