

Project 3:

Use the Affine Structure from Motion (ASFM) algorithm provided in the course webpage to recover the 3D structure of a rigid object. You can take your own images, download them from Internet, or use the images provided in the course webpage. Remember that the object needs to be a rigid object.

Use the image sequence of your choice to:

- Manually mark a sufficiently large set of point correspondences in each image.
- Use this set to recover the Euclidean shape using the software provided.
- Draw the 3D reconstruction of the object using the 3D points obtained.
- *Advance problem:* Using an affine or the perspective pinhole camera model calculate the projection matrix \mathbf{M} that projects the 3D points (recovered by the ASFM algorithm) to your 2D image points. Use \mathbf{M}^{-1} to map the 2D texture of the object onto of the 3D structure. Trick: Use each point triplet to define a plane.

Example:



Image 1:



Image 2:



Image 3:



Image 4:

3D Reconstruction:

