35% discount on selected courses! Discount code: NEWYEAR35

Explore Courses (https://parametric-architecture.com/new-year-2024/)

(https://parametric-architecture.com/cart/)

(https://parametric-architecture.com/my-account/)

(https://parametric-architecture.com/)

Membership (https://parametric-architecture.com/subscribe/)


# Computational Thinking – Studio Ignacio Revenga

Montaser Mesk(https://parametric-architecture.com/author/montaser/) November 30, 2023(https://parametric-architecture.com/2023/11/30/)

8:47 pm No Comments(https://parametric-architecture.com/computational-thinking-studio-ignacio-revenga/#respond)

Workshops (https://parametric-architecture.com/category/workshops/)

Courses


(https://parametric-architecture.com/paacademy/parametric-intelligence/)

**Parametric Intelligence (https://parametric-architecture.com/paacademy/parametric-intelligence/)**


(https://parametric-architecture.com/paacademy/computational-thinking/)

**Computational Thinking (https://parametric-architecture.com/paacademy/computational-thinking/)**


(https://parametric-architecture.com/paacademy/formverse-with-cinema-4d-2-0/)

**FormVerse with Cinema 4D 2.0 (https://parametric-architecture.com/paacademy/formverse-with-cinema-4d-2-0/)**


(https://parametric-architecture.com/paacademy/3d-printing-ceramics-advanced-digital-flow/)

**3D-Printing Ceramics: Advanced Digital Flow (https://parametric-architecture.com/paacademy/3d-printing-ceramics-advanced-digital-flow/)**

## Become A Digital Member

Subscribe only for €3.99 per month.

Cancel anytime!

**Subscribe Now**
**(https://parametric-architecture.com/subscribe/)**

(https://parametric-architecture.com/wp-content/uploads/2023/11/Computational-Thinking_-Web.jpg)

**Topic:** Computational Thinking
**Date:** January 13 – 14, 2024
**Time:** 11:00 – 15:00 GMT
**Format:** Online on Zoom
**Duration:** 2 Sessions (8 Hours)
**Registration Deadline:** January 12, 2024
**Total Seats:** 50 seats
**Difficulty:** Beginner – Intermediate
**Language:** English
**Certificate:** Yes
**General Registration:** 80 EUR
**Fee For Digital Members:** 68 EUR (15% discount available only for Digital Members (https://parametric-architecture.com/subscribe/))
**Organized By:** PAACADEMY
**Tutor:** Ignacio Revenga
**Recordings:** Recordings will be available for all participants afterward indefinitely.

Register Now (https://parametric-architecture.com/paacademy/computational-thinking/)

## Introduction

**COMPUTATIONAL THINKING: CORALLINE FORMATIONS**

The language we use predetermines how neural connections are generated in our brain, structuring our logic and thoughts and therefore the way we understand the world around us. In the field of design, computational thinking is understood as a language that will generate a new way of conceiving and designing the geometries and spaces that describe an architectural design. This computational conception of design and architecture is subject to the extrapolation and rationalization of the dimensional parameters and the rules of geometric behavior that determine the possible results. By applying in parallel the field of biomimicry and computational protocols to architectural design, complex geometries inspired by the intrinsic rules found in nature are controlled by simple components or parameters.

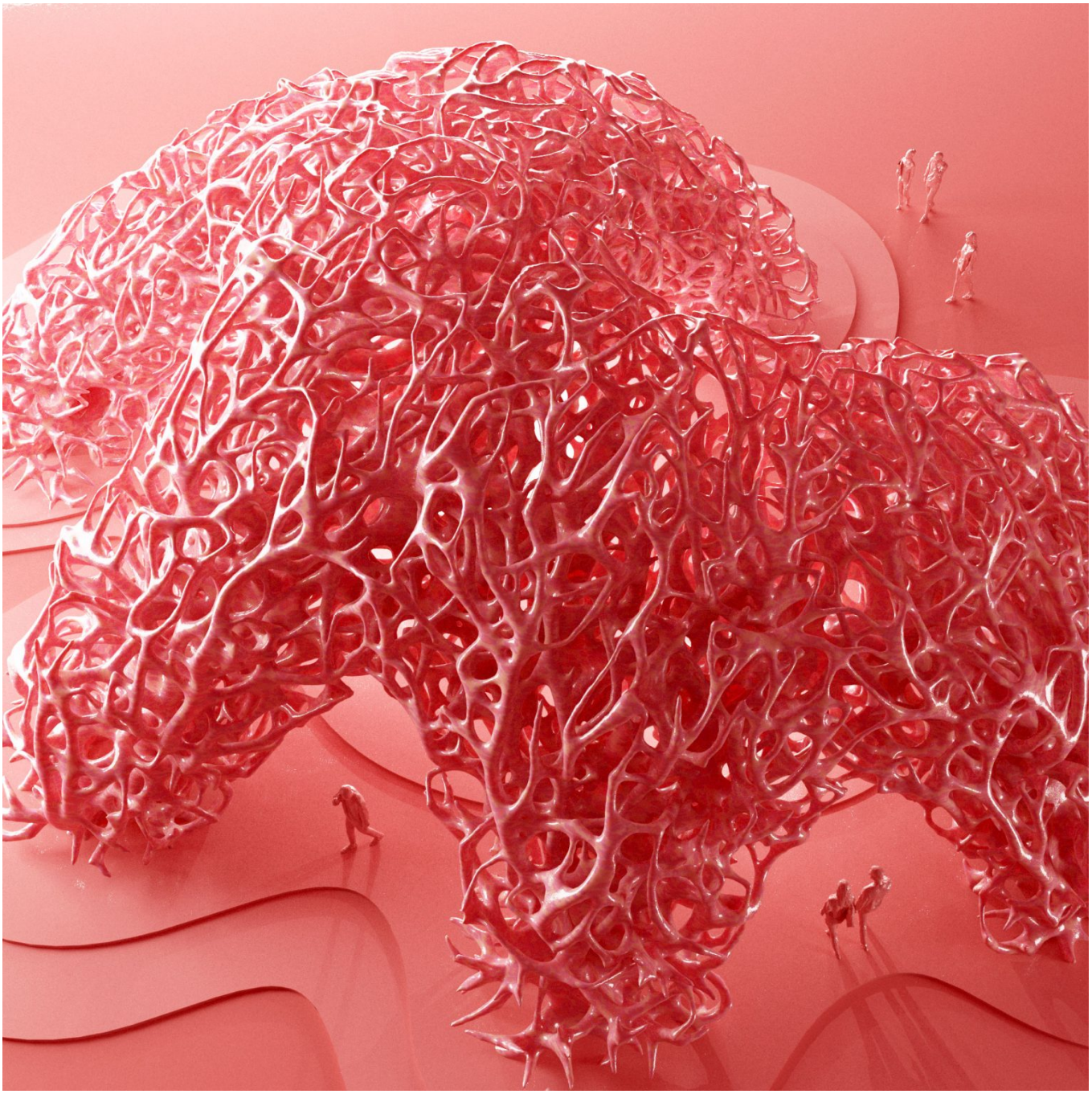
## The Scope of the Workshop:

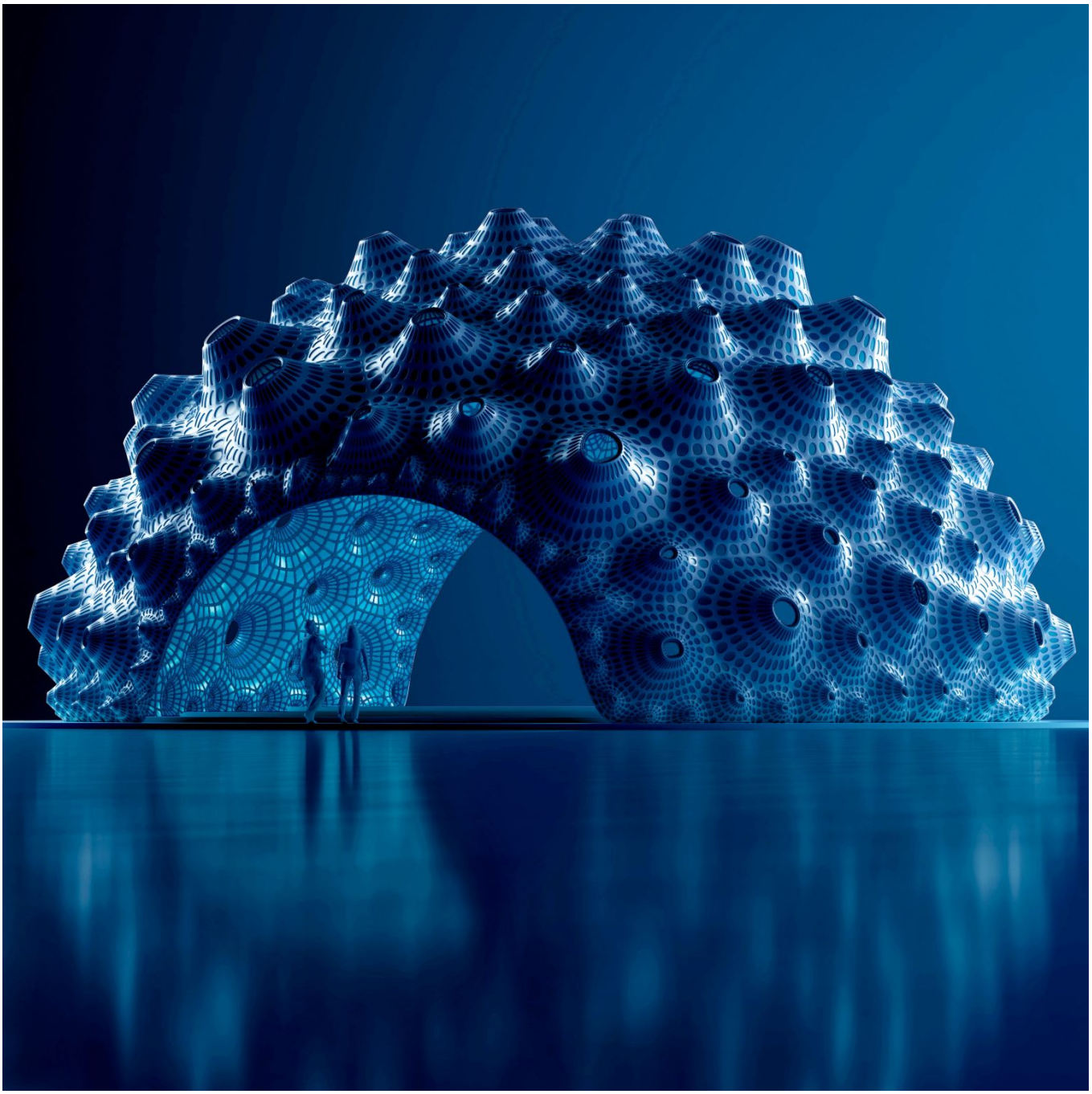
The workshop focuses on the development of architectural solutions for complex geometries developed through simple processes for the generation of the basic geometry based on Voronoi distributions, the topological study and subsequent development through physical simulations, data manipulation and visualization, and the generation of structural lattices based on the obtained geometry.

- Basic geometry generation using Voronoi distributions
- Custom subdivision of the mesh
- Physical simulations – mesh relaxation (Kangaroo)
- Data and Geometry manipulation
- 3D Voronoi Cells distributions and short path method (Shortest Walk)
- Volumetric Modelling (Dendro)

## Methodology:

The main objective of the course is to develop a computational thinking methodology, incorporating concepts from the biomimicry field to be integrated into architectural design. Designing an architectural pavilion produced exclusively in Grasshopper, a script will be developed, starting with simple processes for the generation of the basic geometry, which through physical simulations and manipulation of geometry and data, can be transformed into an architectural space determined by an organic structural lattice inspired by corals.





## Program:

**Session 1: Saturday, 13th January**, 2024

- Presentation / Introduction
- Grasshopper Script Design
- Q&A

**Session 2: Sunday, 26th January, 202**4

- Grasshopper Script Design
- Rendering – Post Production
- Q&A

## Software:

- Rhinoceros 6 /7 (Required)
- Grasshopper

**Grasshopper Plugins**

- Kangaroo
- Pufferfish
- Weaverbird
- Shortest Walk
- Dendro
- Bifocals

(https://parametric-architecture.com/wp-content/uploads/2023/11/Computational-

Thinking_Square_work03.jpg)

(https://parametric-architecture.com/wp-content/uploads/2023/11/Computational-Thinking_Square_work04.jpg)

## Important Notes:

- The “Computational Thinking” Studio workshop by PAACADEMY will start on Saturday, 14th January, at 11:00 (GMT).
- Total sessions: 2 Sessions
- The teaching duration per session will be 4 hours.
- Students will have time for a break between teaching hours.
- Each session and the entire studio will be recorded, and videos will be available for participants just a day after the class for unlimited time.
- PAACADEMY will provide a certificate of attendance.

- No previous knowledge of any software is required. You will learn everything in the workshop.
- The studio has limited seats. Tickets are non-transferable & non-refundable. Please read carefully before you register.

## Instructor:

### Ignacio Revenga


(https://parametric-architecture.com/wp-content/uploads/2023/11/portrait_aquare.jpg)

Ignacio Revenga, Spanish architect, artist, and computational designer, will be tutoring a 2-day workshop that combines computational design and biomimicry applied to architecture. Ignacio has a Bachelor's Degree and a Master's in Architecture from the Superior School of Architecture at the Polytechnic University of Madrid, Spain where he was invited as the main lecturer in two seminaries for students about how to apply coding to architecture using Grasshopper and Rhinoceros as interface and he participated in Computational Design Next 10 conference as a guest tutor. Specialized in parametric design and computational protocols he pushes the

limits of traditional architecture with complex geometries combining knowledge from new technologies and materials within the knowledge from nature (biomimicry, etc) and form-finding methods. He collaborated with CAZA as an architectural designer on several projects including Delgado Mausoleum, Camsur Capitol, BCDA Iconic Building, Cartagena Airport, La Salle Academic Complex, The Cocoon, and La Vega, among others.

(https://parametric-architecture.com/wp-content/uploads/2023/11/Computational-Thinking_-Web.jpg)

**Topic:** Computational Thinking
**Date:** January 13 – 14, 2024
**Time:** 11:00 – 15:00 GMT
**Format:** Online on Zoom
**Duration:** 2 Sessions (8 Hours)
**Registration Deadline:** January 12, 2024
**Total Seats:** 50 seats
**Difficulty:** Beginner – Intermediate
**Language:** English
**Certificate:** Yes
**General Registration:** 80 EUR
**Fee For Digital Members:** 68 EUR (15% discount available only for Digital Members (https://parametric-architecture.com/subscribe/))
**Organized By:** PAACADEMY
**Tutor:** Ignacio Revenga
**Recordings:** Recordings will be available for all participants afterward indefinitely.

Register Now (https://parametric-architecture.com/paacademy/computational-thinking/)

Få högre poäng på testet

SquidFactor

Öp

**Share with a friend:**

**Courses:**

Learn about parametric and computational from the online courses at the PAACADEMY:


(https://parametric-architecture.com/paacademy/parametric-intelligence/)

**Parametric Intelligence (https://parametric-architecture.com/paacademy/parametric-intelligence/)**


(https://parametric-architecture.com/paacademy/computational-thinking/)

**Computational Thinking (https://parametric-architecture.com/paacademy/computational-thinking/)**


(https://parametric-architecture.com/paacademy/formverse-with-cinema-4d-2-0/)

**FormVerse with Cinema 4D 2.0 (https://parametric-architecture.com/paacademy/formverse-with-cinema-4d-2-0/)**


(https://parametric-architecture.com/paacademy/3d-printing-ceramics-advanced-digital-flow/)

**3D-Printing Ceramics: Advanced Digital Flow (https://parametric-architecture.com/paacademy/3d-printing-ceramics-advanced-digital-flow/)**


(https://parametric-architecture.com/paacademy/revit-flow-2-0-digital-member/)

**Revit Flow 2.0 – Digital Member (https://parametric-architecture.com/paacademy/revit-flow-2-0-digital-member/)**


(https://parametric-architecture.com/paacademy/ai-immersed-artistry/)

**AI-Immersed Artistry (https://parametric-architecture.com/paacademy/ai-immersed-artistry/)**

(https://parametric-architecture.com/author/montaser/)

**Montaser Mesk**

(https://parametric-architecture.com/author/montaser/)

See All Articles (https://parametric-architecture.com/author/montaser/)

# Leave a Comment

Your email address will not be published. Required fields are marked *

Type here..

Name*

Email*

**Website**

**Save my name, email, and website in this browser for the next time I comment.**

I'm not a robot
reCAPTCHA
Privacy - Terms

Post Comment »

(https://www.corian.uk/-corian-r-automated-3d-fabrication-solution-)

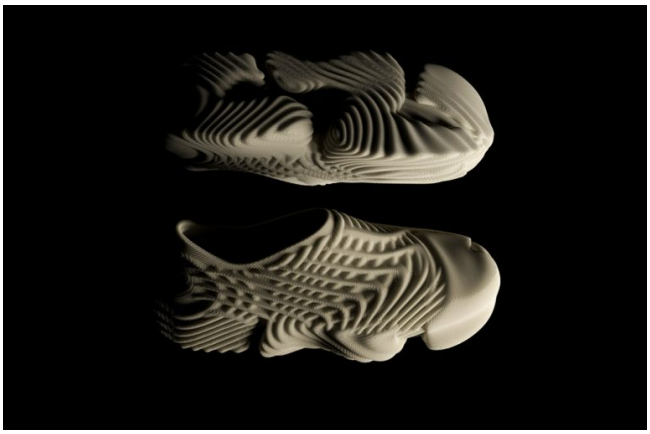
**Få högre poäng på teste**
SquidFactor

## Become A Digital Member

Subscribe only for €3.99 per month. Cancel anytime!

**Subscribe Now**
**(https://parametric-architecture.com/subscribe/)**

Articles



**Unleashing the potential of parametric geometries with Nolan Kim (https://parametric-architecture.com/unleashing-the-potential-of-parametric-geometries-with-nolan-kim/)**

(https://parametric-architecture.com/unleashing-the-potential-of-parametric-geometries-with-nolan-kim/)

**Tim Fu wants “to explore the radical alternative and push the machine’s creative autonomy” (https://parametric-architecture.com/tim-fu-wants-to-explore-the-radical-alternative-and-push-the-machines-creative-autonomy/)**

(https://parametric-architecture.com/tim-fu-wants-to-explore-the-radical-alternative-and-push-the-machines-creative-autonomy/)

**How MidJourney And DALL·E 2 Help Designers to Create Unique Concepts? (https://parametric-architecture.com/how-midjourney-and-dalle-2-help-designers-to-create-unique-concepts/)**

(https://parametric-architecture.com/how-midjourney-and-dalle-2-help-designers-to-create-unique-concepts/)

**Exploring 3D printed housing as a solution for post-disaster temporary shelters (https://parametric-architecture.com/exploring-3d-printed-housing-as-a-solution-for-post-disaster-temporary-shelters/)**

(https://parametric-architecture.com/exploring-3d-printed-housing-as-a-solution-for-post-disaster-temporary-shelters/)


(https://parametric-architecture.com/dreaming-with-ai-studio-rolando-de-la-cruz/)

Få högre poäng på teste
SquidFactor

## Projects

**John Heah's masterful design for Clinique La Prairie Resort in Amaala, Saudi Arabia (https://parametric-architecture.com/john-heahs-masterful-design-for-clinique-la-prairie-resort-in-amaala-saudi-arabia/)**

(https://parametric-architecture.com/john-heahs-masterful-design-for-clinique-la-prairie-resort-in-amaala-saudi-arabia/)

**Tokyo Music Hall by Hajizadeh & Associates (https://parametric-architecture.com/tokyo-music-hall-by-hajizadeh-associates/)**

(https://parametric-architecture.com/tokyo-music-hall-by-hajizadeh-associates/)

**The Misty Oasys by Mask Architects: Under the Mushroom Canopies (https://parametric-architecture.com/the-misty-oasys-cool-down-under-the-mushroom-canopies/)**

(https://parametric-architecture.com/the-misty-oasys-cool-down-under-the-mushroom-canopies/)

**Aysegul Altinel rebuilds Istanbul as Legoland by using AI (https://parametric-architecture.com/aysegul-altinel-rebuilds-istanbul-as-legoland-by-using-ai/)**

(https://parametric-architecture.com/aysegul-altinel-rebuilds-istanbul-as-legoland-by-using-ai/)

(https://parametric-architecture.com/artificial-intelligence-bundle/)

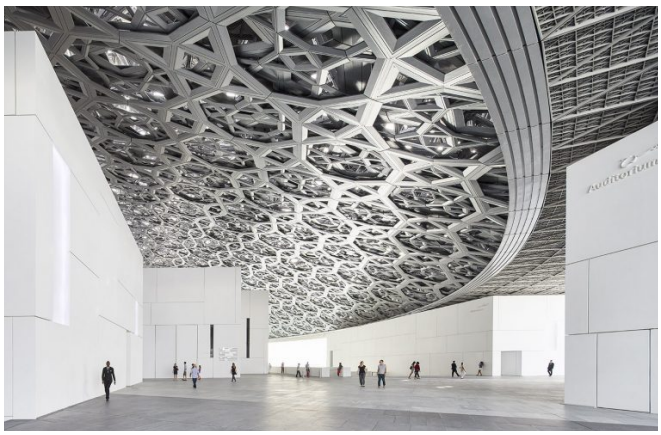
## Videos

**What is Concrete 3D Printing? (https://parametric-architecture.com/what-is-concrete-3d-printing/)**

(https://parametric-architecture.com/what-is-concrete-3d-printing/)

**3D-Printing in Architecture (https://parametric-architecture.com/3d-printing-in-architecture/)**

(https://parametric-architecture.com/3d-printing-in-architecture/)



**Louvre Abu Dhabi by Jean Nouvel, Serving as a Cultural Landmark (https://parametric-architecture.com/louvre-abu-dhabi-serving-as-a-cultural-landmark/)**

(https://parametric-architecture.com/louvre-abu-dhabi-serving-as-a-cultural-landmark/)

**What is Building Information Modeling (BIM)? (https://parametric-architecture.com/what-is-building-information-modeling-bim/)**

(https://parametric-architecture.com/what-is-building-information-modeling-bim/)

## Weekly Newsletter in Your Inbox

Email

**Next**

Få högre poäng på test
SquidFactor

Explore More

(https://parametric-architecture.com/solar-trees-marketplace-by-koichi-takada-architects-now-open-in-shanghai/)

**Solar Trees Marketplace by Koichi Takada Architects, now open in Shanghai (https://parametric-architecture.com/solar-trees-marketplace-by-koichi-takada-architects-now-open-in-shanghai/)**

Serra Utkum Ikiz - 31/10/2023

(https://parametric-architecture.com/is-the-metaverse-key-to-unlocking-a-new-era-of-public-space-in-the-digital-world/)

**Is the metaverse key to unlocking a new era of public space in the digital world? (https://parametric-architecture.com/is-the-metaverse-key-to-unlocking-a-new-era-of-public-space-in-the-digital-world/)**

Tom Brennecke - 16/02/2023

(https://parametric-architecture.com/best-granite-countertops-for-your-kitchen/)

**Best Granite Countertops for Your Kitchen (https://parametric-architecture.com/best-granite-countertops-for-your-kitchen/)**

PA Next Team - 28/07/2021

(https://parametric-architecture.com/hyperloop-abu-dhabi-station-by-an-onymous/)

**Hyperloop Abu Dhabi Station by AN.ONYMOUS (https://parametric-architecture.com/hyperloop-abu-dhabi-station-by-an-onymous/)**

Team PA - 01/09/2019


(https://parametric-architecture.com/daniel-libeskinds-the-crystal-inspired-by-the-crystalline-forms-in-the-roms-mineralogy-galleries/)

**Daniel Libeskind's 'The Crystal' inspired by the crystalline forms in the ROM's mineralogy galleries (https://parametric-architecture.com/daniel-libeskinds-the-crystal-inspired-by-the-crystalline-forms-in-the-roms-mineralogy-galleries/)**

Serra Utkum Ikiz - 29/07/2023

(https://parametric-architecture.com/neom-invested-175m-in-urban-air-mobility-pioneer-volocopter/)

**NEOM invested $175M in urban air mobility pioneer Volocopter (https://parametric-architecture.com/neom-invested-175m-in-urban-air-mobility-pioneer-volocopter/)**

Serra Utkum Ikiz - 08/11/2022

(https://parametric-architecture.com/ecologicstudios-new-exhibition-habitat-one/)

**ecoLogicStudio's new exhibition, "Habitat One" (https://parametric-architecture.com/ecologicstudios-new-exhibition-habitat-one/)**

Serra Utkum Ikiz - 06/10/2022

(https://parametric-architecture.com/rbdsai-labs-sahil-tanveer-explores-the-intersection-of-ai-ethics-and-architectural-innovation/)

**RBDSai Lab's Sahil Tanveer explores the intersection of AI, ethics, and architectural innovation (https://parametric-architecture.com/rbdsai-labs-sahil-tanveer-explores-the-intersection-of-ai-ethics-and-architectural-innovation/)**

PA Editorial Team - 27/08/2023

(https://parametric-architecture.com/)

ParametricArchitecture is an online platform that showcases the game-changing capabilities of parametric design and computational tools in architecture, design, and manufacturing.

## Never Miss

PA TALKS(https://parametric-architecture.com/pa-talks/)

CD NEXT(https://parametric-architecture.com/cd-next/)

PAACADEMY(https://parametric-architecture.com/paacademy/)

Digital Membership(https://parametric-architecture.com/subscribe/)

## Get in Touch

Jobs(https://parametric-architecture.com/jobs/)

Contact(https://parametric-architecture.com/contact-us/)

Submit Project(https://parametric-architecture.com/submit-project/)

Subscribe to Newsletter(https://parametric-architecture.com/newsletter/)

## Inner Pages

About(https://parametric-architecture.com/about-us/)

Cookie Policy(https://parametric-architecture.com/cookie-policy/)

Privacy Policy(https://parametric-architecture.com/privacy-policy/)

Digital Membership Agreement(https://parametric-architecture.com/digital-membership-agreement/)

Distant Sales Agreement(https://parametric-architecture.com/distant-sales-agreement/)

**Follow us:**

**Subscribe only for €3.99 per month!**

**Subscribe (https://parametric-architecture.com/subscribe/)**

© 2023 ParametricArchitecture. All rights reserved. Use of this site constitutes acceptance of our User Agreement and Privacy Policy and Cookie Statement and Your California Privacy Rights. PA may earn a portion of sales from products that are purchased through our site as part of our Affiliate Partnerships with retailers. The material on this site may not be reproduced, distributed, transmitted, cached or otherwise used, except with the prior written permission of PA Ad Choices.

Privacy and cookie settings