

**Macoun**

# Fun mit ARKit

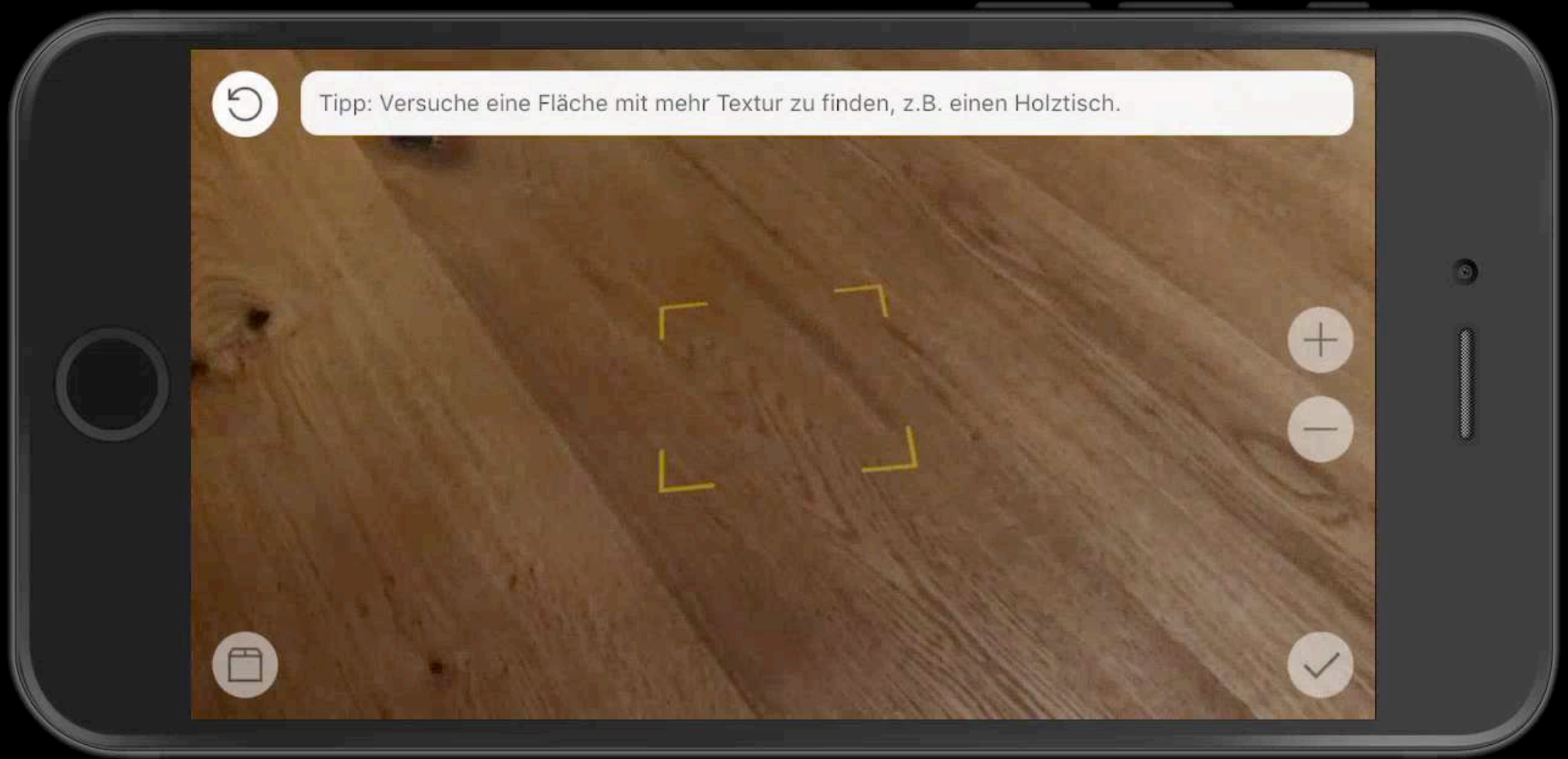
Ortwin Gentz  
@ortwingentz

# Was ist Augmented Reality?

Augmented reality (AR) is a live direct or indirect view of a physical, real-world environment whose elements are "augmented" by computer-generated or extracted real-world sensory input such as sound, video, graphics or GPS data.

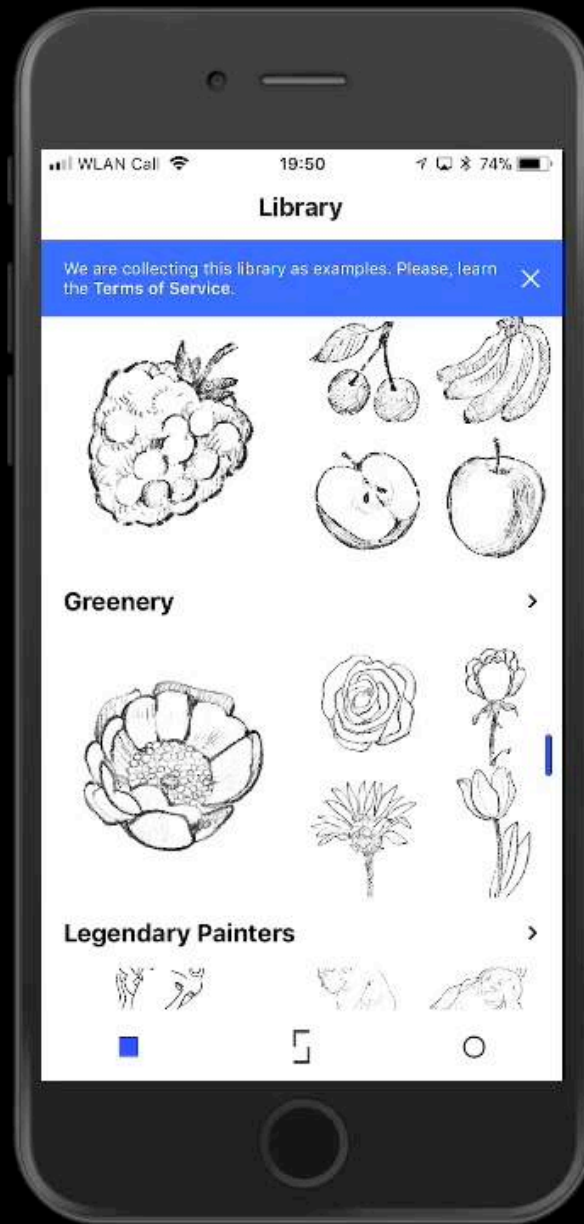
— Wikipedia

# Beispiele

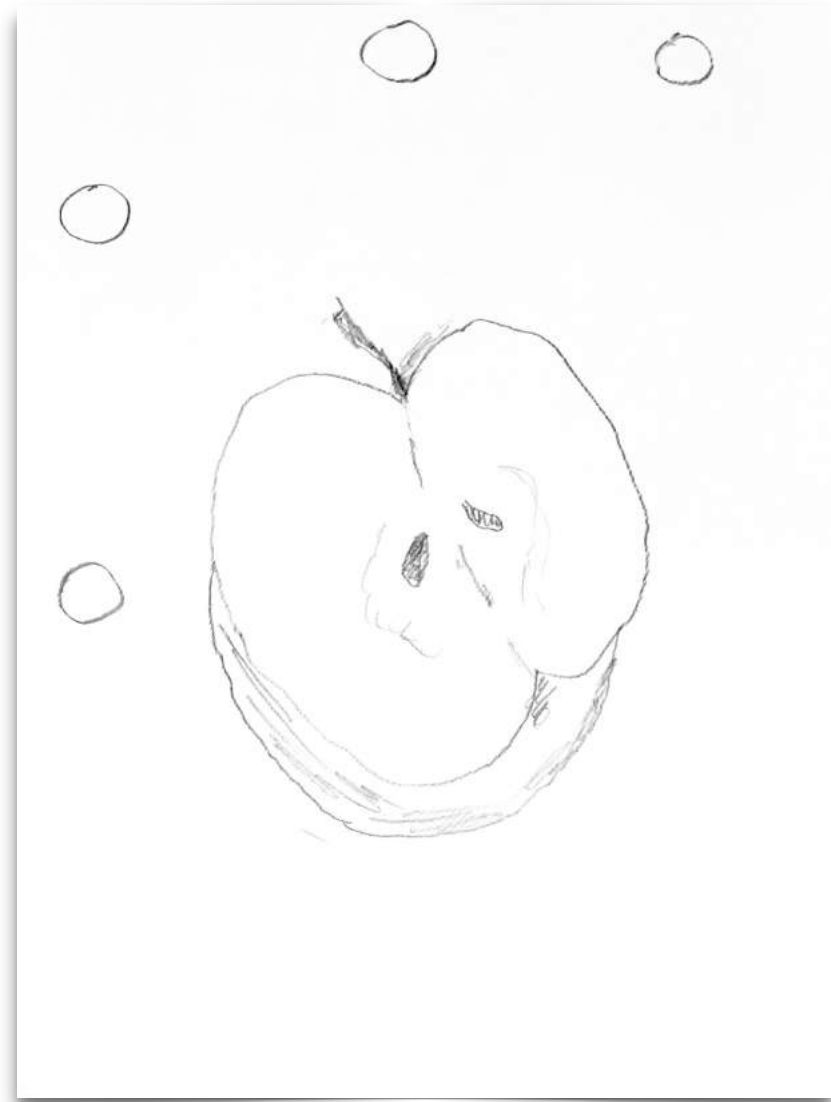


Parcel

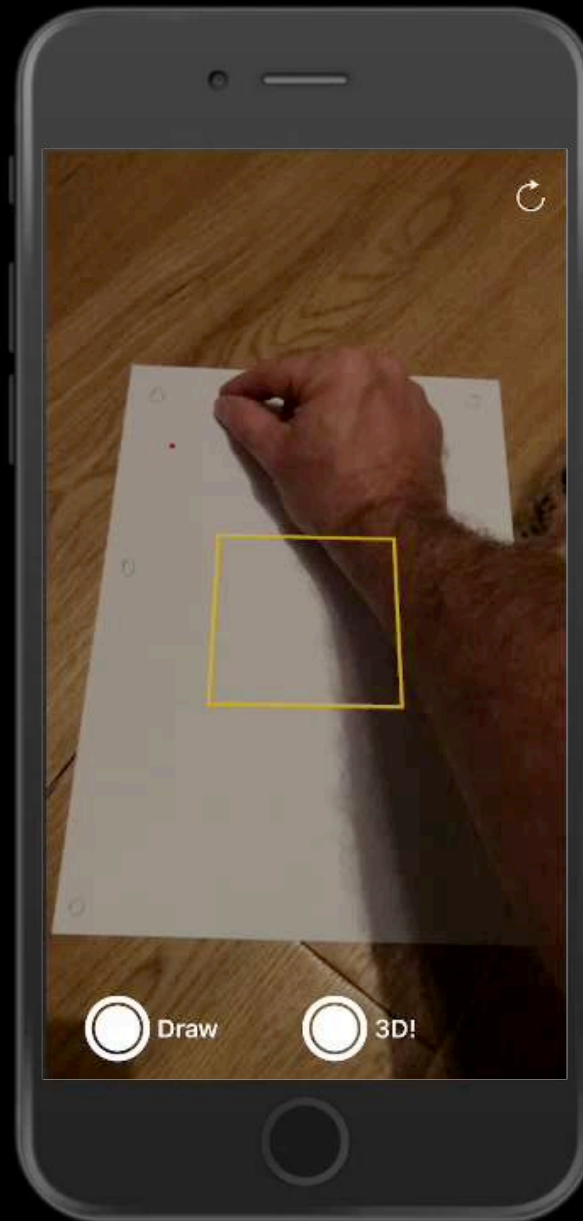
# SketchAR



**SketchAR**  
**Ergebnis:**

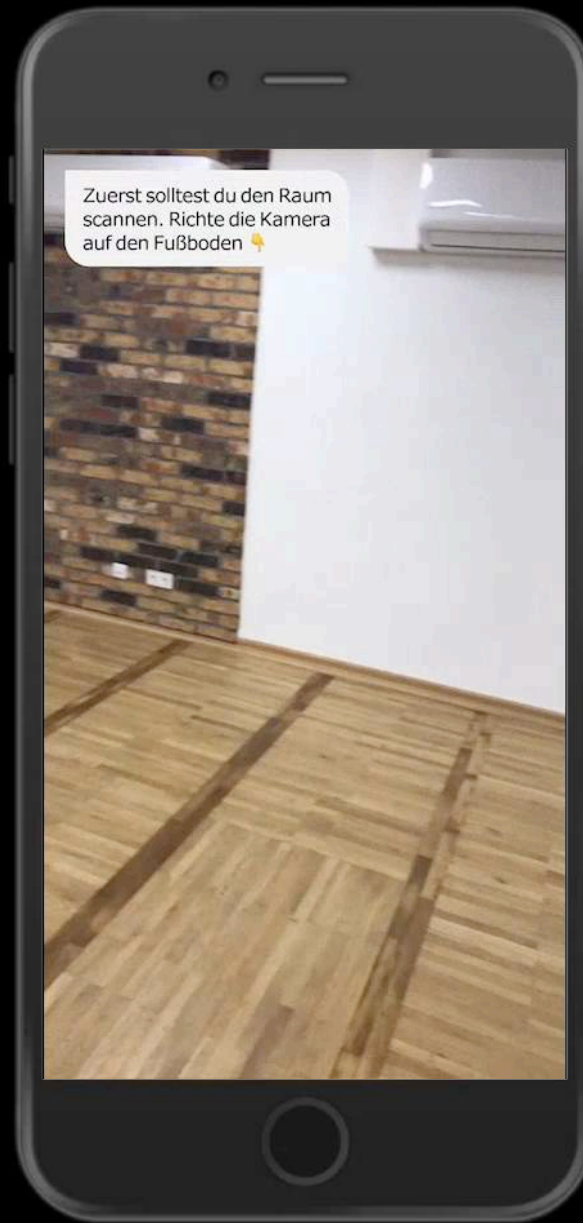


# ARPaint



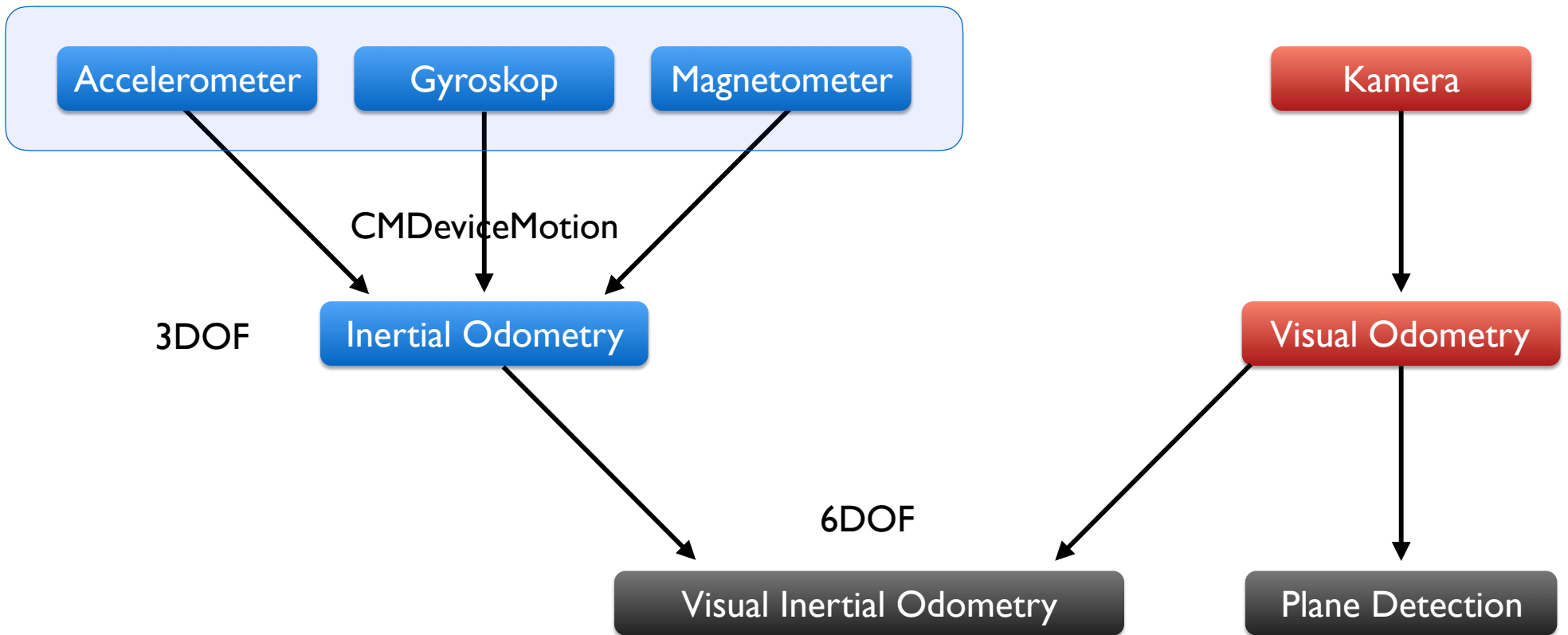


# IKEA Place



Technologie

## Inertial Measurement Unit (IMU)



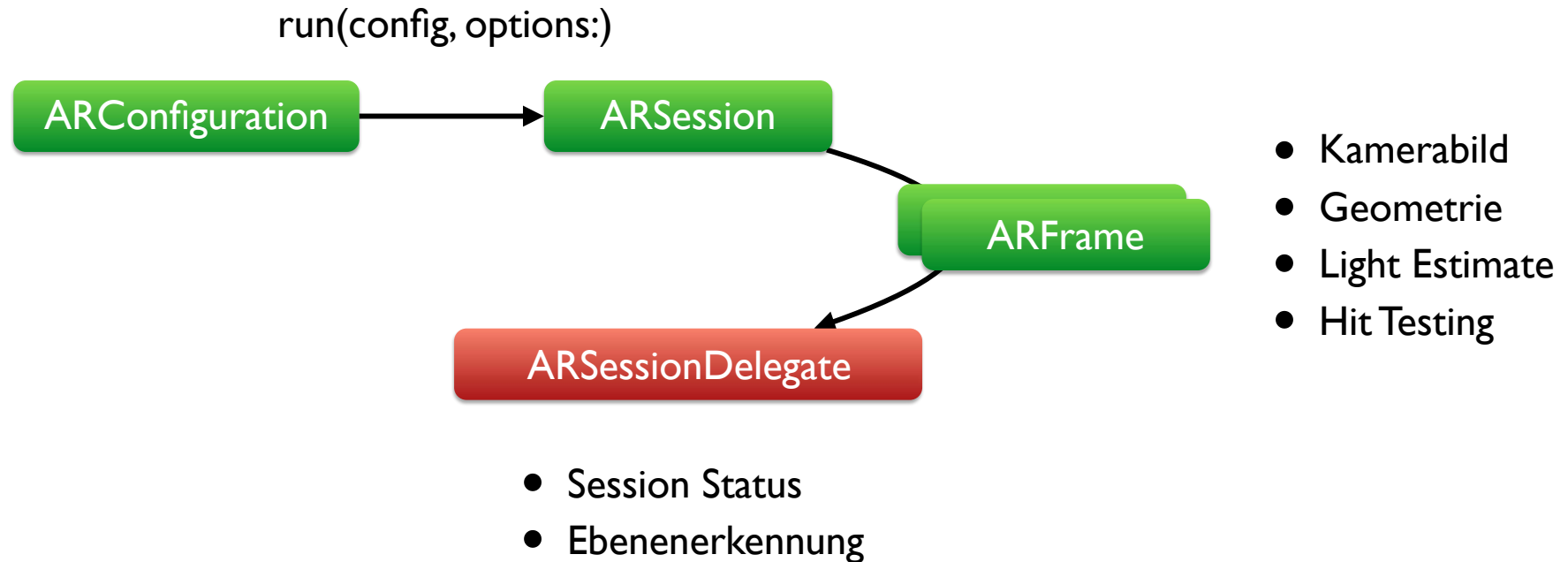
# ARConfiguration

- `AROrientationTrackingConfiguration`: 3DOF
- `ARWorldTrackingConfiguration`: 6DOF
- `ARFaceTrackingConfiguration`

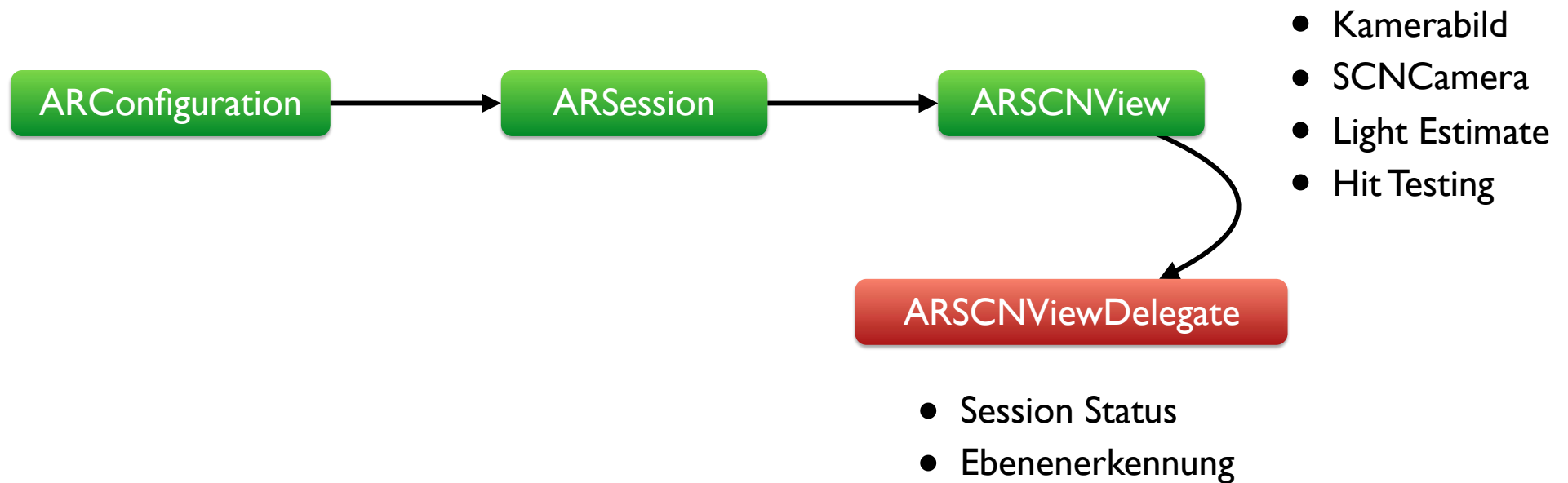
# ARKit API

- Standalone, Metal
- SceneKit
- SpriteKit
- Unity/Unreal

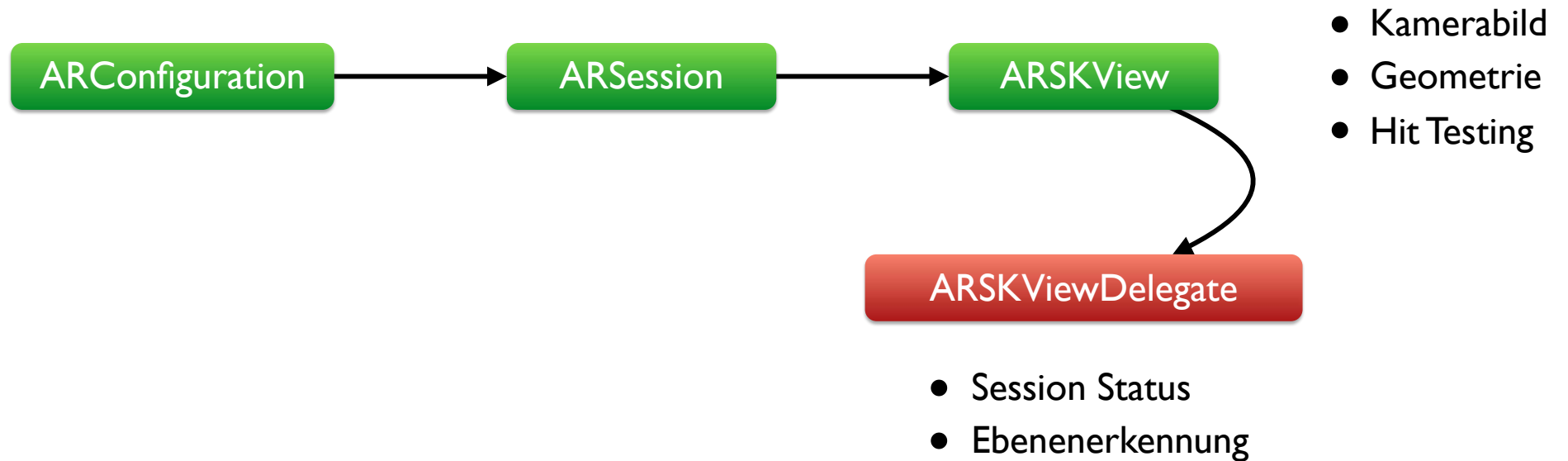
# ARKit API: Standalone



# ARKit API: SceneKit



# ARKit API: SpriteKit





# Ebenenerkennung

# Ebenenerkennung

- Nur horizontale Ebenen
- Position (`center`), Lage (`transform`), Größe (`extent`)
- `ARFrame.anchors`
- `AR(SCN|SK)ViewDelegate: nodeForAnchor:` oder `didAddNode:forAnchor:`

Demo

# Hit Testing

- In ARFrame, ARSCNView, ARSKView
- Resultat:
  - AR(Plane)Anchor
  - Entfernung
  - Transformationsmatrix

Selektion:

```
featurePoint  
estimatedHorizontalPlane  
existingPlane  
existingPlaneUsingExtent
```

Demo

# Ausleuchtung

- Umgebungshelligkeit in Lumen
- Umgebungsfarbtemperatur in Kelvin
- ARFrame: direkte Werte
- ARSCNView automaticallyUpdatesLighting:  
Platzierung von Ambient SceneKit Light

Demo

# SceneKit → ARKit Demo



# Face Tracking

# Face Tracking

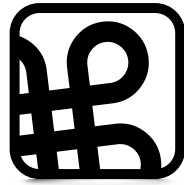
- Erfassung der Position
- 3D-Mesh
- Feature-Erkennung (52 Merkmale: Schließung rechtes Lid, Lippenspitze, Kinnverschiebung, etc.), Wert von 0 bis 1
- Nur für iPhone X

# Fragen?

@ortwingentz

**WE'RE  
HIRING!**

Vielen Dank



**Macoun**