

### Instructions on processing the profiles for the framework's database:

1. Copy '*...\data processing for profile*', '*...\OUTPUT*', and '*...\Profile Data*' folders to '*...\MATLAB7\work*'.
2. Run *data\_processing\_for\_database\_gender\_race.m* in '*...\Processing for the framework's database\data processing for profile\sampling profile for each gender and race*'
3. Run *PCA\_process\_gender\_race.m* in '*...\Processing for the framework's database\data processing for profile\PCA for each gender and race*'.
4. The result is shown in '*...\OUTPUT*'.

#### **NOTE:**

Data of files in '*...\Processing for the framework's database\Profile Data\...\Joint length*' are arranged as the follows:

ROW 1	Data for key posture 1 (a fully extended arm)	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
		Upper arm vector			Lower arm vector			Distance of shoulder joint to the elbow joint
		X (is always zero because the profile is located on Y-Z plane)	Y	Z	X (is always zero because the profile is located on Y-Z plane)	Y	Z	
		Column 8	Column 9	Column 10	Column 11	Column 12	Column 13	
		Distance of UAF location to the elbow joint	Distance of UAM location to the elbow joint	Distance of E location to the elbow joint	Distance of LAM location to the elbow joint	Distance of LAF location to the elbow joint	Distance of wrist joint to the elbow joint	
.....								
ROW 4	Data for key posture 1 (a fully flexed arm)	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
		Upper arm vector			Lower arm vector			Distance of shoulder joint to the elbow joint
		X (is always zero because the profile is located on Y-Z plane)	Y	Z	X (is always zero because the profile is located on Y-Z plane)	Y	Z	
		Column 8	Column 9	Column 10	Column 11	Column 12	Column 13	
		Distance of UAF location to the elbow joint	Distance of UAM location to the elbow joint	Distance of E location to the elbow joint	Distance of LAM location to the elbow joint	Distance of LAF location to the elbow joint	Distance of wrist joint to the elbow joint	

Data of files in '*...\Processing for the framework's database\Profile Data\...\ Profile points*' are obtained by tracing and sampled the points on the profiles of the side view photographs in Pro-Engineer. The tracing and sampling of the side view photographs are performed for each key posture and the results are then saved as '*.vda*' files.