

Human Motion Capture and VR Avatar Mapping

Human 3D pose estimation

- Image-level nodal points detection
- Perform the same in two images
- Use camera calibration parameters to estimate the location of the human with reference to any one of the camera
- Transform the location to a global frame of reference somewhere on the floor of the studio
- Measure relative movements of limbs as per the requirements of the VR avatar object

VR Avatar mapping

- Map the floor space in the studio to the VR scene
- Identify the global origin in the VR scene and map to the global origin of the real world studio
- Map the essentials of the VR avatar as measured from the CV based pose estimation

Synchronized Image Acquisition using the Adlink API (You may keep this work for the last and depend on the other team performing a similar work)

- Learn Visual Studio GUI
- Apply CV algorithm to the images acquired