

Master thesis!

Mold-design for the thorax of a body-realistic simulator

Motivation

The goal of the project is to create a body-realistic simulator, for use in training volunteer, public, and corporate rescue services. The functionality should both match and surpass the current state of the art in patient simulators. One key feature of the simulator is the ability to train a cardiac massage. Therefore, the thorax needs to be elastic. Similarly, the rescuer should feel a realistic haptics and counterpressure. Therefore, it is planned to design a hollow body out of plastic in a casting process. The task of the thesis is to design the casting mold based on a computed tomography of a real human. The mold has to be ready for a scaling in size to produce thorax of different sizes for different sizes of humans.



Source: https://www.youtube.com/watch?v=R_4LXoJj-3g

Tasks:

- Literature review to the state of art of body simulators for rescue training
- Analysis of the dimensions of a human body and definition of determining dimensions
- Integration of a structure to implement additional electronic devices
- Design of an initial mold in agreement with an existing computed tomography (CT)
- Adaption of the design that it possible to scale in size by few parameters
- Manufacturing, testing and evaluation of the prototype
- Poster of the scientific work
- Documentation as master thesis



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