



**Digital Craft Factory**

**Poster**

**Topic: Design**

**Author(s):**

**Alex Coppola**

Italy, University of Rome “Sapienza”, Department of PDTA

**Abstract**

Digital Craft Factory wants to investigate the relationship between design and craftsmanship in the new era of digital fabrication: how this has transfigured the knowledge and workflow exchanges between designer and craftsman. The result is a new type of artisanship in which the designer's critical thinking, to plan and project any problems in a single abstract solution, is embedded with the craftsmanship's critical experience, that acts more like a step by step process. [1]

Due to the algorithms aided design is now possible to overcome any boundaries between the two disciplines and design a merging work flow, in order to transfer it in the new world of the rapid manufacturing. [2]

In particular, it was possible to develop an assisted creation system that helps guitar makers to fasten the design of the instrument morphology, according to the preference of the customers, and possible to produce easily through rapid manufacturing, in a file-to-factory optic.

It's an algorithm-aided-design process that helps to customize the guitar according to some open inputs, generating the relative digital output.

This made possible to develop a unique shape, without losing the functionality.

This new kind of design modality emerges from a close observations of the artisan techniques and then is embedded in the design process thanks to flexible and accessible tools of generative thinking [3], in which the consciousness and creativity of the artisan work is crystallized in a responsive process, able to iterate all the possible solutions.

Alex.coppola@uniroma1.it

**Key words:** Algorithm-Aided-Design, Craft, Digital Fabrication

**Main References:**

[1] Micelli, S. (2011). *Futuro artigiano: l'innovazione nelle mani degli italiani*. Marsilio Editori spa.

[2] Hensel, M., Menges, A., & Weinstock, M. (2006). *Techniques and Technologies in Morphogenetic Design* (Architectural Design March April 2006 Vol. 76 No. 2).

[3] Tedeschi, A. (2014). *AAD Algorithms-aided design: Parametric strategies using Grasshopper*. Edizioni Le Pensur.