Instructions

The Human Motion Analysis web based visualisation loads with a point cloud on the left of the screen and the radar chart on the right. The page is loaded with a radar chart based on a default configuration of trial 12, the right leg, the head body segment with the component being X translation at cycle number 1. The point cloud is also based on this default setting.

The axis refers to fixed periods within the gait cycle. Each axis is abbreviated and have the follow description: initial contact (IC), opposite toe off (OT), heel rise (HR), opposite initial contact (OI), toe off (TO), feet adjacent (FA), tibia vertical (TV).

Figure 1 shows the controls offered to the end user to generate the D3 radar chart. The controls consist of select lists and one button. From the left the user selects the trial number, leg (right or left), the body segment (head, thorax or pelvis), and the body segment component (X, Y, Z translation or Rx, Ry, Rz rotation). Finally the end user selects the cycle of interest and then clicks 'D3' to generate the radar chart.

Figure 1. Radar controls.

Figure 2 shows the controls offered to the end user to rotate the human point cloud. The intent is to allow the user to rotate the point cloud to better understand the relative meaning of the points. In other words adding movement to the points enhances the user understanding of the position of the points with reference to the human body. The scaling is offered to the user to zoom in or out of the point cloud.

Figure 2. Human controls (point cloud controls).

Regarding the point cloud, blue points are the original landmarks from the motion capture system, the red points are the derived joint centres and the green points are the derived origin to the body segments.

The radar plot offers tooltip for the user to extract the measured values at the point of interest. Also by clicking on a point within the radar chart updates the point cloud to the position the human was in when the data was captured – captured by the motion capture system.

The user explores the dataset through the radar controls. The human gait dataset used is available at:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4419525/