Assignment 2a

Segmentation

- Pick 5 images from Berkeley Segmentation dataset
- Run Kmeans and Meanshift
- Show results along with the ground-truth

Assignment 2b

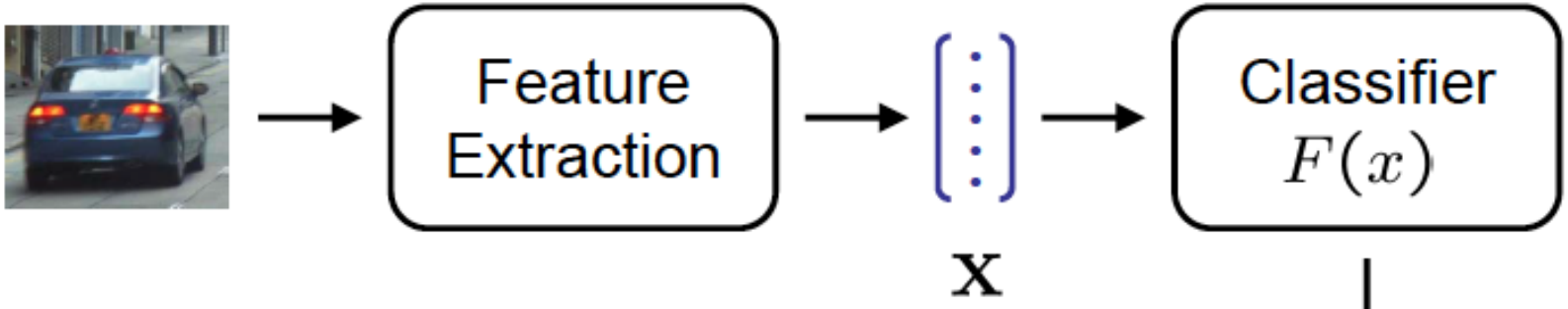
- Play with Panorama
- Use this code
- http://ramsrigoutham.com/tag/ransac/

- and stitch together a panaroma
- Explain how SURF is different from SIFT (10 sentences)
- Briefly explain the main principles of FLANN matching (5 sentences)

Assignment 2c

- Implement Bike vs Horse Classification
- Dataset is available on LMS
- Use Bag-of-visual words approach (SIFT/SURF + K-means + Logistic Regression/KNN)
- Explain the procedure and your approach and observations

Object Recognition - summary

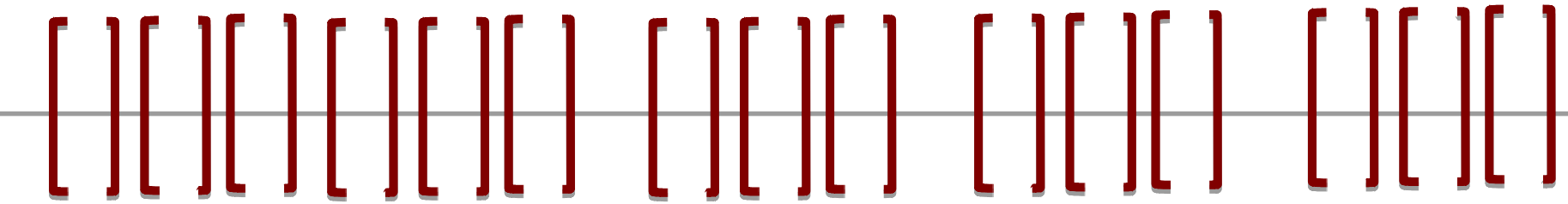


- Features usually engineered
- Classifier learnt from data

Extract interest points and descriptors for every image

Cluster centers

K- Means Clustering



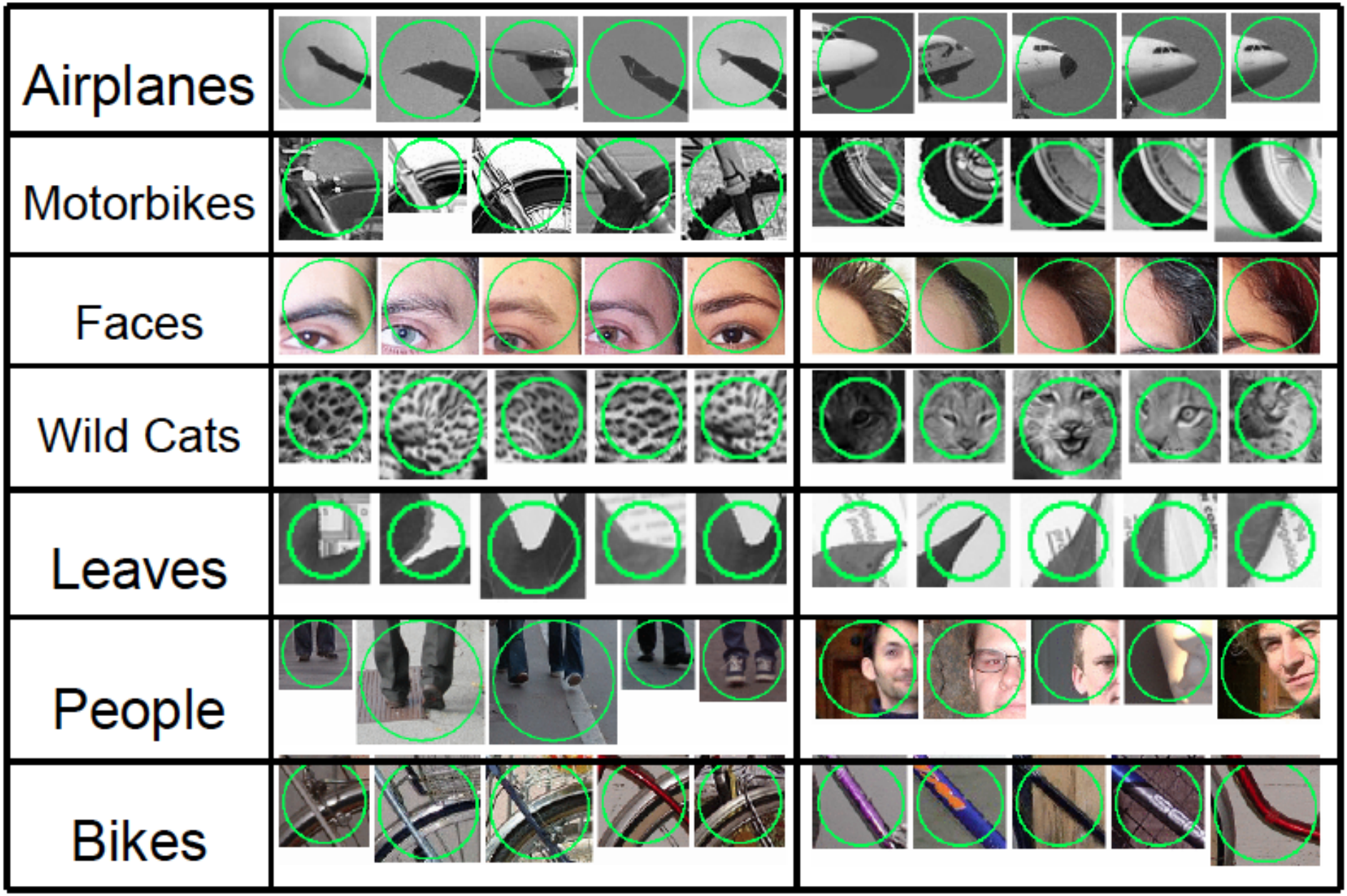




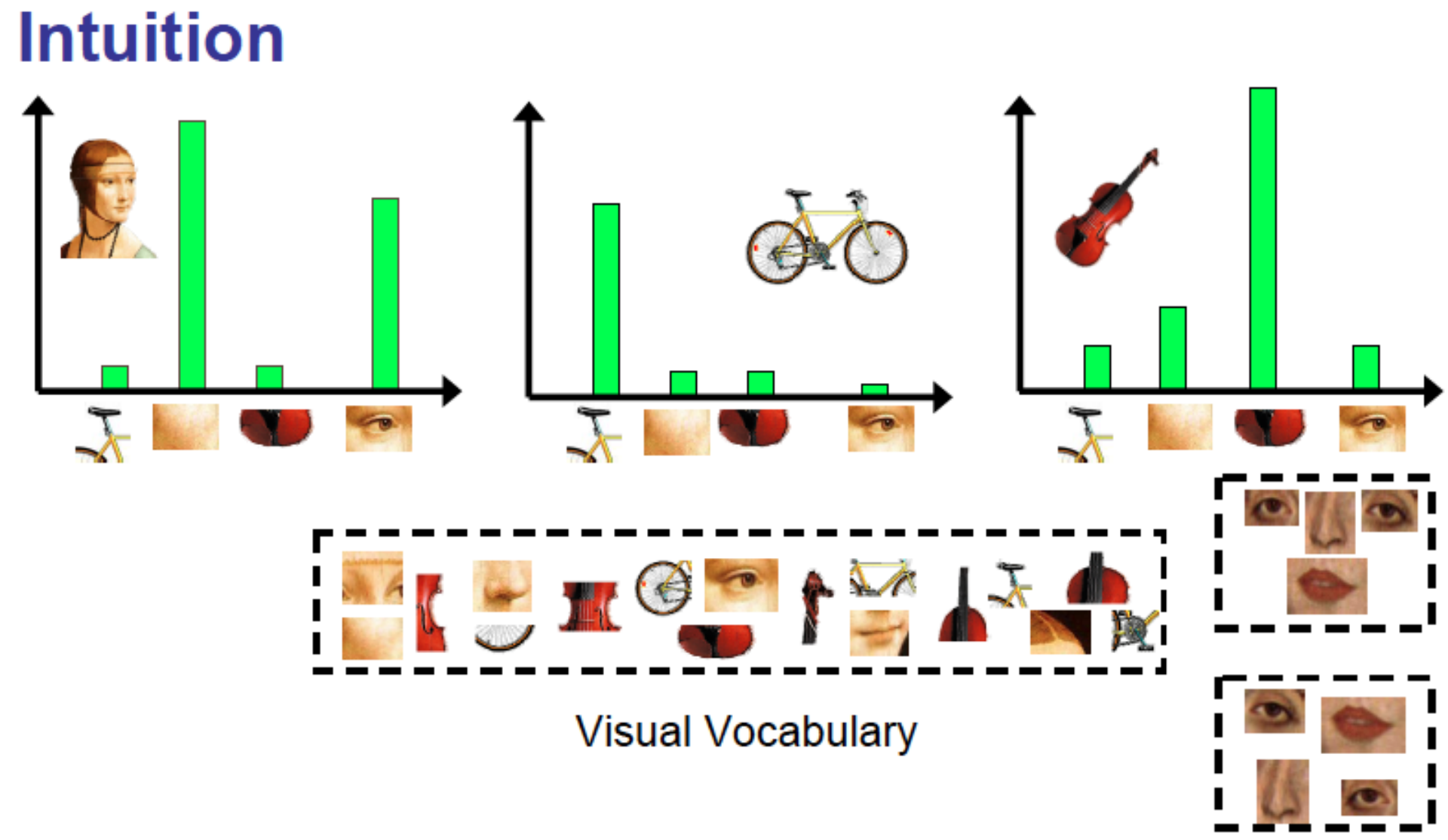




Examples for visual words



Object recognition



Machine Perception

Hierarchy of concepts

Application/System (Surveillance)
    MP Module (e.g Face Recognition)
        ML task (e.g Multiclass Classification)
            Features, Models (e.g Logistic Regression)
                Optimization algorithm (e.g gradient descent)