

## Mass customization of 3d wall design in online environment

*Wall.4.all*

**Workshop organizer- full name and affiliation:** Bojan Tepavčević, University of Novi Sad, Faculty of Technical Sciences, Department of Architecture and Urban Planning

**Short biography:** Bojan Tepavčević is a professor at the Department of Architecture and Urban Planning, Faculty of Technical Sciences, University of Novi Sad, where he teaches courses in computational design and architectural representation. He is also cofounder of Digital Design Center <http://www.arhns.uns.ac.rs/cdd/> and the head of the master's program "Digital Techniques, Design and Production in Architecture and Urbanism" <http://www.arhns.uns.ac.rs/digital/> at the University of Novi Sad.

He was awarded the International Trimo Research Award in Ljubljana in 2011, for his PhD dissertation about the influence of geometric representation of space on contemporary architecture. He is a coauthor of the book "Architectural Scale Models in the Digital Age: Design and Manufacturing" (Springer Vienna 2013), as well as the author of many research papers in the field of contemporary architectural theory of design, computational design and advanced modelling strategies in architecture.

### **Experiences on conference/workshop organization:**

- Conference Chair at the 4th eCAADe International Regional Symposium 2016 (Novi Sad, Serbia) <http://www.arhns.uns.ac.rs/4-ecaade-workshop/>
- Workshop tutor at the 4th eCAADe International Regional Symposium 2016 Workshop topic: Design based on structural performance optimization <http://www.arhns.uns.ac.rs/4-ecaade-workshop/workshop-2-environmental-performance-based-design-robotic-fabrication/>

**About the workshop (Objectives, scope and contribution to the Conference):** Mass Customization is the new design paradigm that replaces mass production, allowing customers to participate in the design process. Such design paradigm is especially important in the age of parametric architecture, with increased need for design collaboration and knowledge sharing. Recent advances in cloud technologies allow parametric design configuration in web environment without need to install additional software or plugins. It can be done via various Grasshopper plug-ins platforms such as Human UI, Speckle.xyz, or ShapeDiver.

The aim of this workshop is to provide basic knowledge about different web-based parametric platforms and to provide workflow for creating product configurator for the design of 3d wall that can be exported for manufacturing production (3d printing or CNC manufacturing). Participants will be trained to design and optimize Grasshopper models of 3d parametric wall for cloud applications via ShapeDiver platform. Participants will learn how to create their own web-based 3d wall configurator with ability to export 3d files and embed a model directly on a blog or website.

**A Tentative program:** Introduction to Mass Customization approach in design and architecture. An overview of contemporary parametric web3D platforms. Introduction to Grasshopper3D. Design strategies for creating 3d walls. Introduction to topological mesh editor Weaverbird, an add-on for Grasshopper. Introduction to Shapediver, add-on for Grasshopper and parametric web3D platforms. Working with design variations and design optimisation for web3D. Creation of web based platform. Export options and embedding models on a blog.

**Requirements for participants:** Participants are required to bring their laptops with installed 64bit Windows, Rhino5, Grasshopper3D, Weaverbird (<http://www.giuliopiacentino.com/weaverbird/>), LunchBox (<http://www.food4rhino.com/app/lunchbox>) and ShapeDiver (<http://www.food4rhino.com/app/shapediver>) add-ons

**Technical requirements:** Classroom with projector and internet

**Maximum number of participants:** 15

**Expected workshop result:** <https://www.shapediver.com/m/wall-4-all-4>

