

CS 663 Project: Object Detection and Pose Estimation using PCA

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1 Team Members

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2 Aim

To perform object and pose detection on a dataset of 20 objects at 72 different poses

3 Result

Following are the eigenvectors for one of the objects:

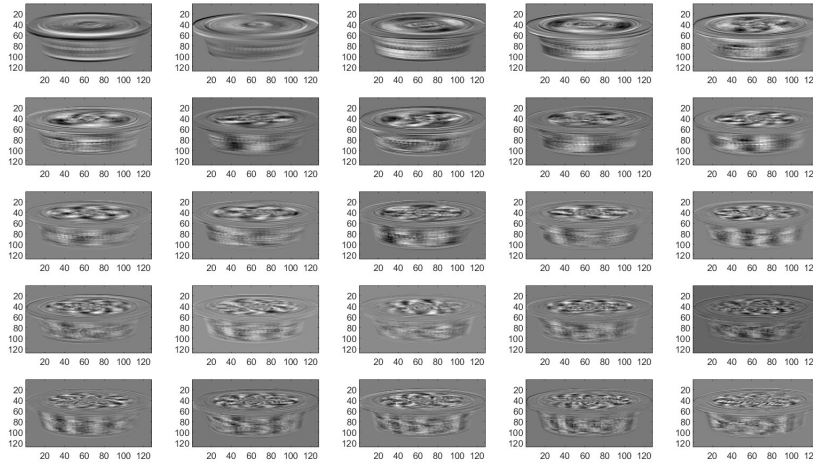


Figure 1: Eigenvectors for one of the objects

Note that the spinning effect in the images is due to multiple rotations of the object image being present in the test dataset. We obtained an accuracy close to **100%**.

4 Conclusion

- We first detect the object using a global eigenspace, and then detect its pose using a smaller eigenspace consisting of images of only that object.
- This method can be improved by using interpolation methods on a parametric representation of the eigenspaces.