HCESC

Health Care Engineering Systems Center

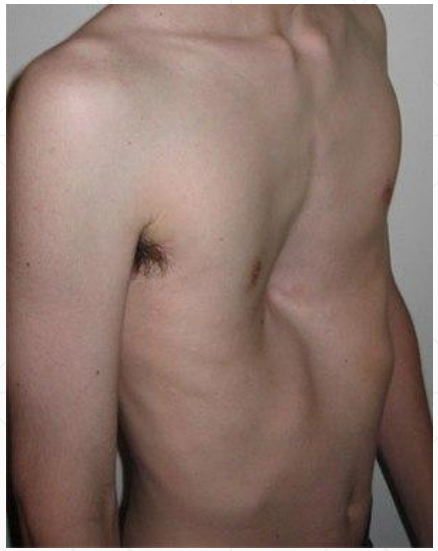
Summer Internship 2020 Presentations

CT VR

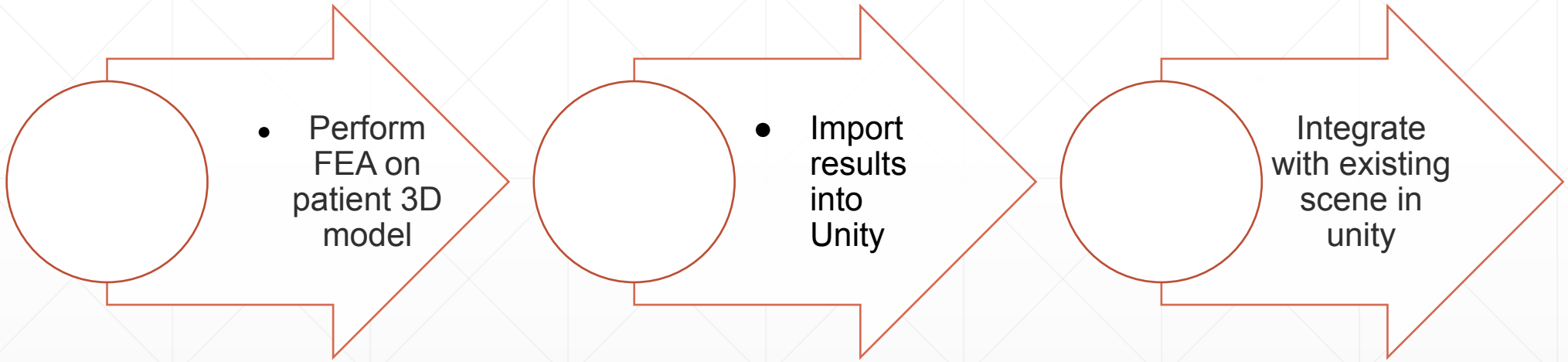
Jacqueline Chen ‘22 Computer Science, Arpandeep Khatua ‘23 CompEng

Goal of the Project

- Simulation for Nuss procedure which is used to correct pectus excavatum AKA sunken chest
- Build custom 3d model of a human from CT scans and use it within the simulation

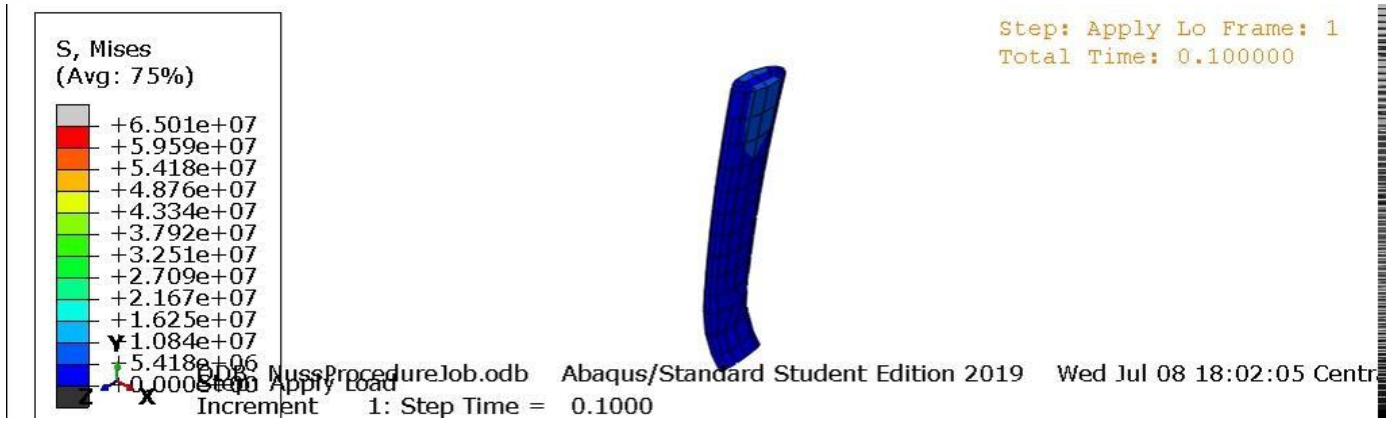


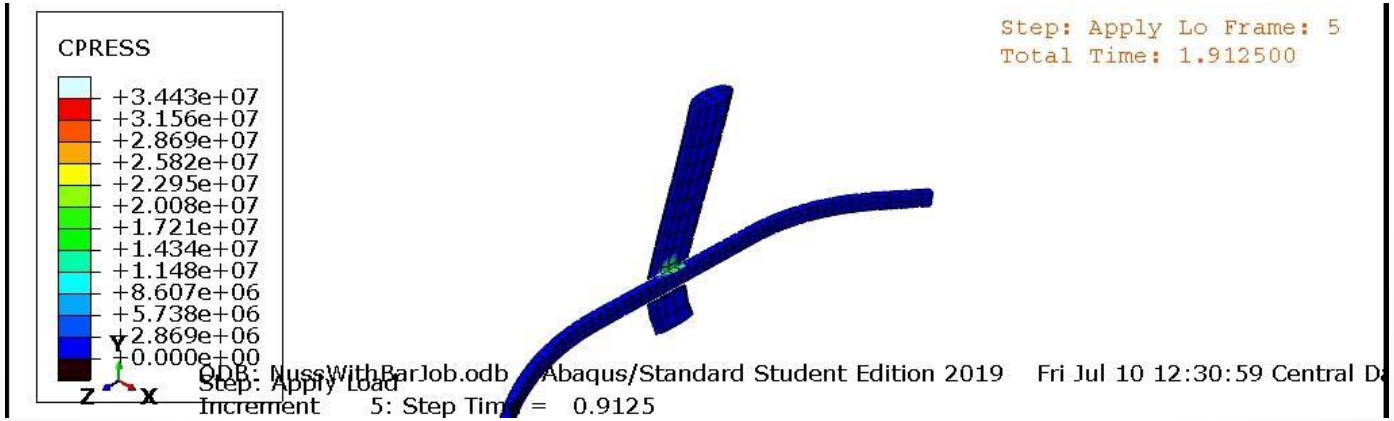
Proposed Timeline



Accomplishments

- Started on finite element analysis on the sternum deformation and the interaction between the pectus bar and the sternum.



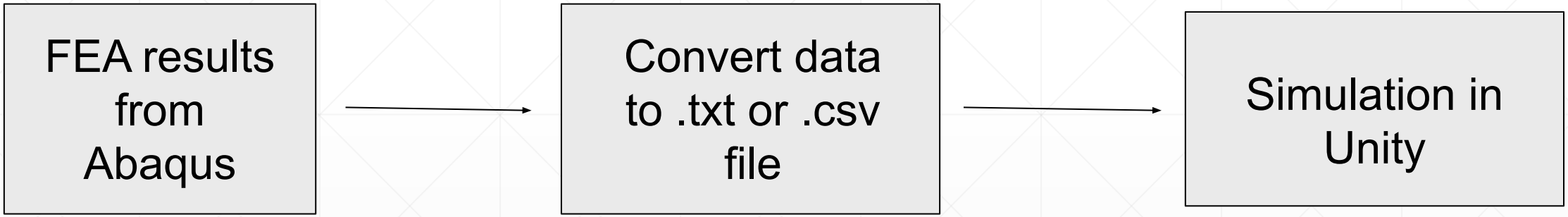


Accomplishments (cont.)

- We have completed the interaction of the skin with the pectus bar.

Challenges

- Figure out the exact requirements of the pectus bar for the patient model we have.
- Current model of patient does not have costal cartilage
- No easy way to go from Abaqus → Unity so need to devise a plan



Future Works / Recommendation

Future works

- Work on chest cavity deformation.
- UI for pectus bar modifications.

What can be done better?

After integrating the interaction of tools and the tissue and deformation modelling, work on improving the model.

QUESTION