A method for 3D shape reconstruction

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In this seminar we will outline a well known method for 3D reconstruction of objects. In the field of Computer Vision (CV) we want to, among other things, reconstruct objects from images. Common methods outlined in earlier presentations in this seminar series have used multiple images, either taken consecutively after each other or simultaneously through several cameras. These methods present their own strengths and their own problems which were covered in these presentations. We will instead use only one image, from an ordinary camera, usually described as *3D RGB monocular shape reconstruction* or similar. By using only one image we get an ill-posed problem with infinitely many solutions, however humans can often make reasonable estimates.

The method uses a learnt low-dimensional shape-space constructed via Procrustes algorithm and principal component analysis. The method in itself does not require any Machine Learning (ML), however today ML is used to enhance the results. Apart from the outline of the method we will also show some results from influential papers using this method and maybe a few images from my own research.