authors: Alexander Holzenleiter
date: 24.10.2024

Modeling and event-oriented simulation of medical accident response centers

kind	Bachelor thesis
workingtitle	Modeling and event-oriented simulation of medical accident response centers

Event-oriented or discrete-time simulations are intended to depict a system or certain scenarios within a system using a model. A discrete point in time is assigned to a system state or a specific event. In contrast to multi-agent simulations, for example, in which a complex system is modeled using actors or agents, event-oriented simulations focus on the processes.

In the context of larger events, accident assistance centers of varying complexity serve as contact points for medical assistance. The aim of the bachelor thesis is the modeling of a UHS with a focus on patient flow with subsequent validation.

Tasks

- Conception, mapping and modelling of a medical emergency department and its internal organizational structure and logic (e.g. admission or transfer of a new patient)

- Simulation with common open source software (DESMO-J, Ptolemy II, ...)

- Validation of the model

Requirements

- good programming skills (ideally in the Java language)

- good knowledge of object-oriented modeling and data modeling

- basic knowledge of discrete modeling

- Bachelor's degree in computer science, medical technology or related fields

contact

University of Leipzig
Innovation Center Computer Assisted Surgery (ICCAS)
Alexander Holzenleiter
E-Mail: alexander.holzenleiter@medizin.uni-leipzig.de
Web: www.iccas.de