Professional Certificate in AR-VR Development and 3D Graphics

Summary

Week 11: AR Development: Surface Tracking

NYU TANDON SCHOOL OF ENGINEERING

Week Overview

Discuss Simultaneous Localization And Mapping (SLAM) and how the latest mobile SDKs are leveraged

Explore ARKit and ARCore

Learn about AR Foundation and how it leverages cross and multi-platform experiences within a single development environment

Learn which types of surfaces and feature points work best for ARKit and ARCore

Explore and access experiences which feature raycasting and spatialized sound

Creating AR Experiences: Markerless Systems

Markerless systems do not use any markers

- Use an underlying core technology known as Simultaneous Localization and Mapping (SLAM)

How do they work?

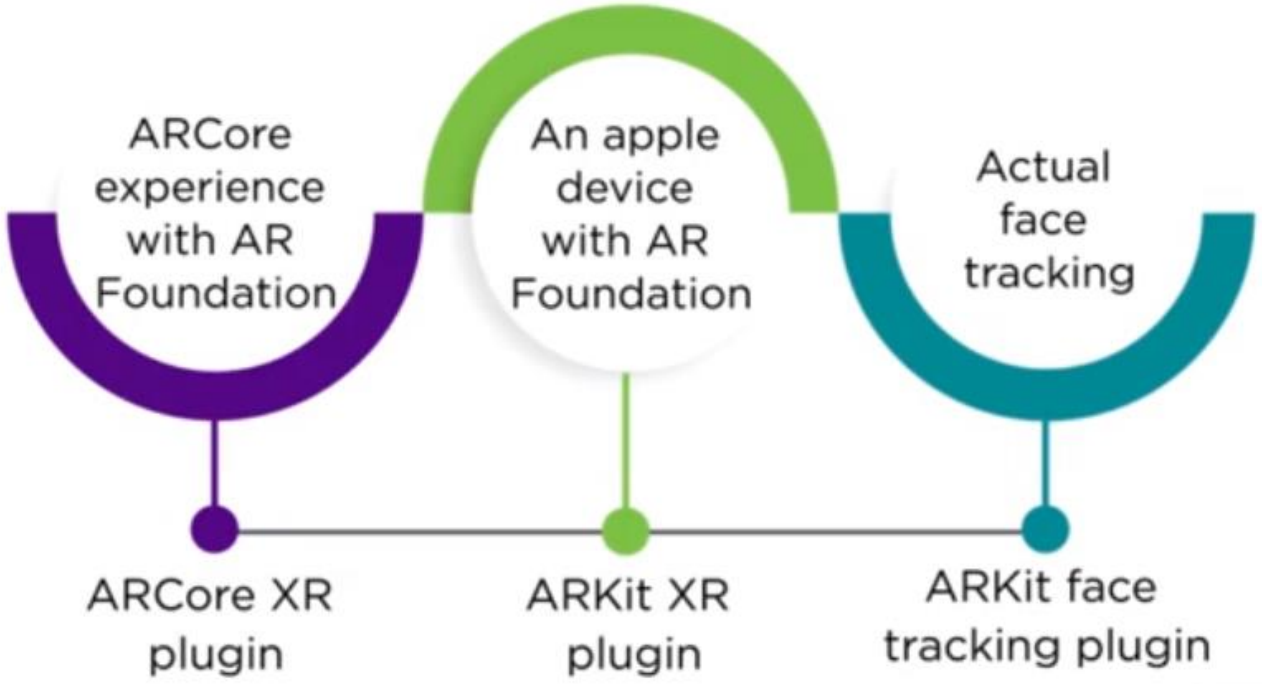
- Use the camera and analyze its images to track specific points in the world
  - Use these points to build a map of the environment by computing its changing location

Markerless Systems

- Understand geometric implication in the real world
- Capture spatial details and the devices' motion or IMU
- Estimate the pose, the position and orientation of the camera relatively to the world over time

AR Platform Packages

AR Foundation also provides cross-platform and multi-platform development for Magic Leap and Windows XR.

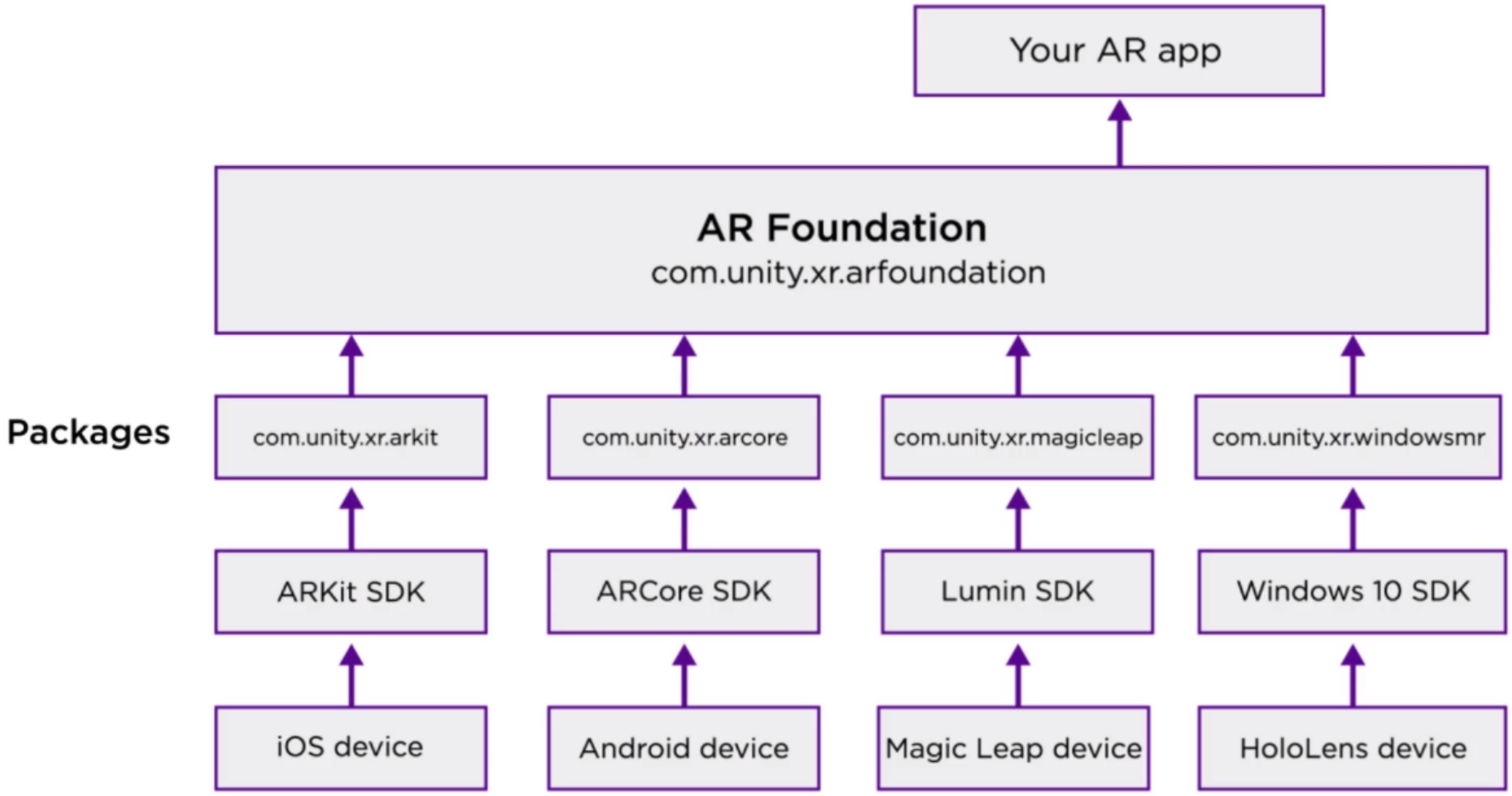


AR Foundation

AR Foundation is Unity's core AR framework specifically designed for enabling multi-platform or cross-platform AR experiences.

A subsystem is a platform agnostic interface to access different types of information.

AR Foundation



AR Raycasting

The video demonstrates how to utilize AR Foundation and Visual Studio to add augmentables to your project and to allow raycasting within your application. He also explains the procedure to test your AR raycasting functionality on a mobile device.

Sound-to-Cube Mobile Test

The video explains how to add spatialized sound to your cube object and test it on a mobile device.

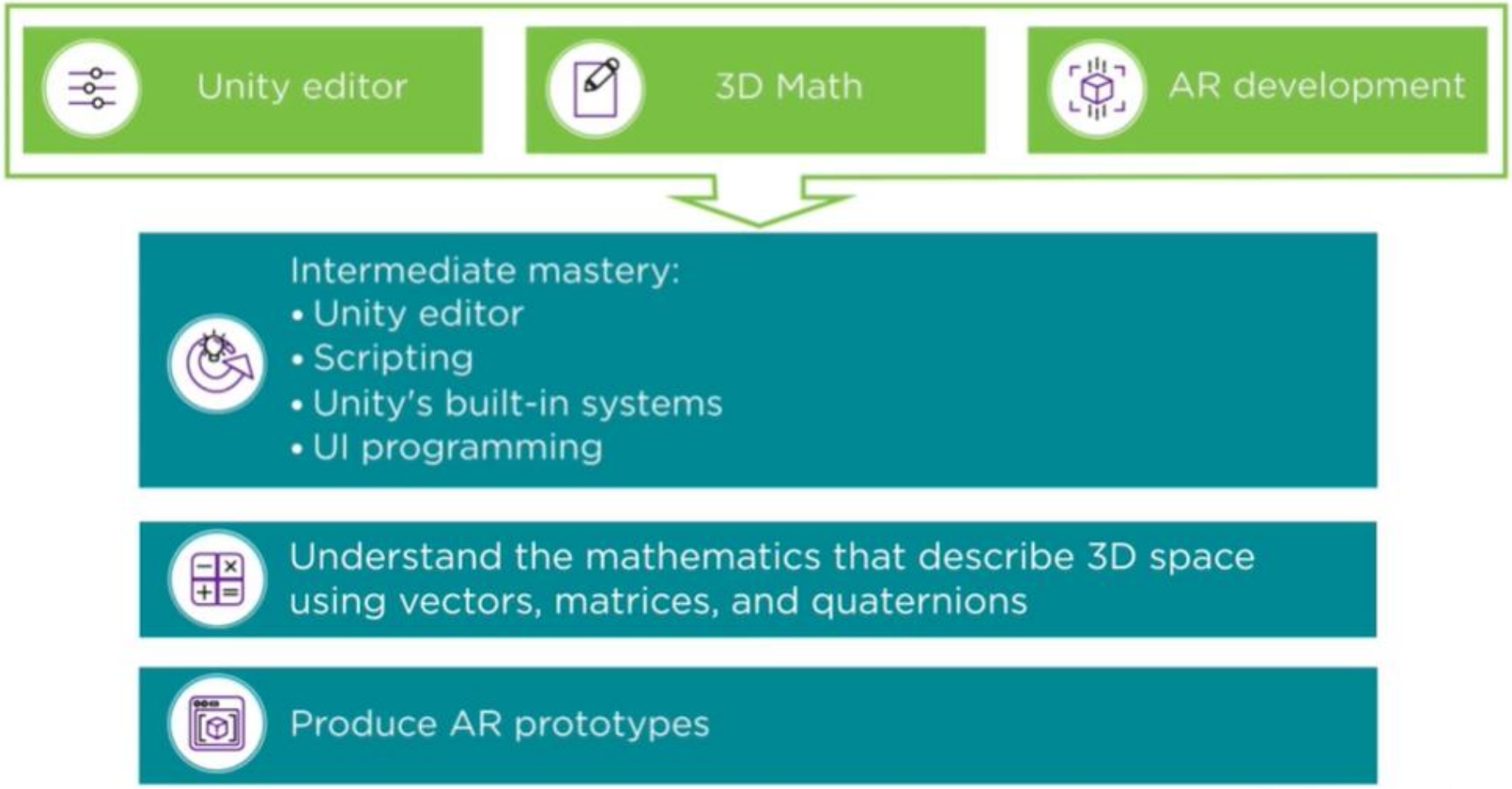
Summary

Learn about Simultaneous Localization and Mapping (SLAM) and types of real-world features

Understand AR Foundation, its advantages, and pitfalls as a cross and multi-platform for AR development

Create AR experiences leveraging SLAM and understand its features, advantages, and pitfalls

Section 2 Summary

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