Technology Driven Design

kEiTH Soo

Inheritance & Innovation
Intelligence-driven Fashion
2019 International Symposium on Clothing

What is Design?

Dictionary definitions for Design :-

1. to assign in thought or intention; purpose:

2. an outline, sketch, or plan, as of the form and structure of a work of art, an edifice, or a machine to be executed or constructed.

3. to form or conceive in the mind; to invent.

Origins

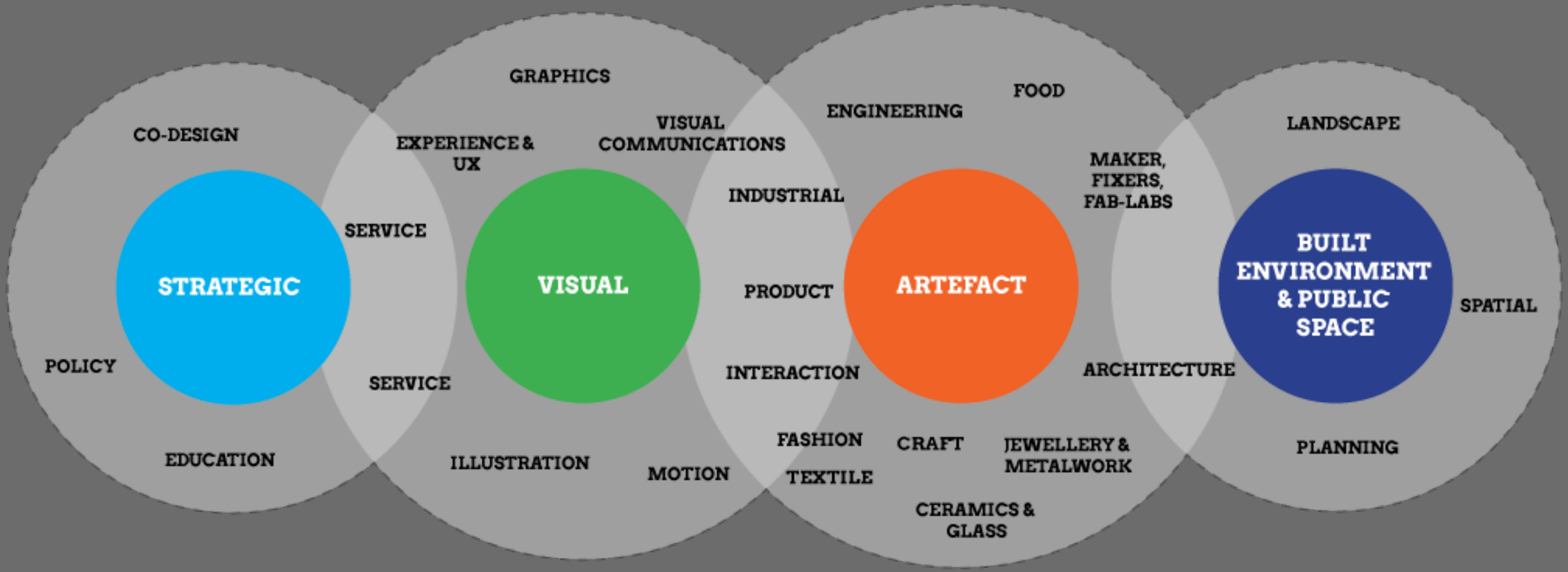
the changing nature of design can be explained by transformations

– the emergence of the *homo faber*
(Homo faber is the concept that human beings are able to control their fate and their environment as a result of the use of tools.)

– the idea of man as the *machine creator*

– the age of the *homo gubernator*
(A study of humans and human behaviour and societies in the past and present with new technologies;
The concept of man as the steersman of evolution)

The discipline of Design



Four orders of design

Graphic

Signs
Symbols
Print

Industrial

Products

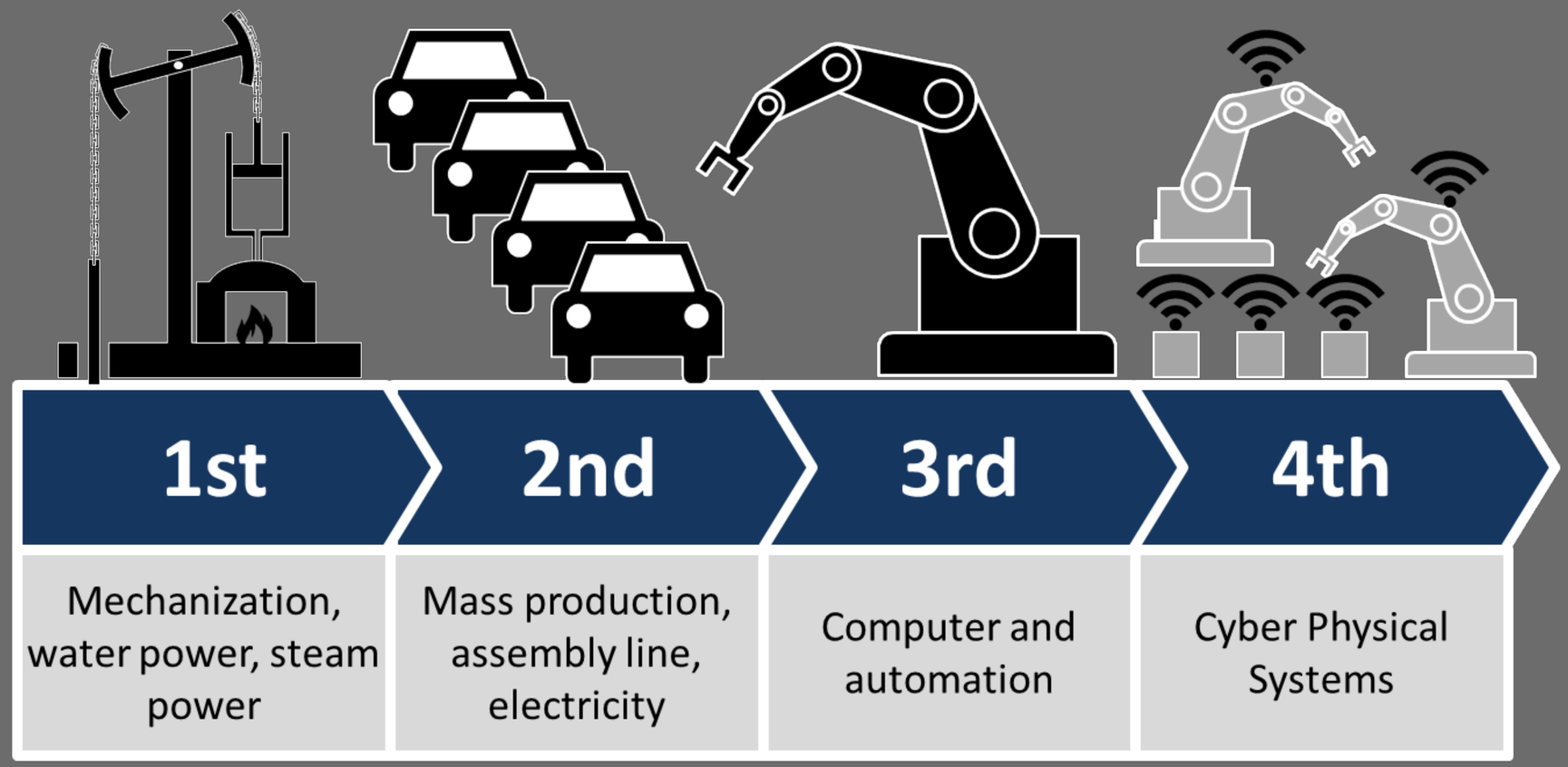
Interaction

Services
Experience
Interfaces
Information

Systems

Business
Organisations
Education
Governments

Richard Buchanan



Industrial Revolution

Traditional areas

Graphic and Industrial design are the results of a time

the Second Industrial Revolution

with a focus on the mass production of goods and services

The Fourth Industrial Revolution

"a fusion of technologies that is blurring the lines between the physical, digital and biological spheres."

–Klaus Schawb, 2016

So where are we now ?

Design inTech Report 2017

by John Maeda

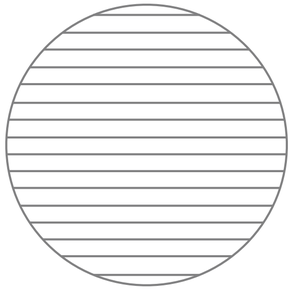
http://designintechreport.wordpress.com/

Inheritance & Innovation
Intelligence-driven Fashion
2019 International Symposium on Clothing

Review:

There are Three Types of Design

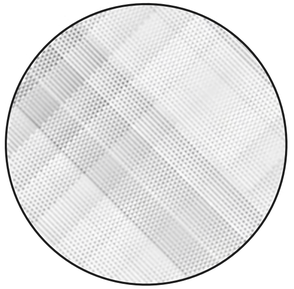
The last report reviewed the difference between Classical and Computational Design. This was somewhat controversial, but we review it here again.



DESIGN: "CLASSICAL DESIGN"

There's a right way to make what is perfect, crafted, and complete

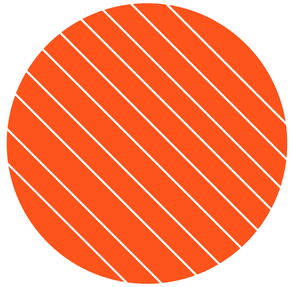
Driver/ the Industrial Revolution, and prior to that at least a few millennia of ferment.



BUSINESS: "DESIGN THINKING"

Because execution has outpaced innovation, and experience matters

Driver/ the need to innovate in relation to individual customer needs requires empathy.



TECHNOLOGY:"COMPUTATIONAL DESIGN"

Designing for billions of individual people and in realtime, is at scale and TBD

Driver/ the impact of Moore's Law, mobile computing, and the latest tech paradigms.

@johnmaeda

China

China Is A Major Force in Designer Co-Founded Companies

17 M

Designers in China with 0.5 million design graduates every year.

Three Designer Co-Founded Chinese Companies Have A Combined Market Cap Of Over $300B

Alibaba
Two of the eighteen co-founders are designers

Visual China
Four of the seven co-founders are designers

Xiaomi
Four of the eight co-founders are designers

Designer Co-Founded and Venture-Backed Startups Emerging In China

Meitu Xiuxiu
A selfie photo editor app and platform

Innomake
Design-driven smart transportation project

Youzan
An e-commerce application in WeChat app store

Taihuonao
A design-driven innovative community and incubator

zcool
Design community and imagery resource sharing

Mogujie
An online fashion e-commerce platform and community

Xiachufang
A community to share cooking recipes

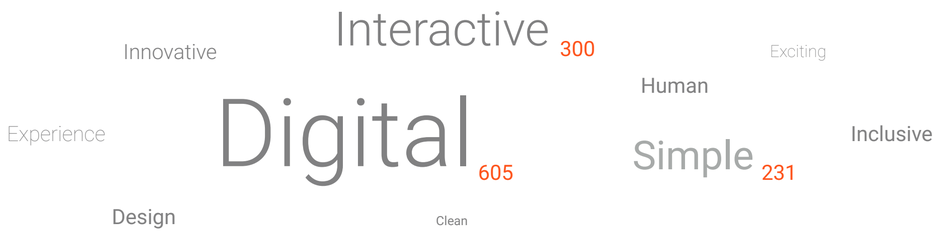
Tezign
A platform based design and creative talent solution

Haibo Lei / Co-founder+CEO at Taihuoniao, Ling Fan / Founder+CEO of Tezign, Professor Min Wang / CAFA

Trend The Future Of Design Is Digital

In 2016, the largest US-based national designer association AIGA issued a study in collaboration with Google to reveal a sentiment shift for its future towards digital and interactive forms of design.

Top 10 words to describe the Future of Design
Size is proportional to popularity



AIGA

SOURCE
AIGA x Google Design Census 2016

@AIGA @GoogleText

LEAST SATISFIED DESIGNERS

Publishing (74%), Print Design (74%), Architecture (71%)

MOST SATISFIED DESIGNERS

Industrial/Product Design (83%), Brand Strategy (82%), Digital Design (82%)

Why do we need to design

To improve our life.

How we design

Contemporarily

Inheritance & Innovation
Intelligence-driven Fashion
2019 International Symposium on Clothing

Classic Design

Where there is always a perfect methods on how things are made.

specification:

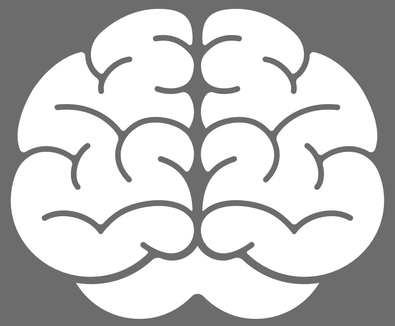
Design in practice

The aim was to produce a perfect product to the available known standard

Materials used were mostly from the traditionally source

Design with Design thinking

Is the chair the best solution to our problem specification:



User-centric

The aim was to produce a product that really aid user from new ideas

Achieve factor: Time, collaboration, perspective

The future

The New Way to design

Inheritance & Innovation
Intelligence-driven Fashion
2019 International Symposium on Clothing

Computational Design

Design for mass in real time, in any scale, on demand

Inheritance & Innovation
Intelligence-driven Fashion
2019 International Symposium on Clothing

How does Computational Design work

1. Provide a base to start

2. Assign perimeter and constraints

3. Inform computer on optimise traits

4. System generate mass simulations, within perimeter and constraints with optimise traits to create permutation

5. Produce several original outputs that best meet the requirement

Some common Identification of Computational Design

. Involve the use of algorithm to test a wide variety of computer driven design with specific rules and methods.

. Able to visualise design in complex lines/forms in 2D or 3D and use design in simulations to produce the best innovative results

. Applying data sources in the creation of new design

. Using cloud base computing power to create the unknown design outcomes and solutions

. Able to generate multiple design variations for testing and analysation.

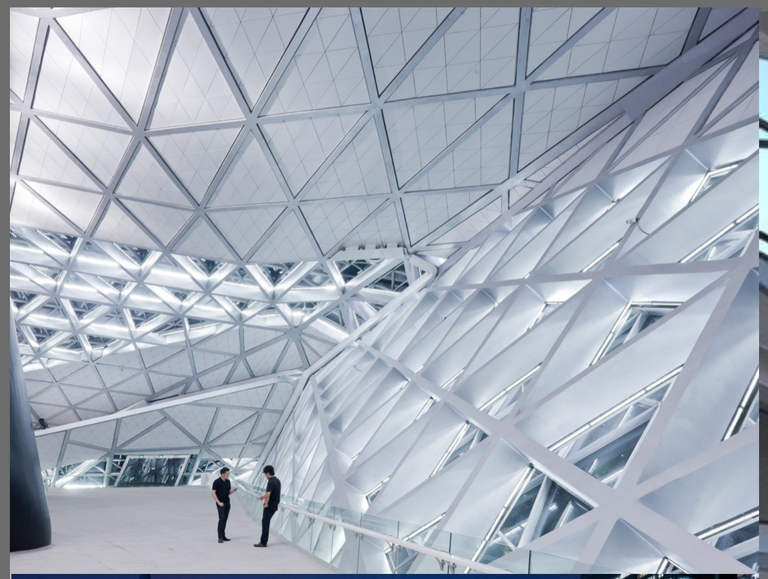
Traditionally we rely on intuition and experience to solve design problems, computational design is a new design methodology that can produce hundreds or thousands of design permutations to find multiple solutions.

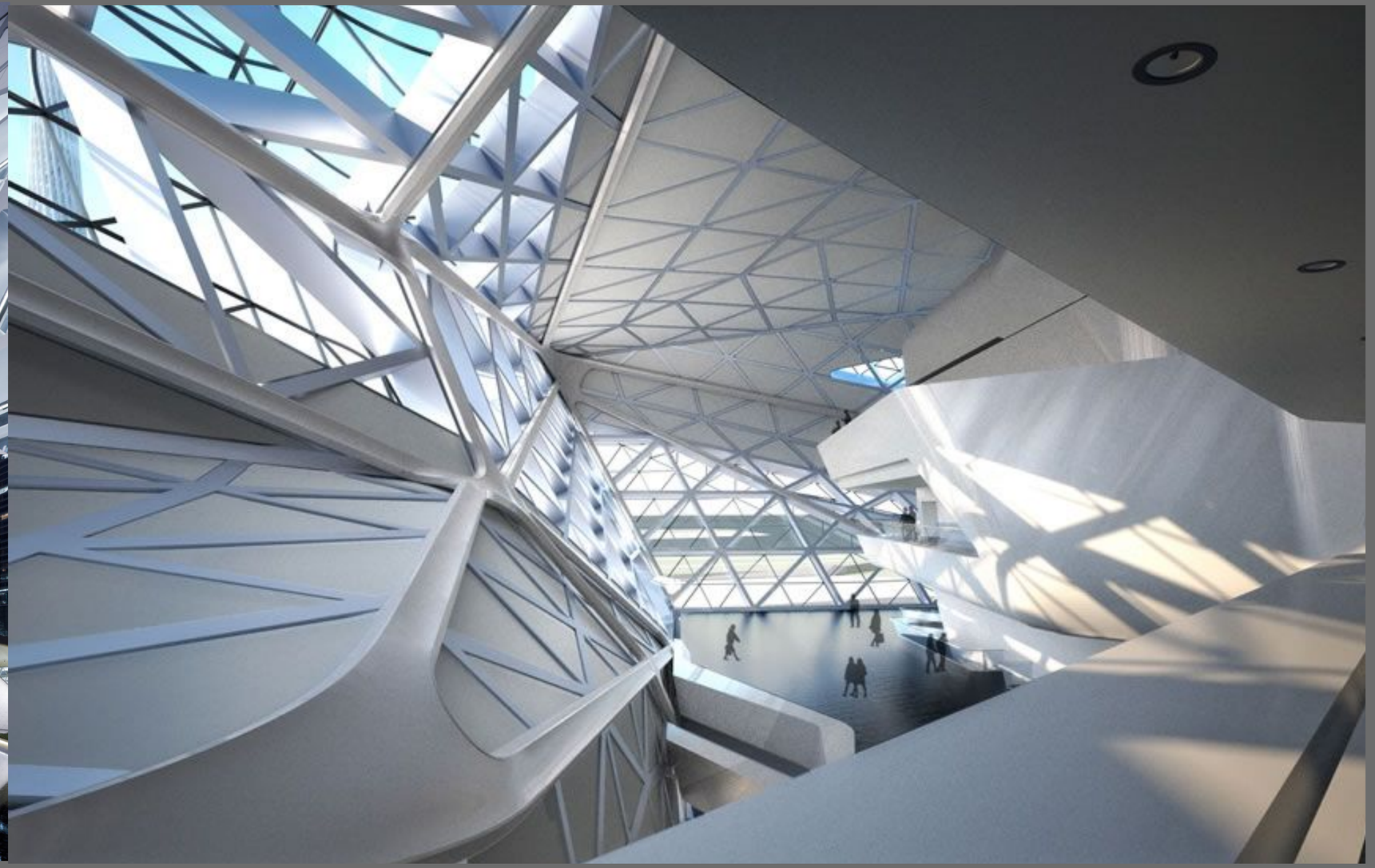
Therefore designs could be

Innovative

Insightful

Personalised





Zaha Hadid's Guangzhou Opera House

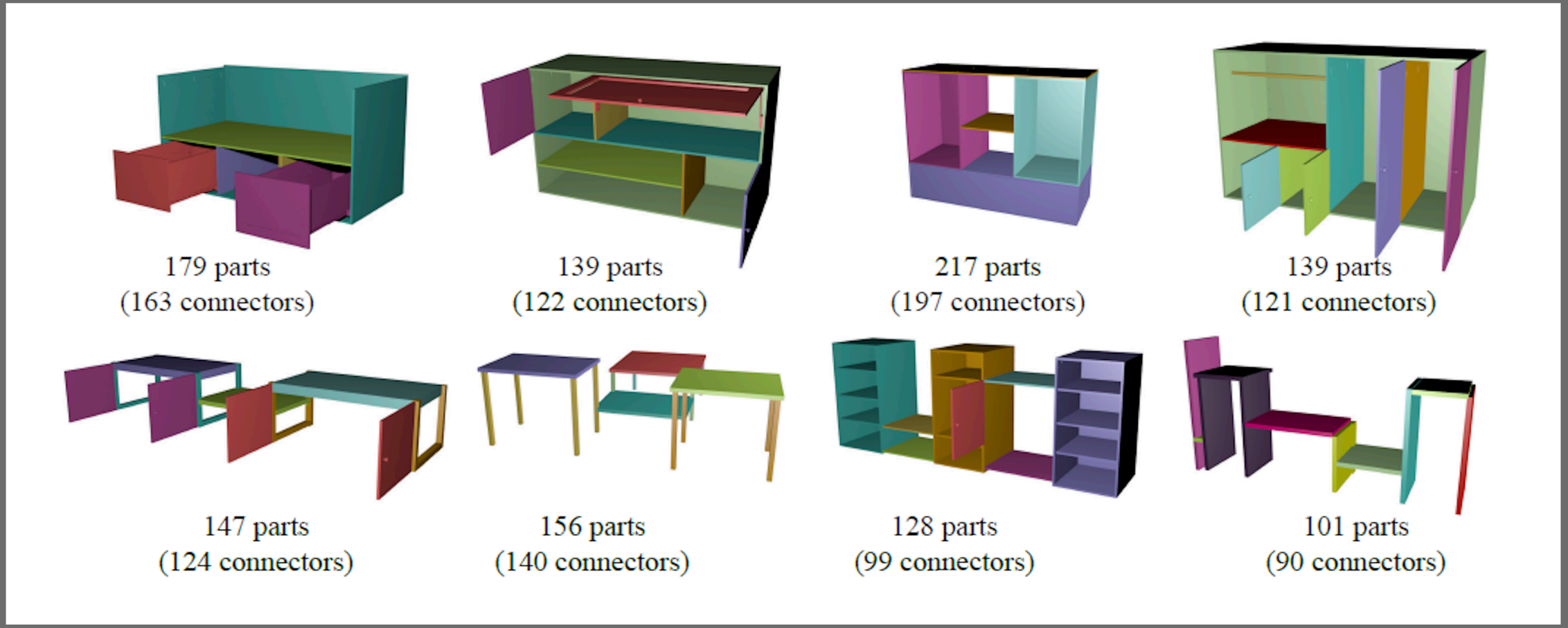
www.nytimes.com

Inheritance & Innovation
Intelligence-driven Fashion
2019 International Symposium on Clothing

3D printing application for Computational Design in the Fashion Industry

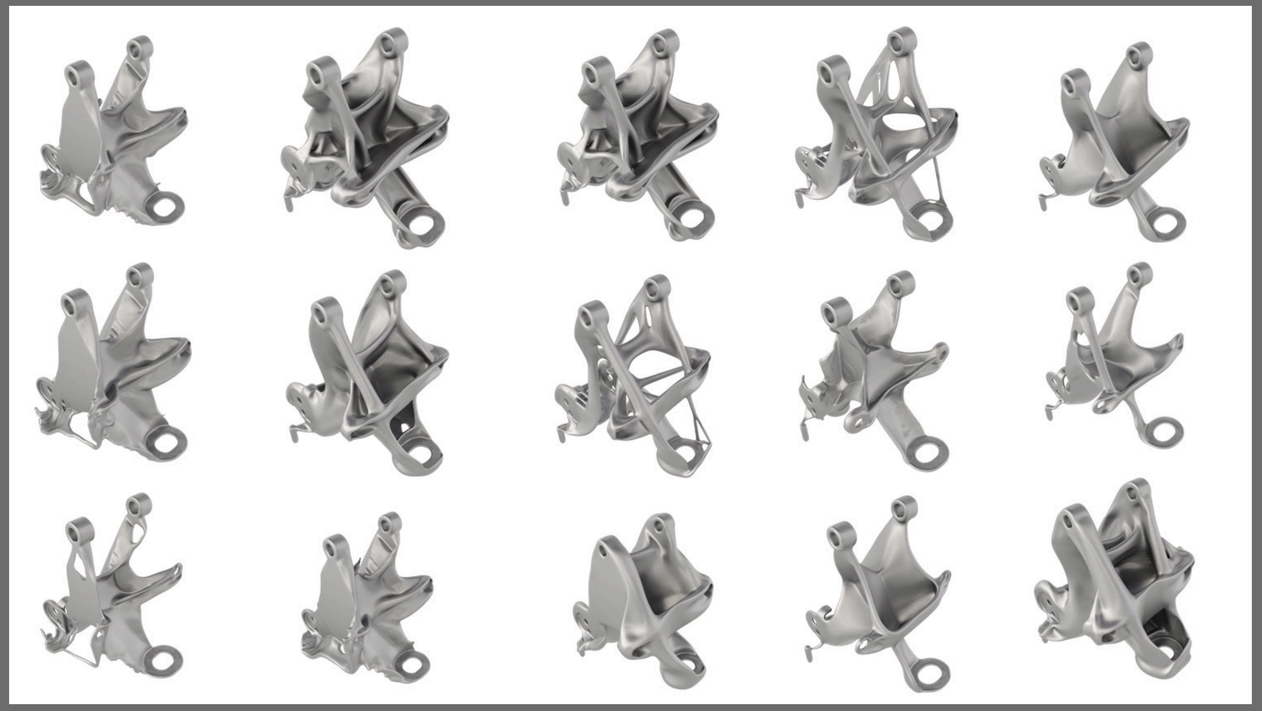
parameterizing.wordpress.com

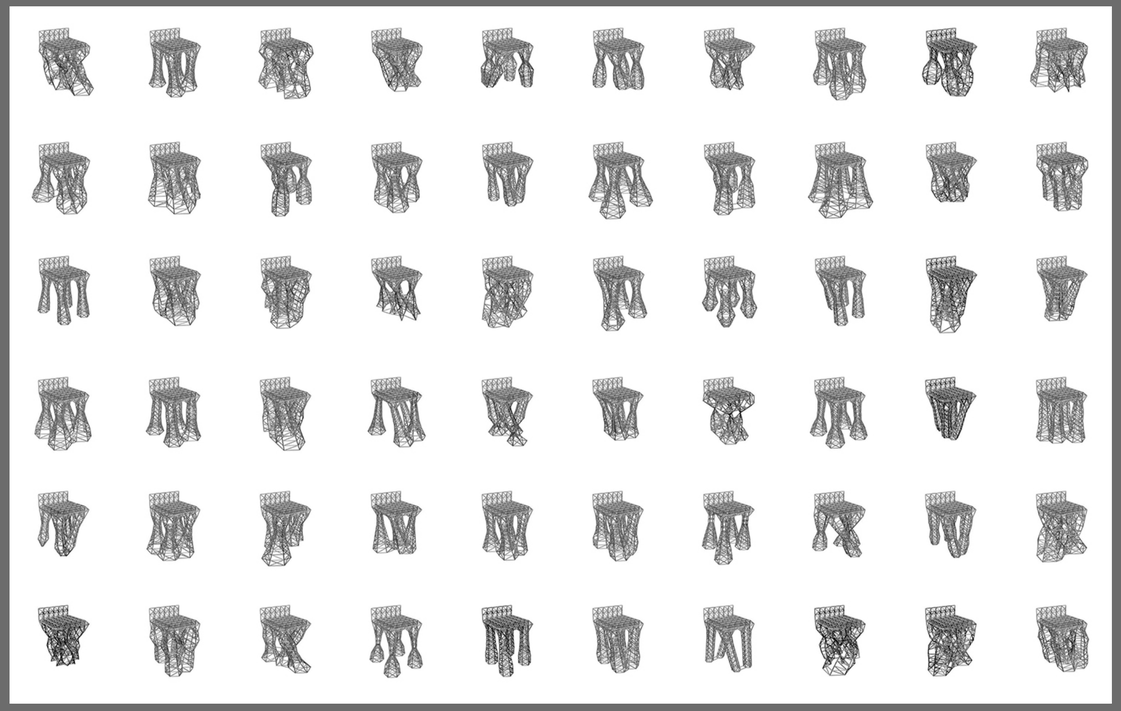
Inheritance & Innovation
Intelligence-driven Fashion
2019 International Symposium on Clothing



Computational Design in furniture design, permute options

http://www.faculty.idc.ac.il/arik/site/designFab.asp

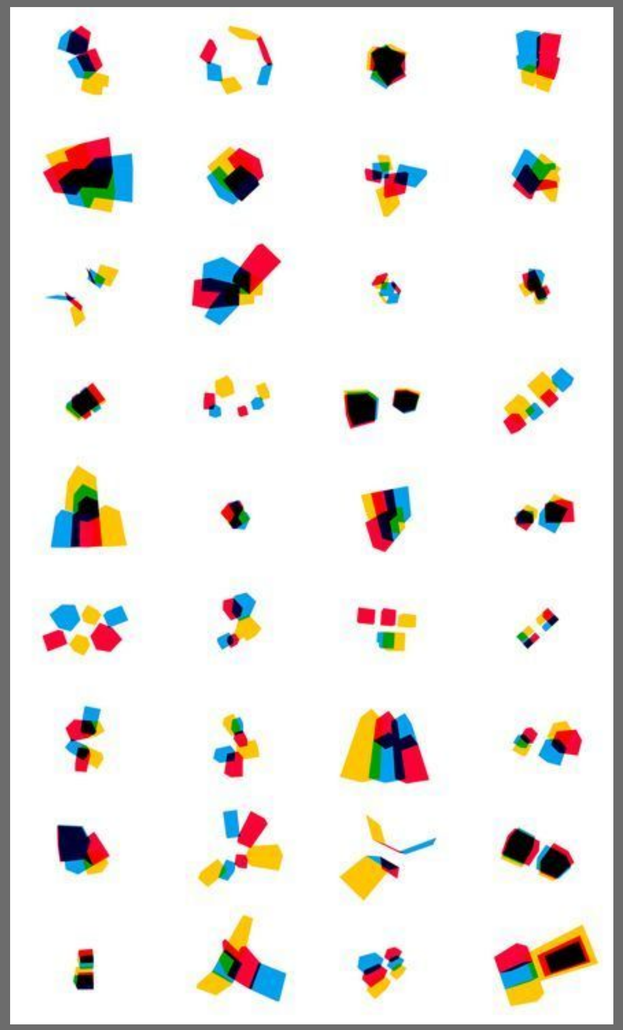


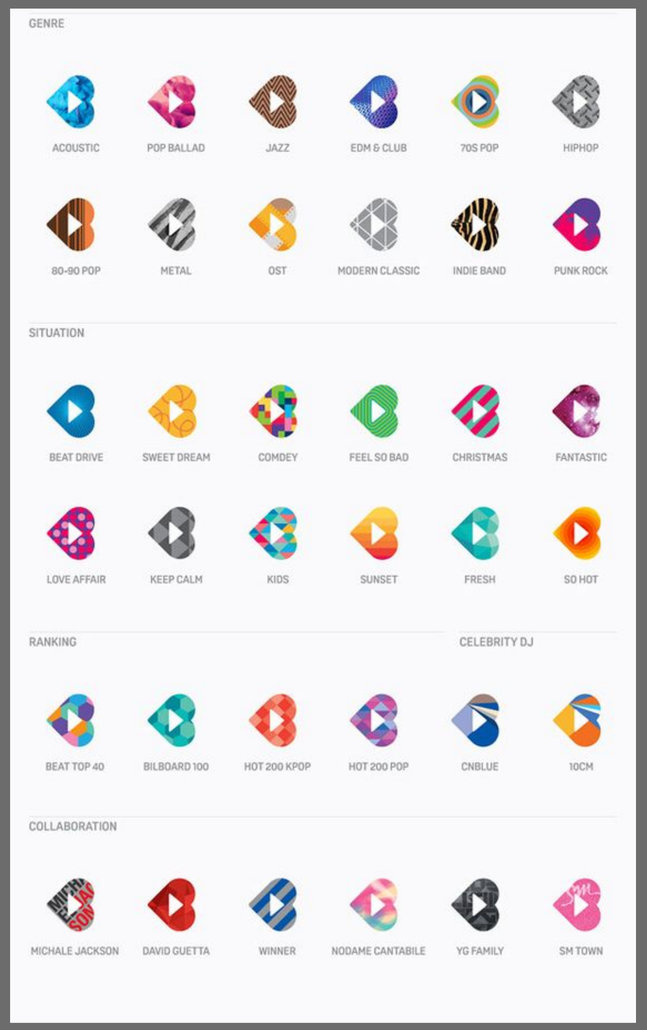


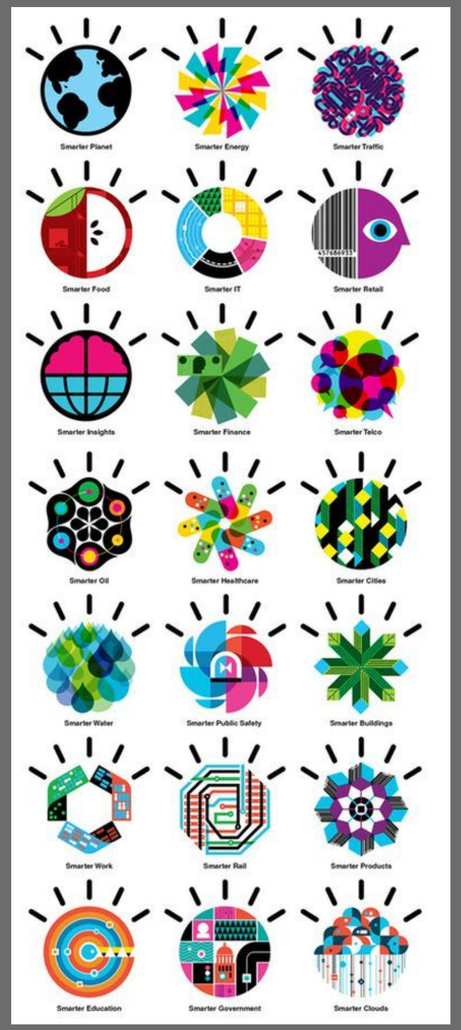
Computational Design in product design

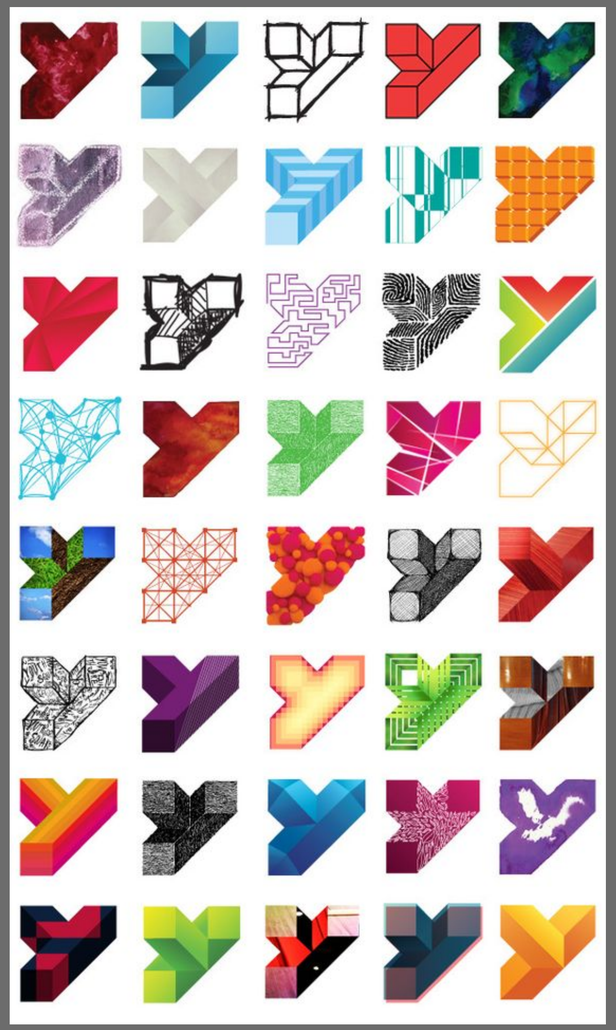
thelivingnewyork.com

Inheritance & Innovation
Intelligence-driven Fashion
2019 International Symposium on Clothing









Computational Design in visual application

Inheritance & Innovation
Intelligence-driven Fashion
2019 International Symposium on Clothing

Computational Design in ID - MIT Media Lab

Inheritance & Innovation
Intelligence-driven Fashion
2019 International Symposium on Clothing

Progressively we will be relaying more and more on technology, because we eventually will have to admit that there are some jobs that is more efficient done by machine.

Do we still need Designer?

Future Designer will work less in design. They will supervise and set parameters for Computational Design

Future Designer skill base:

- Understand computation tech potential

- Actively learn AI

- Understand different Design

- Think critically about technology

- Understand the effect of Computational Design

New Solution, New Problem

Who will own and manage all these new data?

Who owns the copyright to a AI generated Design?

Is this sustainable?

Thank You

Inheritance & Innovation
Intelligence-driven Fashion
2019 International Symposium on Clothing