ARKit and ARCore in serve to augmented reality

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Z. Oufqir, A. El Abderrahmani and K. Satori(2020)

AR System

- Main objective is to know pose of camera with respect to object in the scene
- Pose estimation is to find translation and rotation between known object and real world and camera.

Two methods to calculate pose

- Marker based: Requires image to be registered to be recognised
- Markerless: Recognises object without it being registered. Powerful machine needed as it needs to recognise colour patterns and different characteristics in the scene
- We will be using marker less and the latest phones are capable of doing this.

ARKit features

- Tracking: Uses visual odometer, data from camera and motion sensor which enables placing of objects
- Can identify surfaces
- Recognise brightness and apply that to virtual object
- Scan and recognise 3D object in real world. This will later be recognised in 3D environment with virtual object
- 3D object capture done by building a cloud of points . More points indicate better positioning.

- Save environment: Allows saving of environment and reloading it. Saves optimization(no information or example on how it’s done)
- Detect static or dynamic images and insert a virtual 3D object

Comparative Study between ARKit and ARCore

- ARKit had more features than ARCore
- ARKit is more popular as compared to ARCore
- Both frameworks provide support in Unreal and Unity but only selective features
- ARKit 3 used for comparison currently on ARKit 6
- ARCore cannot scan 3D static objects.

Thank you