Interactive 3D realtime interior visualisation
with integrated dynamic content

The time-critical navigation in unknown environments of hyper-mobile people in the 21st Century becomes more and more relevant, both in professional and private life.

This bachelor thesis covers the creation of a web based application as well as a locally executed application designed for indoor navigation.

For better understanding any step of the development procedure is illustrated with screenshots or high-definition rendering images.

Preluding the development process there is an analysis of market -ready indoor navigation solutions and a comparsion of available 3D modelling software and relevant 3D engines to facilitate the decision processes on the needed software solutions.

This comparsion is directly followed by elaborated prerequisites and suggested preparatory work steps preliminary to the main modelling process, which is completely done in Autodesk's 3DS MAX.

As the relevant geometrical work and the creation of high-resolution textures is completed, the major step is to implement the custom 3D model into the chosen 3D engine.

To ensure a realistic user impression, the so far static only model has to be enriched with various interactive features based on different scripted routines using c++ and javascript. This includes light- / sound-effects as well as trigger based interaction capabilities.

To ensure a even more realistic user experience in the future there are some optimisation capabilities e.g. like adding the surrounding environment in combination with a dynamically changing weather simulation or as the covered area becomes larger and larger the implementation of transport vehicles.