

# Report Meeting – 6/18

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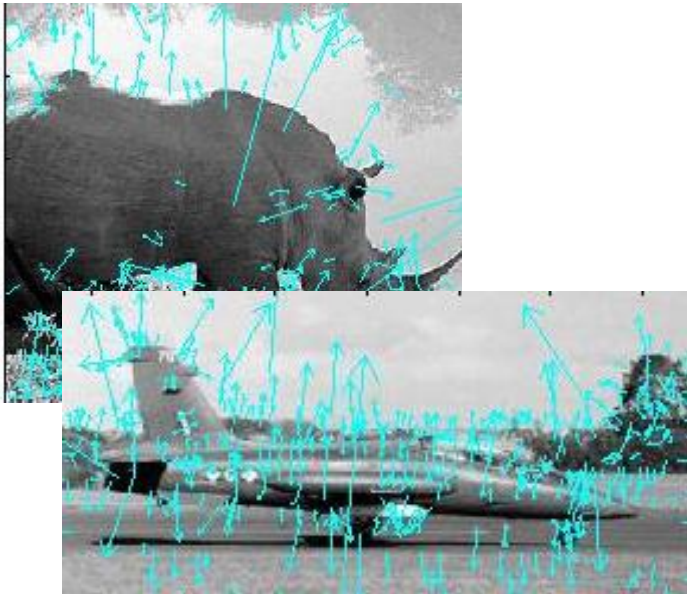
# Visual Bits

# Outline

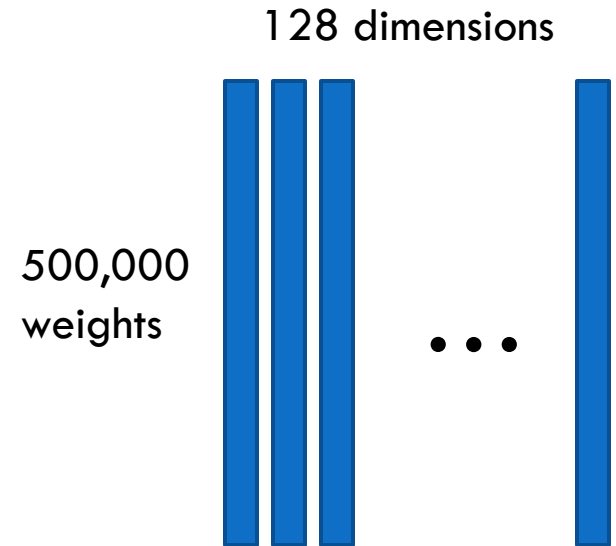
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- Visual Bits are used as a way to combine both codebook generation and classifier training into a single framework.
- Instead of using optimization to find the weights and threshold, generate many weights and find the best one.

# Steps for finding the visual bits

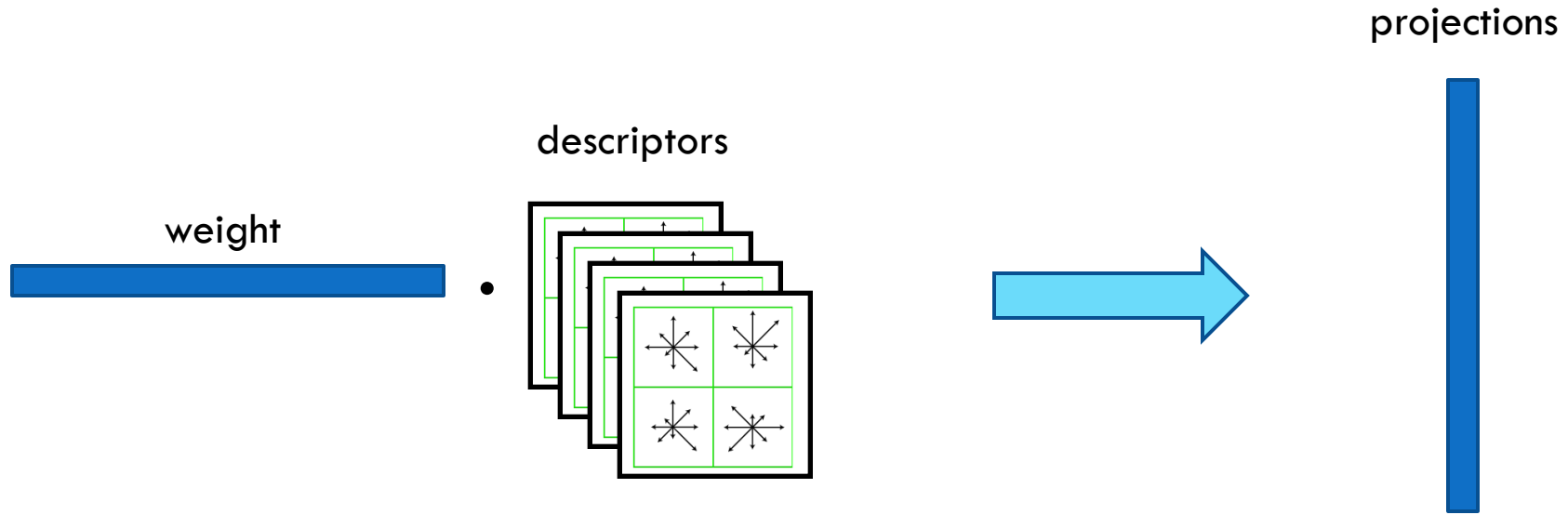


1. Take both positive and negative images and find the SIFT descriptors.



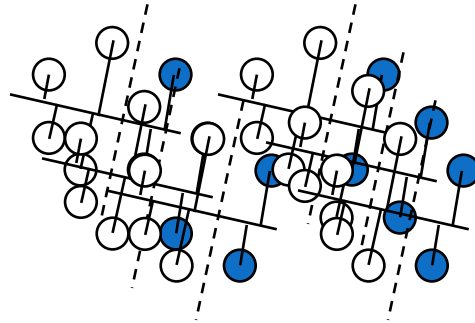
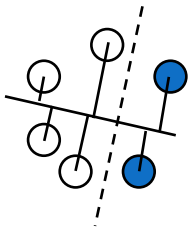
2. Randomly generate matrix of weights, with a mean of 0, and a standard deviation of 1.

# Steps for finding the visual bits



3. Find the dot product of one of the weights, with all of the descriptors.

# Steps for finding the visual bits



1  
0  
1  
1  
1  
0  
1  
0  
1

4. Find the threshold that correctly classifies the descriptors the best

5. Repeat for other weights, and find the best weight and threshold that correctly classify the descriptors the best

6. Use the weight and threshold found in order to classify the descriptors for the first column of visual bits

# Progress and Results

- Found SIFT code
- Created distribution of weights
- Created function in order to determine best weights and threshold
- For the first column of visual bits, it is only a little bit better than chance, at 57%

# Plan

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- Research boosting in order to find next columns of visual bits
- Crop images to make sure I am getting the right features from the images
- Try different distributions of weights
- Find ways to speed up calculations