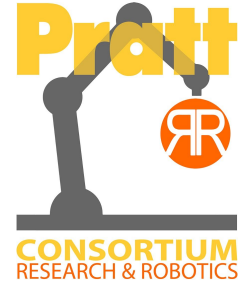




AIA
Brooklyn



**Pratt Institute School of Architecture
Summer 2020 Executive Education Course**

Co-sponsors: Pratt Institute School of Architecture; AIA Brooklyn; Pratt Consortium for Research & Robotics; RLab

Course Description

Gaming engines are increasingly being used in the Architecture, Engineering, and Construction industries to create real time architectural visualizations. Using Augmented Reality and Virtual Reality, these visualizations can come to life, allowing designs to be overlaid on top of real context or users to experience and interact with spaces from within. Not only do these technologies present novel means of communicating design intent, but they allow for changes, edits, and options to be viewed instantly.

This series will provide a lecture to introduce participants to AR and VR technologies and their current and future applications in the architecture industry. Accompanying workshops will dive deeper into workflows for using AR technologies in architecture, design and creative offices.

Participants may sign up for the lecture alone, or for the entire series comprising the lecture plus two workshops. For those who enroll in the series, the lecture fee is included in the price.



I. **Architectural Technology Lecture: Using Augmented Reality and Virtual Reality in Architecture Offices**

Tuesday, July 28, 2020

6:00-7:30pm

Maximum participants: 280

AIA Credits: 1.5 LU

Cost: \$15 per ticket

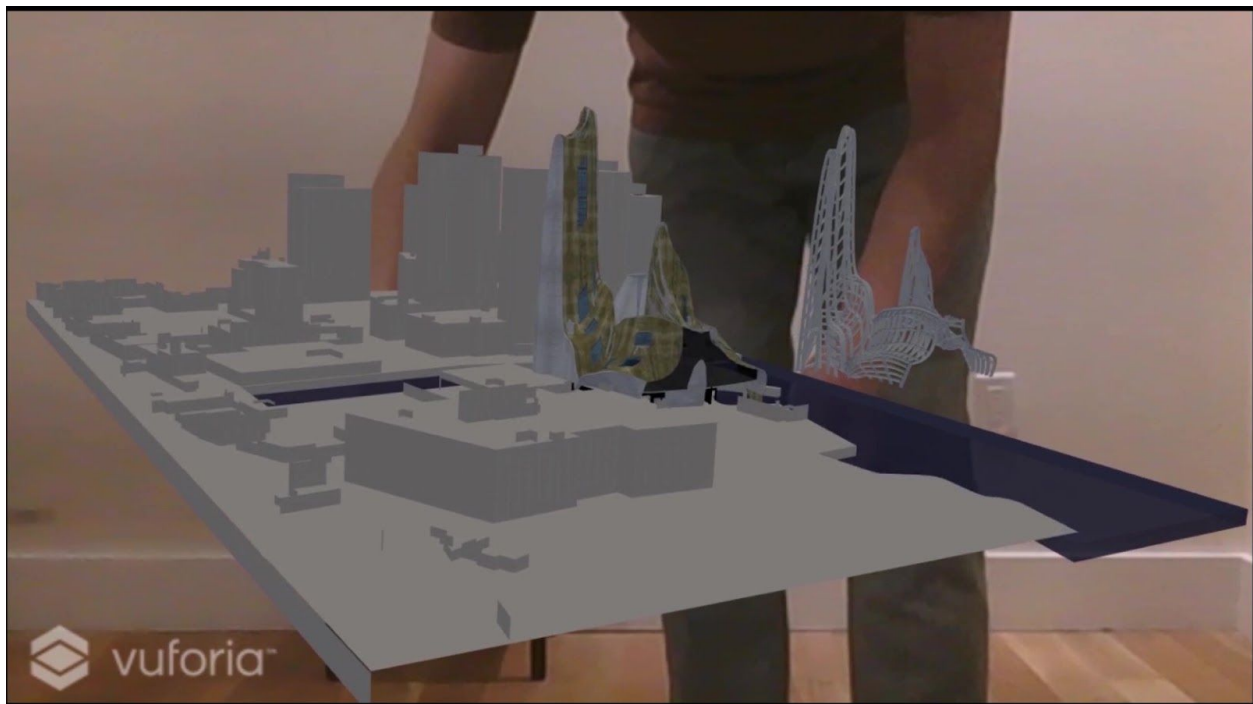
Eventbrite Link: [AR/VR in Architecture Lecture Tickets](#)

What is the future of human computer interaction, and how will it change the way we live and work? How will it change the way we design and build the world around us? Justin Hendrix, Executive Director of RLab - the nation's first city-funded center for research, entrepreneurship, and education in virtual and augmented reality and related technologies - will discuss innovation in virtual and augmented reality as well as other future interfaces that will change architecture, engineering and construction. The lecture introduces the current state of XR technologies and their application toward use in Architecture Offices. XR technologies categorizes both Augmented Reality and Virtual Reality. The lecture will speak to concepts of remote

communication to clients, new modes of building virtual presentations and touch on the future of the industry. Attendees are also invited and encouraged to sign up for the XR workshops which will investigate the application of these concepts.

Course objectives:

1. Participants will learn about and understand concepts of XR technologies and their use in the field of Architecture.
2. Participants will learn introductory concepts of XR technologies and how they are implemented into Pre-Design project phases.
3. Participants will gain project presentation knowledge on how XR can represent and communicate virtual presentations to Clients.
4. Participants will learn about resources for further developing their understanding of XR Technologies.



Student Hanqiao Chen's final project from Jeffrey Anderson, Olivia Vien, and Danil Nagy's Spring 2020 AR Development Class, "Mediums 3: Visualization" in Pratt Institute's Graduate Architecture and Urban Design program. Used with permission.

II. Architectural Technology Workshops: Augmented Reality and Virtual Reality Workshops for Remote Collaboration.

Workshop 1:
Wednesday July 29, 2020
6:00-8:00pm

Workshop 2:
Friday, July 31, 2020
6:00-8:00pm

Maximum participants: 20
AIA Credits: 4 LU - enrollees must participate in both workshops
Cost: \$85 for AIA Members / \$125 Non-Members
Workshop participants may attend the Lecture on July 28 for free.

Eventbrite Link: [AR/VR Workshops Tickets](#)

Organized by AIA Brooklyn and Pratt Institute School of Architecture, this workshop series is led by Pratt SoA Professor Jeffrey Anderson and RLab, the nation's first city-funded center for research, entrepreneurship and education in virtual and augmented reality and related technologies. This workshop builds upon the concepts introduced in the XR lecture held on July 14, 2020 . In two distinct workshops of two hours, held over two days, participants will engage in the application of XR technologies for all phases of project communication using webcam and marker based Augmented Reality. Participants will learn the basics of Augmented Reality (AR) development using Unity and Vuforia, create a simple architectural AR scene, and build that scene as a standalone Windows application. Finally, the workshop leaders will share resources for further developing an understanding of Unity and Vuforia for AR development.

Workshop 1: Wednesday July 29, 2020, 6:00-8:00pm

Course objectives for Workshop 1: Learning the Technology

1. Participants will get an introduction to the Unity game development platform.
2. Participants will get an introduction to implementing the Vuforia plug in for webcam-based AR development in Unity.
3. Participants will learn about resources for developing unique image targets in Vuforia.
4. Participants will learn workflows for bringing geometry, textures, and texture mapping properties from Rhino to Unity.

Workshop 2: Friday, July 31, 2020, 6:00-8:00pm

Course objectives for Workshop 2: Implementing the Technology

1. Participants will get a refresher about importing geometry from Rhino to Unity and have time

to create a simple “scene” in Rhino to import into Unity.

2. Participants use a provided Vuforia image target setup in Unity to preview their AR geometry using Vuforia. The image target will be designed to fit on participant’s phone screen to avoid needing a printer.

3. Participants will use the post-processing stack and material editor to adjust the visual appearance of their imported geometry.

4. Participants will learn about resources for further developing their understanding of XR Technologies.

Required Hardware for both Workshops:

- Laptop computer with valid software or downloaded prior to the start of the workshop.
- Webcam (either integrated into laptop or USB webcam)
- Rhino 6 or 5 (64bit)

Required Software for both Workshops:

- Unity Hub
- Unity Version 2019.3.6
- Vuforia package for Unity