WEEK 7
COUNTING IN DENSE CROWDS USING DEEP LEARNING

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LAST WEEK

- Used Different Networks & Layers
- Fused SIFT & CNN Features
- Improved Results
- Received Code for Fisher Vectors

CURRENT PROGRESS

IMPROVEMENT IN RESULTS

- Original Results:

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

- Fusion of SIFT Features with CNN Features from AlexNet:

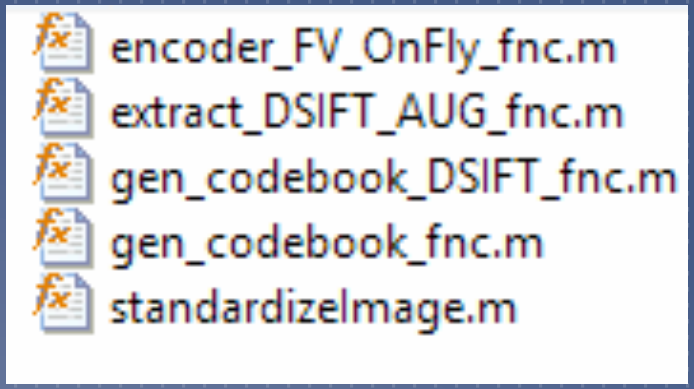
Relu6 + SIFT with L1 Normalization:
Absolute Difference (AD): 297.55, Normalized AD (NAD): 27.53

Relu7 + SIFT with L1 Normalization:
Absolute Difference (AD): 294.45, Normalized AD (NAD): 29.31

Relu6 + Relu7 + SIFT with L1 Normalization:
Absolute Difference (AD): 294.96, Normalized AD (NAD): 27.63

FISHER VECTORS

- Reviewed code for generating Fisher Vectors
- Generated Codebooks with 4000 descriptors per image
- Extracted Dense SIFT and RootSIFT features
- Encoded fisher vectors for all of the patches
- Ran training after generating linear kernels using the Fisher Vectors



INITIAL RESULTS

Fisher Vectors with SIFT features:
Absolute Difference (AD): 743.01, Normalized AD (NAD): 56.40

Fisher Vectors with RootSIFT features:
Absolute Difference (AD): 739.67, Normalized AD (NAD): 55.75

- Discovered some problems and made changes to code
- Re-running code and generating new codebooks currently

NEXT STEPS

- Fix Errors in Generating the Fisher Vectors
- Use various sizes of patches for Fisher Vectors
- Apply Work to Videos