



Studentische Hilfskraft (m/w)

“Developing FE Mesh of the Human Mandible in 3D”

Monthly working time: 40 hours.

Start date: As soon as possible.

Initial contract length: 3 months with possibility of extension

We are looking for support in the field of dental biomechanics and FE simulation, namely for the development of a 3D FE model based on existing meshes and geometries.

Your tasks are:

- Combining various 3D FE meshes (bones, muscles, teeth, etc.) from various FE software into a single model of the human mandible
- Geometric alignment of all individual components (3D translation/rotation)
- Modifying geometry meshes as required and generating FE-meshes, e.g. generating non-penetrating meshes between bone and muscle

You have:

- Knowledge/experience with FE software and FEM in general
- Experience with generating/modifying/meshing geometries
- Experience with open source meshing software preferred
- Experience with 3D geometric operations (Euler angles, rotations in 3D, etc.)
- Programming skills (MATLAB preferred)

Currently, several models exist of the human mandible (in several FE software), molars and muscles of mastication. The aim of this task would be to combine all existing models into a single compatible model. The challenging aspects are the non-conforming geometries which would need to be modified for a good fit, the subsequent meshing should produce a good quality mesh.

For enquiries please contact Harnoor Saini. E-mail: saini@mechbau.uni-stuttgart.de