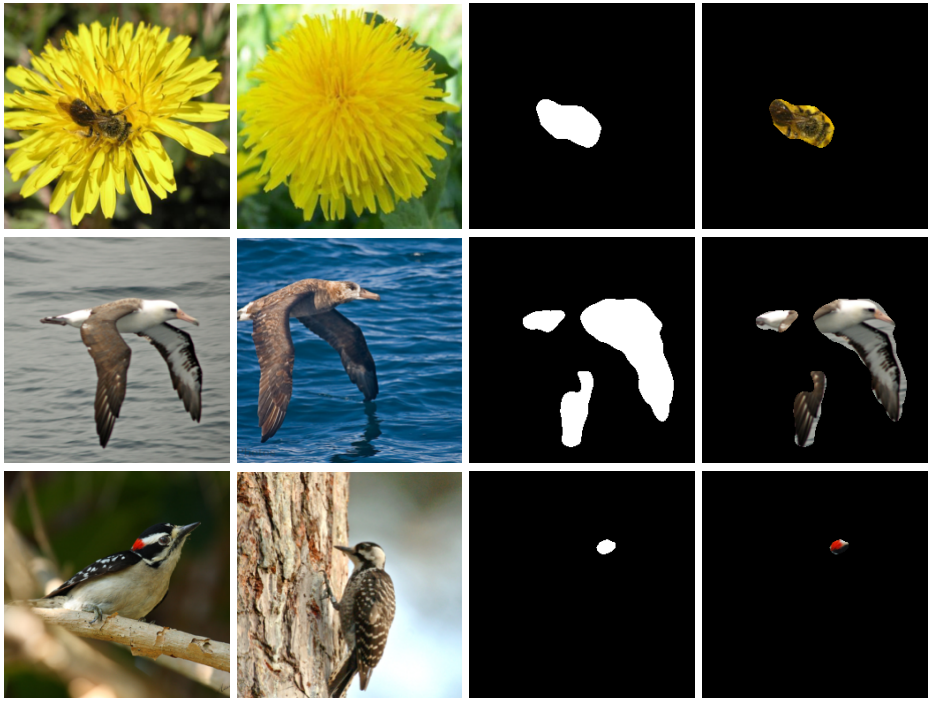

Fig. 1. An evaluation of SPADE on detecting anomalies between flowers with or without insects (taken from one category of 102 Category Flower Dataset [25]) and bird varieties (taken from Caltech-UCSD Birds 200) [33]. (left to right) i) An anomalous image ii) The retrieved top normal neighbor image iii) The mask detected by SPADE iv) The predicted anomalous image pixels. SPADE was able to detect the insect on the anomalous flower (top), the white colors of the anomalous albatross (center) and the red spot on the anomalous bird (bottom).

to 224×224. STC images were resized to 256×256. Due to the large size of STC dataset, we subsampled its training data to roughly 5000 images. To be comparable with [31], we subsampled the STC test set by a factor of 5. All metrics were calculated at 256×256 image resolution, and we used cv2.INTERAREA for resizing when needed. Unless otherwise specified, we used features from the ResNet at the end of the first block (56×56), second block (28×28) and third block (14×14), all with equal weights. We used $K = 50$ nearest neighbours for the MVTtec experiments and $K = 1$ nearest neighbours for the STC experiments (due to the runtime considerations). In all experiments we used $\kappa = 1$.

After achieving the pixel-wise anomaly score for each image, we used smoothed the results with a Gaussian filter ($\sigma = 4$).