

Rethinking Egyptian Crafts Through Parametric Design

At the German International University in Egypt, two Industrial Design theses used Rhino and Grasshopper to reinterpret traditional Egyptian crafts through computational design. Inspired by Mashrabiya woodworking and Talli embroidery, the projects explore how parametric workflows can expand design possibilities while keeping artisans at the center of the process.

Parametric Adaptive Shell for an Autonomous Stock Handling Robot

Designed for a real-world logistics automation platform, this project explores how Rhino and Grasshopper can be used to develop adaptive industrial components that balance structural performance, mechanical constraints, ventilation, and manufacturability within a fully parametric workflow.

Aion: Turning History into

Morphology

Designed for Southeastern Louisiana University's centennial anniversary, Aion transforms institutional memory into inhabitable geometry. Developed through Rhino and Grasshopper, the monument combines parametric thinking, site analysis, and fabrication logic to create a public installation where history, movement, and community intersect.

From Form-Finding to Fabrication: Pabellón Generativo Michoacán

A generative pavilion built in Morelia, Mexico, explores how form-finding, Voronoi-based segmentation, and digitally fabricated nodes can translate computational logic into a lightweight physical structure assembled from recycled CPVC components.

Helical Timber Staircase: Parametric Design and Fabrication of a Non-Standard

Geometry

This project explores the design and fabrication of a non-repetitive helical staircase, where parametric workflows and NURBS modeling enable precise control over complex geometry.

Marquise H.V: Parametric Canopy and Digital Fabrication in Teresina

A fully parametric canopy composed of 210 unique glass panels showcases how computational design and digital fabrication can be successfully implemented beyond major urban centers.

VITRO-P: Generative Design for Customizable Vascular Networks in Optical Tissue Phantoms

A generative design workflow built in Rhino and Grasshopper is redefining how vascular systems can be simulated, fabricated, and studied. VITRO-P introduces a flexible, fabrication-agnostic approach to creating customizable tissue phantoms with embedded vasculature, bridging computational design and

biomedical research.

“Learn Rhino Python without knowing Python”

A practical introduction to using Python within Rhino and Grasshopper, helping designers gain greater control over complex operations while maintaining the clarity of visual workflows. The book presents a hybrid approach where scripting enhances, rather than replaces, parametric design.

Casa Fratelli: Generative Growth within a Historic Ruin

A parametric liana composed of 1,000 3D-printed elements reclaims a historic ruin in Bucharest, using generative design and custom fabrication workflows to merge light, material, and growth logic.

Spatial Monoliths: From NURBS

Data to Hand-Cast Sculptures

Spatial Monoliths explores the transformation of NURBS-based digital models into hand-cast sculptures, combining parametric design, laser-cut molds, and rotational casting techniques. The project bridges computational workflows with material craftsmanship, resulting in precise yet expressive physical artifacts.