Experiential Design – Rethinking relations between people, objects and environments

- **Paper / Proposal Title:**
  
  An erudite design process to incorporate 3d printing in construction

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- **Abstract (300 words):**

  **Abstract.** Nowadays, parametric design, scientific analysis and digital fabrication are dominant. Many architectural practices are increasingly seeking to incorporate advanced digital software and fabrication in their projects. Proposing an erudite design process that combines digital and practical aspects in a strong frame within the method was resulted from the dissertation research. The digital aspects are the progressive advancements in algorithm design and simulation software. In current design processes, these aspects have assisted the firms to develop a more holistic
concepts at the early stage and relate involved people, objects and digital and non-digital environments. The erudite design process enhances the current design processes by encouraging the designer to implement the construction and architecture knowledge within the algorithm to make successful design processes. The erudite design process also involves the ongoing improvements of applying the new method of 3D printing in construction. This is achieved through the “data-sketches”. The term data-sketch was developed by the author in the dissertation that was recently completed. It accommodates the decisions of the architect on the algorithm. This paper introduces the erudite design process and its components. It will summarize the application of this process in development of the ‘3D printed construction unit’. This paper will illustrate through several diagrams, the new process. The first section of the paper is describing the new design process and the second part details about how the material plays a role in this process. The main concept of interconnecting tools and concepts bonds the design thinking with skills required to develop a final design. Tools such as sketching, mock-up and prototyping as the early stage remains in a cycle which travels through digital platform and hand-made platform. The erudite design process emphasis the development of design thinking by creating a loop of tools and skills that passes through hand-made and digital platform and at all points considers the material as the main element of design.

• Author(s) Biography (200 words each):

Maryam Kalkatechi completed her PhD in architecture in 2017. The thesis proposed a new construction unit. During the research years worked both as research assistant and teaching assistant. With several years of equivalent experience, currently develops concepts that are based on material and construction research. Combining practice, a theory was the initial goal and still is carrying on this goal. Currently I have several papers relevant to research areas. Three main research areas were developed based on the thesis. One, Experiments in tools and techniques, second, experiments in definition of algorithm and paradigms, and third experiments in designing architectural elements and systems. This paper is based on educational collaboration and proposed a design method for strengthening the design thinking in practical process while using the advanced technology.

Generally, designing and writing papers on the research is my favorite thing to do. I love walking, swimming. For fun I love summer music festivals and concerts that are held in millennium park in the evenings around pm. I have lived in Chicago mostly and it is one of the most beautiful cities in the USA. I must admit I see the city as an architect, and I find it like a dream.