

# RECOGNIZING SCENE CATEGORIES OF HISTORICAL POSTCARDS

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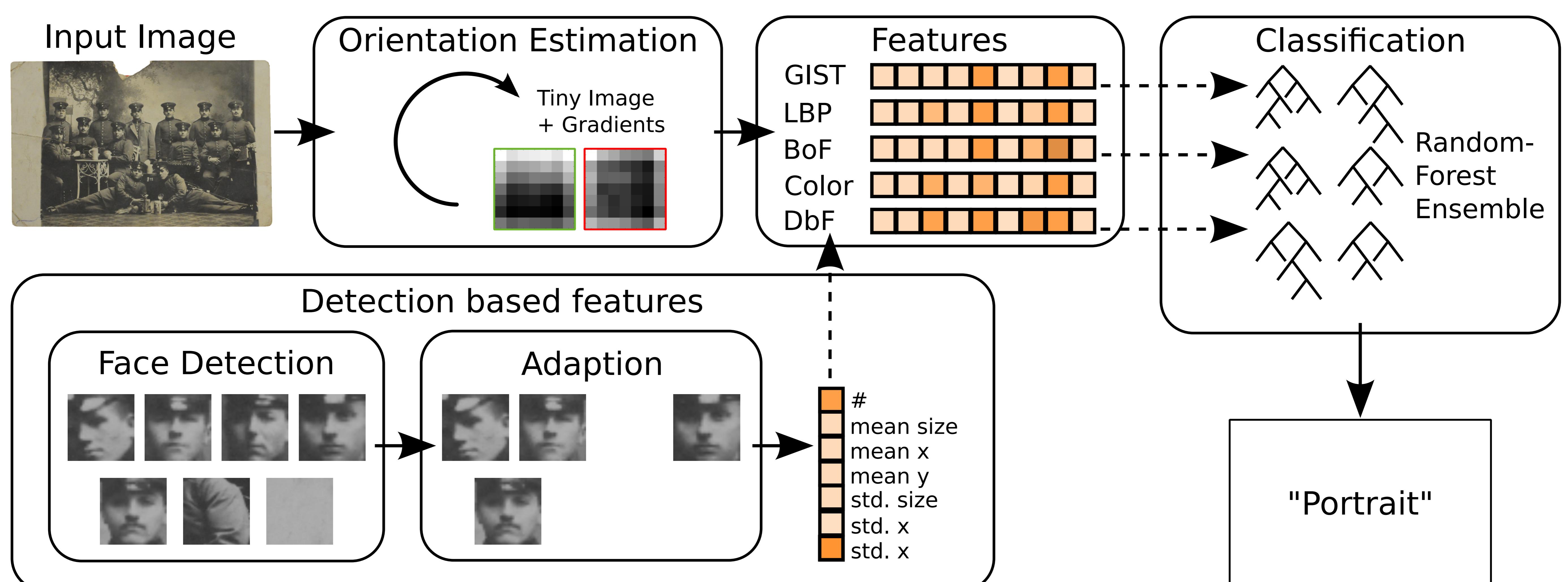
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## Abstract

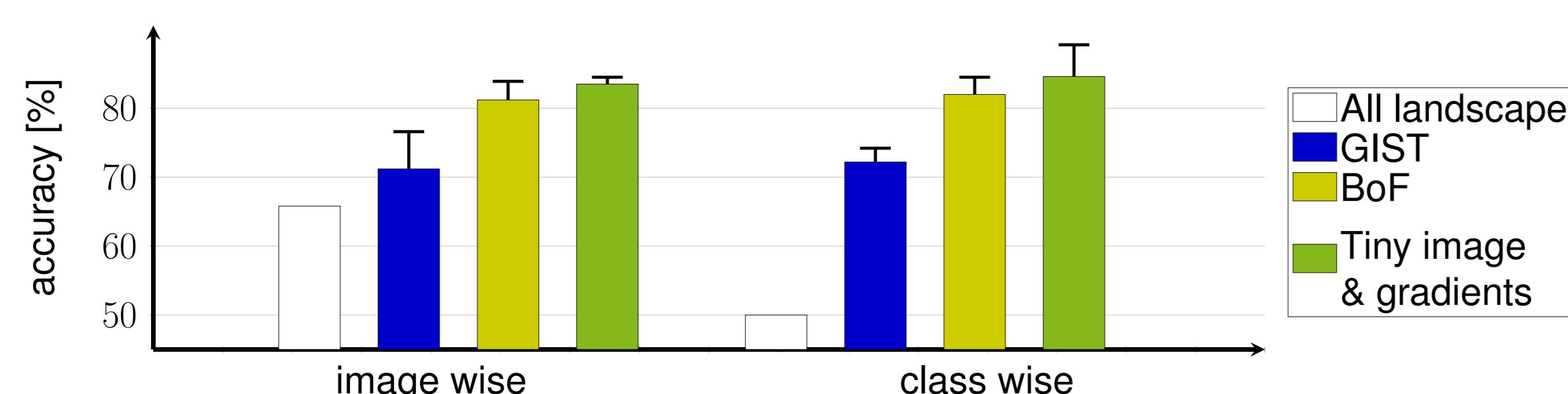
The recognition of visual scene categories is a challenging issue in computer vision. While most applications are focused on private or web image collections, some of the largest unorganized image collections are historical images from archives and museums. Here, a new dataset is presented that contains a challenging collection of postcards from the period of World War I delivered by the German military postal service. The categorization of these postcards is of greater interest for historians in order to gain insights about the society during these years. For computer vision research the postcards pose various new challenges such as high degradations, varying visual domains like sketches, photographs or colorization and incorrect orientations due to an image in the image problem.

## Method



## Results

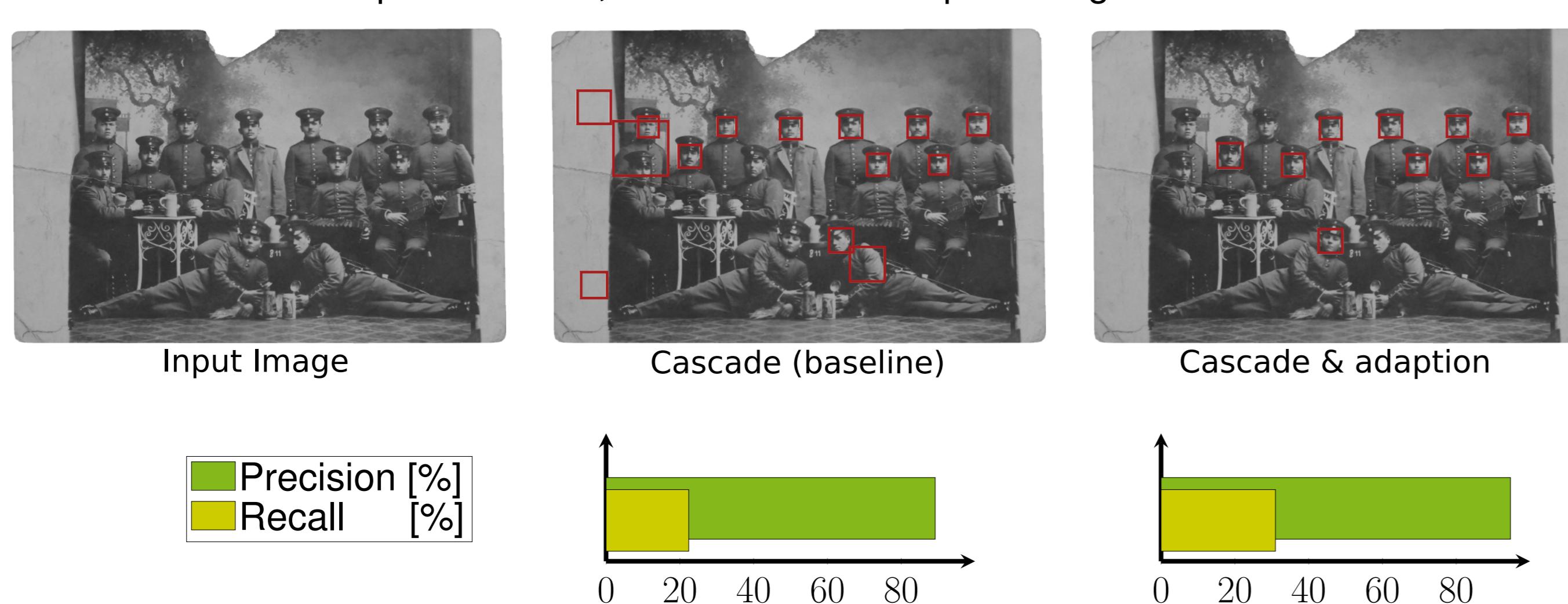
### Estimating orientation



Number of correctly oriented postcards after the pre-processing on a validation set of 256 postcards. 65.8% of the images in the validation set are landscapes and thus already correctly oriented without any processing.

### Detection driven features

Detections that allow inferring knowledge about the categories could be buildings, persons, their faces or texts like poems. Here, faces are the most promising ones.



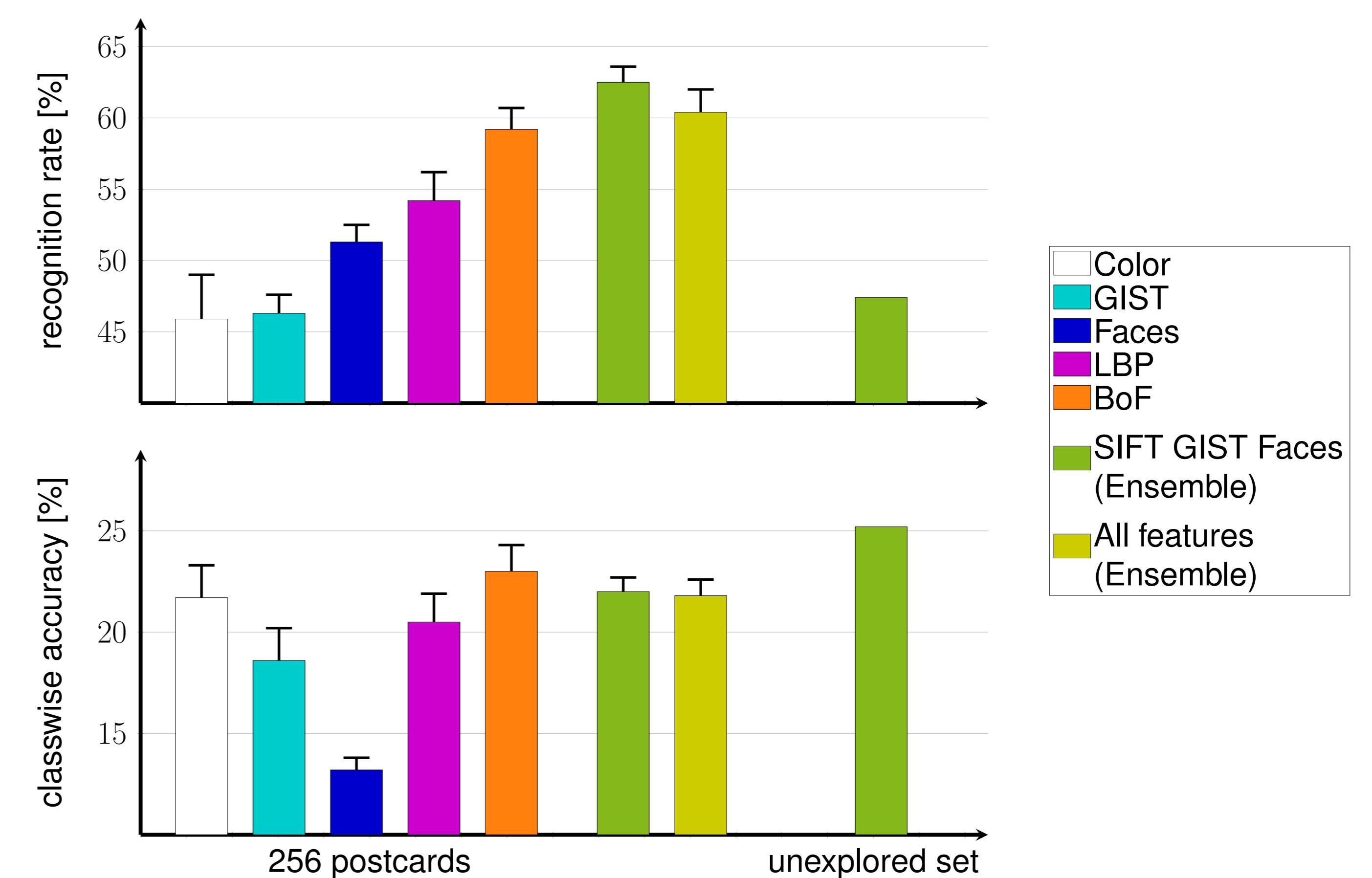
Face detection on the validation set of 256 postcards (GT oriented). The detector that is adapted to the historical postcards is compared to a baseline detection cascade using a fixed threshold and scaling factor.

## Feldpost



Examples of German *Feldpost* from World War I. All postcards belong to a private collection [1]. From the categories studied in [2], the following eight categories could be clearly identified in the collection (top left to bottom right): *cartoon*, *destruction*, *love & poem*, *patriotism*, *frontline*, *landscape*, *portrait* and *weapons*.

## Recognition of thematic categories



Classification results for different features (cf. [3]) and feature ensembles on the 256 postcard dataset and a large unexplored set with more than a thousand postcards (recognition rates could only be estimated as no ground truth is available).

## References

- [1] Bley, B.: Feldpostkarten im 1. Weltkrieg (Feldpost Postcards of WWI). *Private Collection*
- [2] Brocks, C.: Die bunte Welt des Krieges: Bildpostkarten aus dem Ersten Weltkrieg 1914-1918 (The Colorful World of the War: Picture Postcards from the First World War 1914-1918). Klartext-Verlag, Essen (2008), (in German)
- [3] Xiao, J., Hays, J., Ehinger, K.A., Oliva, A., Torralba, A.: Sun database: Large-scale scene recognition from abbey to zoo. In: *Computer vision and pattern recognition (CVPR)*, 2010