

Introduction

To Augmented Reality App Development for Android using ARCore (3 ECTS)

Lecturer

Prof. Dr. Ansgar Gerlicher, Stuttgart Media University, Stuttgart, Germany

Prerequisites

Java programming skills

If possible a contemporary Android device (at least Android 7.0 (Nougat) or later) would be helpful but the emulator can also be used for development

Course content

Introduction to basic Augmented Reality app development for Android:

- What are the key technologies to integrate virtual content into the real world?
 - Motion tracking, environmental understanding, light estimation
- What frameworks exist to easily develop AR Apps for Android and iOS?
 - ARCore, ARKit (cross-platform solutions Unity, Unreal, Web)
- Developing Android AR apps using ARCore

After a short theoretical introduction, we will develop our own AR app for Android using ARCore. You will learn basic app development for Android using Android Studio and then build your first AR app. Java skills are a required. Basic Android development skills are not necessary but helpful.

Core content level learning outcomes

Knowledge and understanding

The students will know some basic concepts and some algorithms for motion tracking, environmental understanding and light estimation. They also will know how to develop an Augmented reality app using the ARCore framework for Android

Skills

The students are able to understand basic principles for developing apps for Android devices and using frameworks such as ARCore. They are also able to understand basic principles of projecting virtual content into a camera scene on a smartphone.

Evaluation methods

Daily exercises assigned on the course are worth 50% and both a report and products (i.e. program source code, app developed) about are worth 50%.