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FROM 3-D MEDICAL IMAGES TO CUSTOMIZED PATIENT SPECIFIC IMPLANT AND GUIDES

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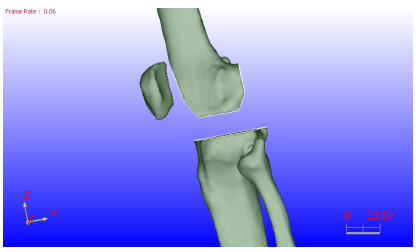
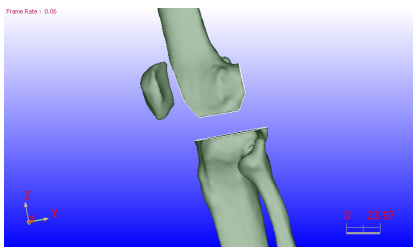
Patient specific technology is slowly gaining popularity and clinical adoption. This presentation will cover the process of 3-D image based modeling and simulation of implants using Volmo proprietary software ImageSim. We will show various case studies of patient specific designs of implants including knee implant. ImageSim has number of features to smooth and filter the data; Filtered data was exported as STL model of full knee. The full knee STL model was then imported into TSV tools available in ImageSim for CAD functionality. Resection of femur and tibia was done in TSV environment. E-sected knee model was imported in solid works software and new components for femur, tibia and polymer insert were designed and exported back into TSV. All the new components and original resected bones were assembled and positioned. New assembled model were remeshed and then volume meshed. Contacts, material properties and boundary conditions were assigned before final model was exported into Ansys for finite element analysis. Static analysis for a full gait cycle was carried out in Ansys and the results obtained will be presented in the conference





Biography

Ash Harkara has completed his PhD from University Pune and Postdoctoral Studies from school of EE, University of Leeds, UK. He is a Founder, Director of Volmo Ltd. He has presented papers in number of conferences and published papers in reputed journals.

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