

# Depth-based Multi-part Body Segmentation

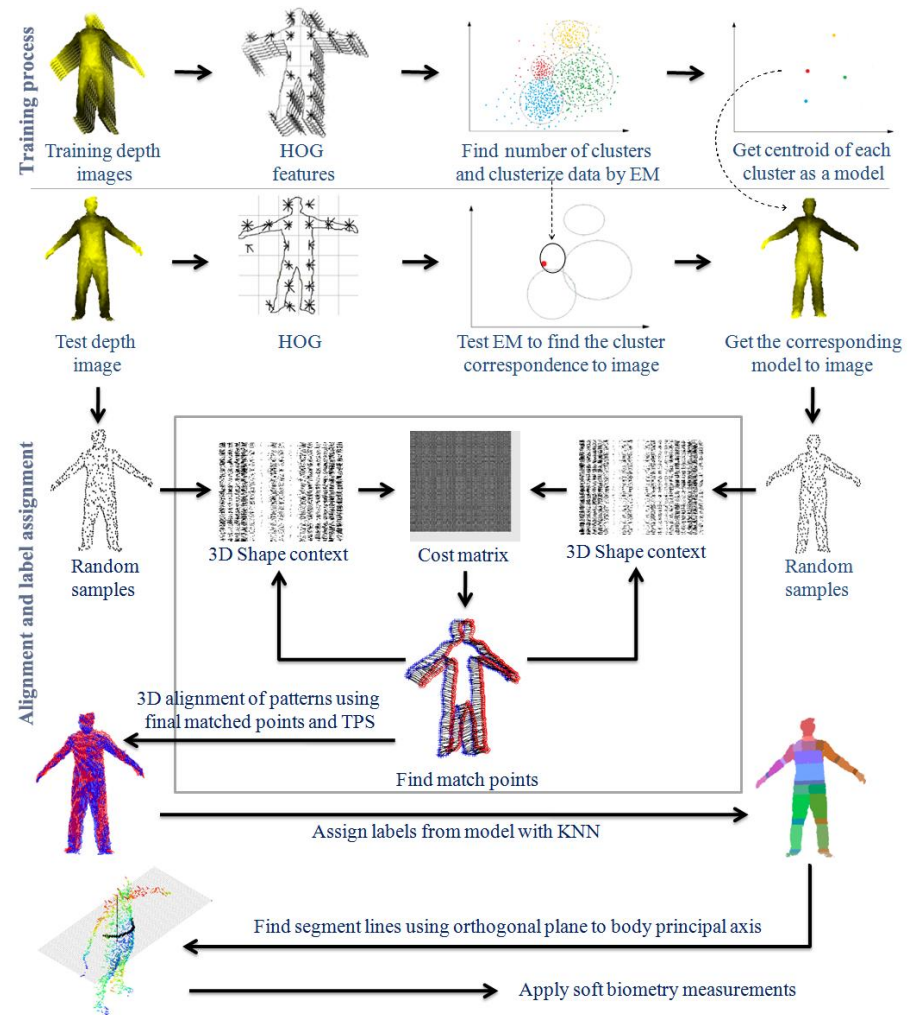
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# Summary of the work

- Clusterize HOG on depth images using EM in training step.
- Get the nearest model from clusters using trained EM.
- Get 3D shape context descriptor from sample points and compute similarity matrix.
- Extract the best match points using LAPJV algorithm.
- Align point clouds using 3D TPS transformation using best match points.
- Assign labels using KNN from aligned model.
- Compute size using intersection points of orthogonal plane to body principal axes.



# Results

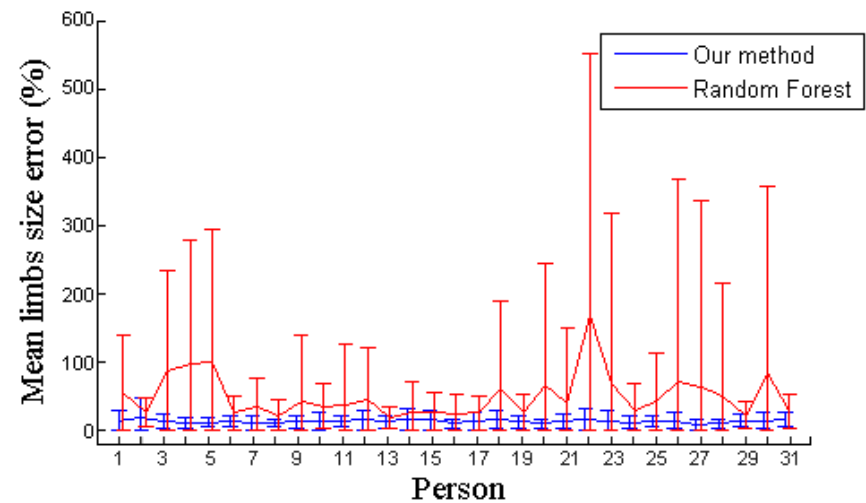
Our method



RF algorithm



Overall size error per person



# Personal challenges and future work

- The most critical part is point cloud registration:
  - Rotation invariant descriptor,
  - Partially occlusions,
  - More complicated poses,
  - Point matching.
- In the future work we apply:
  - A fast retrieval system to find the nearest model,
  - A local vs. global rotation invariant descriptor,
  - More complicated poses.

Thank you for your attention!