




AR + DESIGN

Augmented Reality Immersive Design Method

1. Workshop Instructor Information

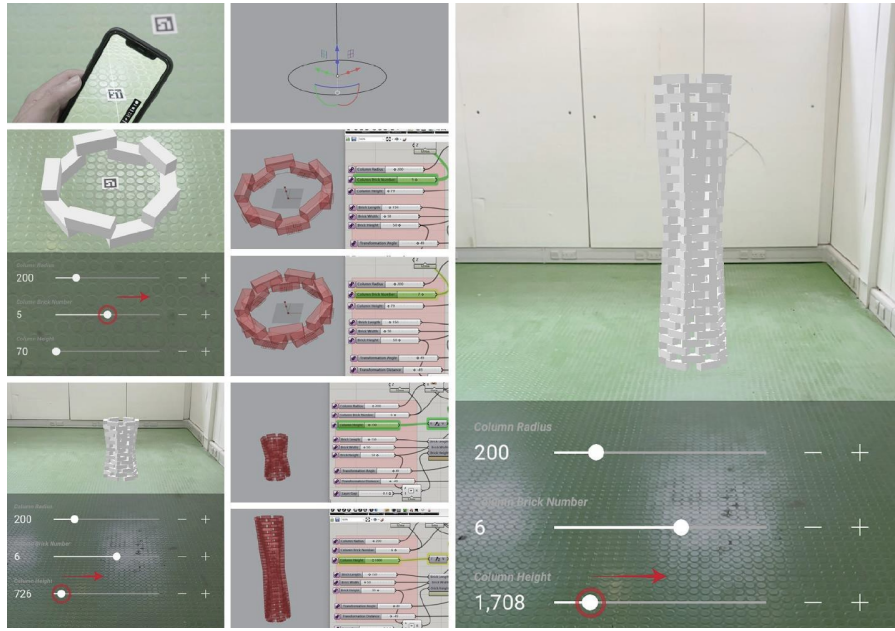
Name	Yang Song
Organization/Affiliation	University of Liverpool
Email	yang.song@liverpool.ac.uk
Short Biography (150 words max.)	<p>Yang Song is an architectural researcher and a multidisciplinary designer who works across projects that converge architecture design, augmented reality and digital fabrication. He has a MArch degree in the Bartlett, UCL. Yang Song, now, is a practice-based PhD researcher at the Centre for Architecture and Visual Arts (CAVA), University of Liverpool. His PhD research aim is to investigate workflow for an AR-assisted intuitive design to fabrication framework for robotic assembly. Yang Song has published several academic conference and journal papers, and has given research presentations at related research conferences, including eCAADe, CAADRIA, SiGraDi, and CDRF. He also has extensive teaching experience. Served as the robotic support and workshop tutor at the University of Liverpool; the international conference robotic workshop tutor at SiGraDi 2021; and the seminar co-tutor for the Robots in Architecture seminar in the dMA, Leibniz University Hannover; and the Augmented Reality workshop tutor at the SD Platform.</p>
Head Shot	



2. Workshop Information

Length	October 09: 4 hours October 10: 4 hours
Short Abstract (250 words max.)	<p>This online workshop aims to introduce the knowledge of exploring immersive parametric design through the Augmented Reality (AR) environment. As the quintessential 3D-4D design field, architectural design has been limited throughout its history by 2D or cumbersome 3D representation. Even though computer-aided architectural design and modelling software is widely used to produce digital 3D models, the conventional screen-based visualization methods for design and analysis are restrictive to how well the user understands the space on a computer screen, as the design is done outside the building site, hence there might be disparities between the design and final. Ideas like exploring immersive design in AR, as well as real-time modification experience and interaction with the built environment and the metaverse, will therefore actuate as the central core for the research streams to reduce the current design methods.</p> <p>Participants will learn about the parametric design methods of brick-based structures as demonstrations, basic AR modelling logic, AR onsite holographic preview, AR real-time interactive functions, and basic AR input method knowledge. The participants will be able to learn the parametric design process and the AR immersive design by following the live demonstration in Grasshopper with the related plugin step by step. After that, participants will start to design, develop, and preview their own structures in the AR environment with setting-related interactive, immersive design inputs. The goal is to enable participants to learn and apply this immersive design method to architectural applications, such as walls, columns, pavilions or other structures, and to customize design algorithms or related interventions for their designs in the AR environment.</p>
Handouts and Materials	Rhinoceros3D and Grasshopper Fologram plugin (free) Laptop Smartphone or tablet (iOS or Android) Printer (optional)
Learning Objectives	Parametric Design Method Augmented Reality Experiment Immersive Design Method AR Holographic Design Outcome Preview AR-assisted Design Input Method

Sample Outcome



HYBRID SPACES OF THE METAVERSE

Architecture in the Age of the Metaverse
Opportunities and Potentials

Debbieh, Lebanon
October 12-14, 2022
Hybrid Conference

جامعة بيروت العربية
BEIRUT ARAB UNIVERSITY



ASCAAD 2022

10th International Conference of the Arab Society
for Computation in Architecture, Art and Design

<p>Corresponding Conference Theme</p>	<p>(C) Parametric Design and Digital Fabrication (D) Virtual Environments and Emerging Realities</p>

3. Attendees Information

<p>Who should attend this workshop?</p>	<p>This workshop is for architectural or multidisciplinary current students, recent grads, professionals, cross-disciplinary researchers, etc., interested in Augmented Reality.</p>
<p>Prerequisites</p>	<p>The participant better has some Grasshopper skills and experiment. However, this workshop is also for all beginners.</p>