

5. Conclusion

Different software was compared in terms of its ability to analyse body deformations. For this purpose, analysis parameters have been defined and described. Different software is presented and compared. It can be concluded that the presented programming languages have a great potential to be used for automated and individualised analyses. However, the open-source software presented, such as Paraview or Meshlab, show a high number of possibilities to also analyse the presented analysis parameters. This software has the advantage of an easy-to-use interface and no programming skills are required. Nevertheless, the combination of using a programming language to bind the software and customise its functions according to needs is the best option. A framework where this step has been done is presented.

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References

- [1] IBV (2020) MOVE4D. Instituto de Biomecánica – IBV, Spain
- [2] KYOSEV Y, TOMANOVA V, SCHMIDT A-M (2022 - 2022) Method for Automatic Analysis of the Clothing Related Body Dimension Changes During Motion Using High-Speed (4D) Body Scanning. In: D'Apuzzo N (ed) Proceedings of 3DBODY.TECH 2022 - 13th International Conference and Exhibition on 3D Body Scanning and Processing Technologies, Lugano, Switzerland, 25-26 October 2022. Hometrica Consulting - Dr. Nicola D'Apuzzo, Ascona, Switzerland
- [3] Brodersen CR, Lee EF, Choat B et al. (2011) Automated analysis of three-dimensional xylem networks using high-resolution computed tomography. *New Phytol* 191:1168–1179. <https://doi.org/10.1111/j.1469-8137.2011.03754.x>
- [4] Zijdenbos AP, Forghani R, Evans AC (2002) Automatic "pipeline" analysis of 3-D MRI data for clinical trials: application to multiple sclerosis. *IEEE Trans Med Imaging* 21:1280–1291. <https://doi.org/10.1109/TMI.2002.806283>
- [5] KYOSEV Y, TOMANOVA V, Spahiu T (2023) Processing Data from High Speed 4D Body- Scanning System for Application in Clothing Development. In: Sayem ASM (ed) Digital Fashion Innovations. CRC Press, Boca Raton, pp 99–123
- [6] SADRETDINOVA N, KYOSEV Y (2022 - 2022) Method for Evaluation of the Motion Comfort of the Clothing for Deaf People Using of High Speed (4D) Scanning. In: D'Apuzzo N (ed) Proceedings of 3DBODY.TECH 2022 - 13th International Conference and Exhibition on 3D Body Scanning and Processing Technologies, Lugano, Switzerland, 25-26 October 2022. Hometrica Consulting - Dr. Nicola D'Apuzzo, Ascona, Switzerland
- [7] SCHMIDT A-M, Schmidt R, Gonzalez GSI et al. (2023) Automated Investigation of the Breast - Bra Interaction Using 4D Scan Data and Oscillation Analysis. In: Scataglini S, Harih G, Saeys W et al. (eds) *Advances in Digital Human Modeling*, vol 744. Springer Nature Switzerland, Cham, pp 52–61
- [8] Wolcott RW, Eustice RM (2014) Visual localization within LIDAR maps for automated urban driving. In: 2014 IEEE/RSJ International Conference on Intelligent Robots and Systems. IEEE, pp 176–183
- [9] Balasubramaniam A, Pasricha S (2022) Object Detection in Autonomous Vehicles: Status and Open Challenges