SoomeenHahm Design
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SoomeenHahm Design Ltd. – is a London based design studio focusing on design research and practice tackling the issues of computational paradigm in architecture across multiple scales and perspectives. The research looks at the ecology of computational power, technology and human intuition and see how this collaboration impacts on the design industry and physical environment. Approached from strong academic drives, the office is trying to bridge between academic interest and commercial practices. Practical work produced in the office includes from small products to large architectural and urban design - experts in providing conceptual design solutions.

Currently the office is interested in the use of AR/VR to execute complex and precise digitally generated forms. Questioning the future role of human, robot, machine and computer.

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Academic **Projects**
Research cluster 9 (RC9) is a unit of Architectural Design Program - a 12 month architectural masters course program in Bartlett UCL which is taught by Soomeen Hahm and Alvaro Lopez. This cluster each year produces series of unique design projects dealing with unique ways of designing and construction based on computational design discourse. This year, the unit looked into augmented reality technique used in design and fabrication process. Questioning the current state of high-tech robotic and machine fabrication processes, trying to understand the future role of human intelligence and computer intelligence.
RC6

Date: 2013-2017
Location: Bartlett, UCL, London, UK
Type: Research Projects
Tutor: Daniel Widrig, Stefan Bassing, Igor Pantic, Soomeen Hahn

RC6 investigates in hybridized computational design methods. The work invites to look more closely at the relationship between design processes and the implementation of materials. The research works with materials physically and also through numeric means. With the advent of computerization, this particular spectrum between the digital and the manual can crudely be identified as an area between the computational and the analogue: self-generating geometries versus formal constructions.
Bartlett undergrad unit 2 (BSc Program) was run by Aleksandria Rizova and Soomeen Hahm for 2 years during 2016-2018. The unit explores material driven research, researches on architectural spaces that are determined by material tectonics. Each student developed individual projects started from very specific material experiments, searching for tectonic and spacial qualities from those tests which then carefully scaled up to create meaningful and complex architectural proposals. The program was a 1 year long design studio for 2nd and 3rd year Bachelors degree students.
AA Intermediate Unit 13 is taught by Soomeen Hahm during 2016-2018. The unit developed different building projects based on computational design thinking, thinking about advancements in technology and latest shift in paradigms, explores and imagine how these changes will impact on architecture and urbanism in near future. The unit looked at this issue from multiple perspectives, question and tries to answer/ foresee the ways we will design, construct and experience our world in near future based on the reading of the computational design history. The topics investigated includes artificial intelligence, machine learning, genetic algorithm, generative computation, modular robotics, multi-material 3d printing, robotic fabrication etc...
AAVS Seoul

Date: 2012–present
Location: Seoul, Korea
Type: Research Projects
Directors: Jooeun Sung, Soomeen Hahm

AA Visiting School Seoul is an annual workshop series directed by Jooeun Sung and Soomeen Hahm, hosted in Yonsei University, Seoul, Korea each year. Under the title of “Social Algorithms”, each year in this workshop, we divided our participants into 3-4 units to develop separated design projects to address the issue of Social design and Algorithmic design from different approaches and perspectives to openly discuss and share ideas. The specific small unit taught by Soomeen Hahm with Aleksandar Buncic, Igor Pantic, HyunJae Nam investigated more specifically into algorithmic design approach, exploring urban design using data collection and visualization techniques.
AA Visiting School Shanghai is a annual workshop series directed by Tom Verebes where SD has been participated as teaching faculty since 2011. The workshop runs multiple units under a larger agenda regarding computational design approach in urban design. The images shown in this page is a collection of work from the unit ran by Soomeen Hahm, Igor Pantic and Wenqian Yang in August 2018. This year, we explored the ways we build structures through the use of augmented reality technique. We chose to use PVC pipes and ready made joint elbows to assemble the structure. The design is highly depending on (Traveling Salesman Problem) algorithm. After forms are generated computationally, they could be executed in a very short time thanks to AR without a need of blue print.
AA Visiting School Beijing has 8 years of history. Each year, this school explores specific industrial sites in Beijing with real potential clients, government or authorities to discuss seriously and deeply how certain creative ideas can emerge to be able to have real and practical impact on decision makings on better transformation on the actual site. This school each year has gained great support from the authorities of the site and openly discuss about how data based, computational design research can be more beneficial to real life issues. Especially focusing on data driven urban analysis and master planning, SD developed unique projects in this program. In 2016, our students proposed a time based transformation of the Beijing Water Cube over 50 years time through the understanding of the building as accumulation of base geometry. In 2017, we proposed to understand the 751 factory through communicating in VR/AR environment using game engine.
Online Educational Projects (since 2011)

Online, Coding/Scripting/Modelling Tutorials
As Programmer, Researcher & Designer

Plethora project (http://plethora-project.com)

Portfolio & Code Library (http://soomeenhahm.com)

ZHA Wiki (Zaha Hadid Architects)

Workshop, Lecture & Conferences

AA Visiting School Seoul, with Yonsei University
As Director (http://seoul.aaschool.ac.uk)

ACADIA Conference 2014
As Hackathon Champion

ACADIA Conference 2015
As Hackathon Champion

Tsinghua University, Parametric Design Workshop

Scoopit (reference links) etc.

Tutorials, codes and references are uploaded as proper links on relevant websites including:
OpenProcessing (processing codes), Vimeo (video tutorials), Pinterest (images, sketches etc)
SD Platform

Date: 2017 Aug - Present
Location: London, UK
Type: Research Projects

Food4Rhino: [https://www.food4rhino.com/app/sdplatform](https://www.food4rhino.com/app/sdplatform)

SDPlatform is a collective learning initiative to share knowledge, tutorials, tools about computational design. This initiative started off by setting up a weekly event for teaching and knowledge sharing workshops for young and passionate people. Also the tutorials are created and uploaded online in various format from written documents, video tutorials to sharable codes.

SD is also active in establishing toolsets easy to be used and developed by designers especially for those who are interested in generative design, multi-agent system. Code are written and shared online including short-listed Java software and recently published grasshopper plug-in.
Practical Projects
Steampunk

Date: 2019 Jan
Location: Tallinn, Estonia
Type: Public installation
Size: 9.3m x 10.3m x 5.8m
In collaboration with:
Igor Pantic, Gwilym Jahn & Cameron Newham (Fologram)

1st prize winning entry to international competition for Tallinn Architectural Biennale 2019

Steampunk is a proposal for a pavilion made of steam-bent timber elements, using analogue tools augmented with the precision of mixed reality environments. It explores an adaptive design and fabrication system that is resilient to wide tolerances in material behavior and fabrication accuracy, occupying a fuzzy in-between that is neither purely ad-hoc nor purely automated. Steampunk explores a path to rethink applications and traditions of craft in pursuit of their evolution.
Cloud Folly is a public installation located in Geumchon Folly Park, Seoul, South Korea. The project is based on the on-going research studying generative form which is driven by series of criteria. The growth strategy is based on structural principle. Utilization of multi-agent system allowed to generate geometry which is driven by sets of functional criteria as well as series of structural principle. Truncated octahedron is selected as base geometry of the main component in order to ease the construction. This naturally allowed the system to be able to construct a multi-dimensional growth system within a 3 dimensionally packed grid.
Hisense Museum

Date: 2018 Dec
Location: Qingdao, China
Type: Museum Interior
Size: 2100m²
In collaboration with: AOM, Igor Pantic & Jakub Klaska
The National Museum Complex

The National Museum Complex Project is an exciting opportunity for Administrative City to create a one-of-a-kind cultural facility that has the potential to become a cultural symbol of national and international significance. Serving as a cutting-edge creative platform, it will help to form the cultural identity of Administrative City and unleash the creativity of its people. Through its location in the city, its distinct program, its accessibility to all citizens, and its iconic design, the National Museum Complex has the potential to establish itself as the creative epicenter in South Korea.
Three Squares

Date: 2015 May
Location: Belgrade, Serbia
Type: Urban Design
In collaboration with: Igor Pantic, Gilles Retsin and Isaa Bloch

The competition brief asked for the redevelopment of three main squares in Belgrade (Serbia): the Parliament Square, Republic Square and Nikola Pasic square. The proposal redefines the three squares, developing a unique character and rich differentiation in the city center, while maintaining an overall coherence. The identity of the squares is reinforced, and sometimes slightly twisted to offer new insights in the urban fabric of Belgrade. At the base of the concept is the idea of squares or public spaces as clearly defined figures or objects within a city fabric. The current situation is one of fragmentation, where squares are diffused and have a distorted figure, often cluttered and scattered with randomly distributed objects.
Product Design
Fluid moves mysteriously. The behavior is a result of complex interaction between different aspects of matters such as speed, mass, weight, temperature. Only once all these aspects affect together cohesively, the pattern evolves.

The Frozen Fluid is a series of lamp that is capturing moments of fluids in 3 dimensional sculpture which is only enabled by the use of computer simulation and digital fabrication technique. It is a result of dynamic flow of digital particles which sometimes looks like liquid fountain, sometimes looks like column of fast spewing smoke depending on the observers.

**Frozen Fluid**

*Video:* https://vimeo.com/321555612
The design of the series was inspired by the idea of continuity. The patterns and shapes were generated by computational dynamic design system to create a 3D continuous loop. The rings consist of several continuous stream or seam lines flowing over the entire ring from front to back, from inside and outside, folded and overlaid. The design provides the viewer for a visual experience following the continuous loop 3 dimensionally. This continuous loop cannot be experienced in 2D spaces but only through observing as 3D object.

Infinite Ring
Date: 2017 Oct
Type: Jewellery (Ring)
Material: 3D Print

A’Design Award - Silver Prize 2018
Nanjing Youth Olympic Centre
Nanjing, China
Main Designer (July 2011)

D’Leedon Singapore
Main Designer (April 2020)

Goswell Road London
Main Designer (April 2011)

Competitions
Main Designer (April 2013)

1734_Dalian Library
1776_Shanghai Expo Museum
1704_Mosque Museum of Tirana
1810_Flinders
D’Leedon Singapore (Apr, 2010-2011)
Zaha Hadid Architects London, UK
as Designer

Involved Stage: Design Development

D’Leedon Singapore is a residential district developing by a Singaporean developer. The project is under construction, composed by mainly 3 parts: residential towers, villa & landscape facility. I was involved from design development stage, in charge of designing and developing different spaces. My main responsibility was delivering the overall package for villa’s 3D design development, structural coordination, interior package, facade package and consultant coordination etc.

Tower - Pencil Study

Master Plan

Tower - Pencil Study

Master Plan
Flinders Street Train Station
@ Zaha Hadid Architects

Mercedes-Benz Show Room
@ Zaha Hadid Architects

Sunset Strip Billboard
@ Zaha Hadid Architects / ZH Design
Product Design