

## Thesis proposal: Remote guidance with telepresence robot

### *About XMReality*

XMReality AB develops and sells a remote guidance solution that allows users to quickly and simply understand and solve problems over large distances. The solution is available on both desktop and mobile devices, including smart glasses.

The company is situated in Mjärdevi, Linköping.

### *Background*

A limitation with using remote guidance for more complex operations is the inability to look around freely in the physical space of the person you are guiding, as you are limited to seeing only what they are pointing their phone or smart glasses at. By using a telepresence robot as an external and moveable camera the guide can look around freely while guiding and giving instructions. This has several benefits:

- The person being guided can focus on the main task and doesn't have to worry about what the remote guide is seeing.
- The guide can look around freely and also see the person being guided, providing better situational awareness and safety.
- The experience of "being there" is augmented by not being tied to the physical position and device of the person getting help.

### *Thesis proposal*

Create a technical proof of concept in the form of a working prototype. The prototype should contain functionality to:

- See video from a remote device attached to a telepresence robot.
- Move the robot remotely to be able to "look around".
- Through the device attached to the robot place spatially fixed markers in a shared augmented reality space that the person getting help can see on their device.

We believe the best way to achieve this is to build a solution by combining existing technologies like ARKit/ARCore and WebRTC rather than creating ad-hoc components.

### *Who are you?*

You are a master student with a keen interest in augmented reality and software engineering. You are also driven, self going and want to work in an innovative environment.

### *Extent*

This thesis project is suitable for 2 students at master level.

***Preferred starting date***

Spring 2020.

***Application***

Apply by sending a personal letter and your CV to Sara Wennstam, HR Manager,  
hr@xmreality.se