# Streamed Realistic Agent in Augmented Reality

**Description**

The main goal of this project will be the creation of realistic humanoid agent in augmented reality setup. The target AR device will be Microsoft HoloLens 2. As the computational resources of this device are insufficient for rendering high-quality realistic character model, the rendering will be done on the Server PC and it will be streamed to the HoloLens device. This streaming will be achieved using [Unreal Engine streaming](https://docs.unrealengine.com/4.26/en-US/SharingAndReleasing/XRDevelopment/AR/HoloLens/QuickStartStreaming/). High quality human character will be created using [Unreal MetaHuman Creator](https://www.unrealengine.com/en-US/metahuman-creator). This way the highly-realistic virtual agent can be brought into AR setup as a personal assistant for addressing various tasks.

**Tasks**

This project can be done as either Master thesis or Practicum. In case of practicum the main focus will be the integration of MetaHuman character with Hololens streaming and real-time realistic rendering. In case of Master thesis, the topic will include MetaHuman streaming to Hololens but it will be additionally extended by application to real-world problem (e.g. navigation) or it will be used for studies of user perception.

**Requirements**

* Knowledge of English language (source code comments and final report should be in English)
* Knowledge of C++
* Previous experience with game engines and augmented reality is advantagous

**Environment**

The project should be implemented in UnrealEngine and it will be deployed on HoloLens 2 device.