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# Current trends in design, design education and research

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# Actual trends:

- 1. Design industry** - is related to new theories, technologies, systems and societal needs→narrow specialization; new areas of design→interdisciplinarity
- 2. Design research** - new theories, methods; industry-related and interdisciplinary research
  - academic research (Ming, 2011, Findeli, 1999, 2000, Cross, 1998, 1999, Saikaly, 2004) according to a certain plan or procedure, with a formulated sequence;
  - evaluative research: practice-based research, in which the development of a design project is considered as a kind of research (Esposito, 2020, Kimbell, 2012, Saikaly, 2004);
  - a combination of academic and practical research (Blessing, Chakrabarti, 2009).
- 3. Design education**
  - dominates: study programs in traditional design fields;
  - are being developed: interdisciplinary study programs.

## «**Time to change design education**»

(Future Design Education, 2020, jnd.org, 2018, Norman, 2014)

# DESIGN SCHOOLS

<b>Europe</b> European Design School (EDS)	<b>Bauhaus</b>	Art + crafts → standardization → production (20th c.)
	<b>Design as a strategy</b>	Design as a tool for innovation (21st c.)
	<b>The New European Bauhaus</b> (future direction →)	Crossroads between art, culture, social inclusion, science and technology
<b>ASV</b> American Design School (ADS)	<b>Innovative approaches, transdisciplinarity</b>	Bauhaus + systemic approach (20th c.) Design Thinking; Design methods (20th-21st c.) Multidisciplinarity (21st c.) Design as a tool for innovation (20th -21st c.) Business design (21st c.)
<b>Australia</b> Australian Design School (AuDS)	<b>EDS+ADS+ sustainability + social dimension</b>	Design Thinking Social Design Innovation Design Design philosophy, Design methods
<b>Asia</b>	<b>ADS+AuDS+EDS</b>	Sum or variations of 

# DESIGN:



**is a professional and creative activity including research, planning, development and implementation of tangible and intangible values - objects, processes and systems in a specific environment.**

**The design process is human and environment centered, goal oriented and based on research of conditions, factors and context.**

# Common problems

**How the Design discipline is tackling new global and local challenges by exploring all innovative, unusual, and disruptive approaches, methods, visions, experiments, and ideas?**

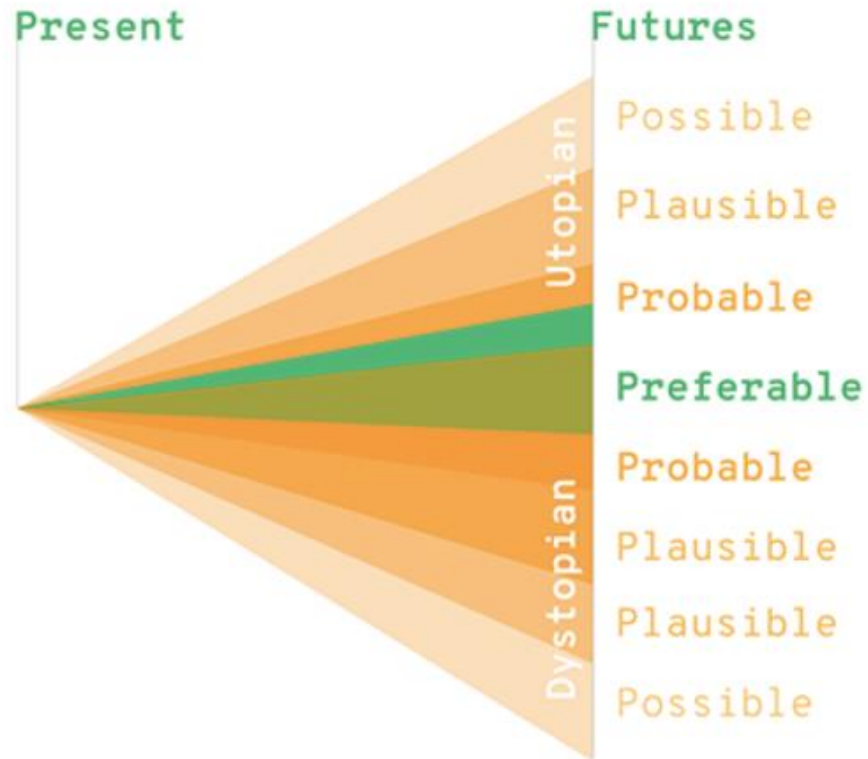
## **1. Technologies in a new economic and service models**

**Role and capabilities of designer / architect / researcher in these systems.**

**Opportunities offered by technologies (virtual, augmented and mixed reality, cloud technologies, artificial intelligence, etc.), as well as in research (data mining, processing, analysis).**

## **2. Cultural, environmental and social issues, development and implementation of future scenarios**

# Critical and Speculative Design



**Critical Design** is oriented towards future scenarios. These kinds of scenarios allow us to imagine things not as they are, but as they might be.

**Critical design** uses **speculative design proposals** to challenge preconceptions, to raise questions and to provoke debate (Raby, 2007, p.94).

Possibility Cone, Speculative Everything



## **Social design:**

the application of design methodologies in order to tackle complex human issues (interrelationships and interaction of individuals, social groups, economic and social processes) placing the social issues as the priority.

# Critical and speculative design Social design

**Estonian Academy of Arts**

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# Estonian Academy of Arts

## Project: **Speculating on the Future of Retirement in 2050**

**Foresight Centre of the Estonian Parliament** has collaborated with the **Estonian Academy of Arts** for the second time for a three weeks-long Speculative Design course. Students from Product Design BA and Interaction Design MA curriculums worked together in teams to speculate on the **future of retirement in 2050.**

<https://medium.com/ixd-ma/speculating-on-the-future-of-retirement-in-2050-a3f1a6e23d21>

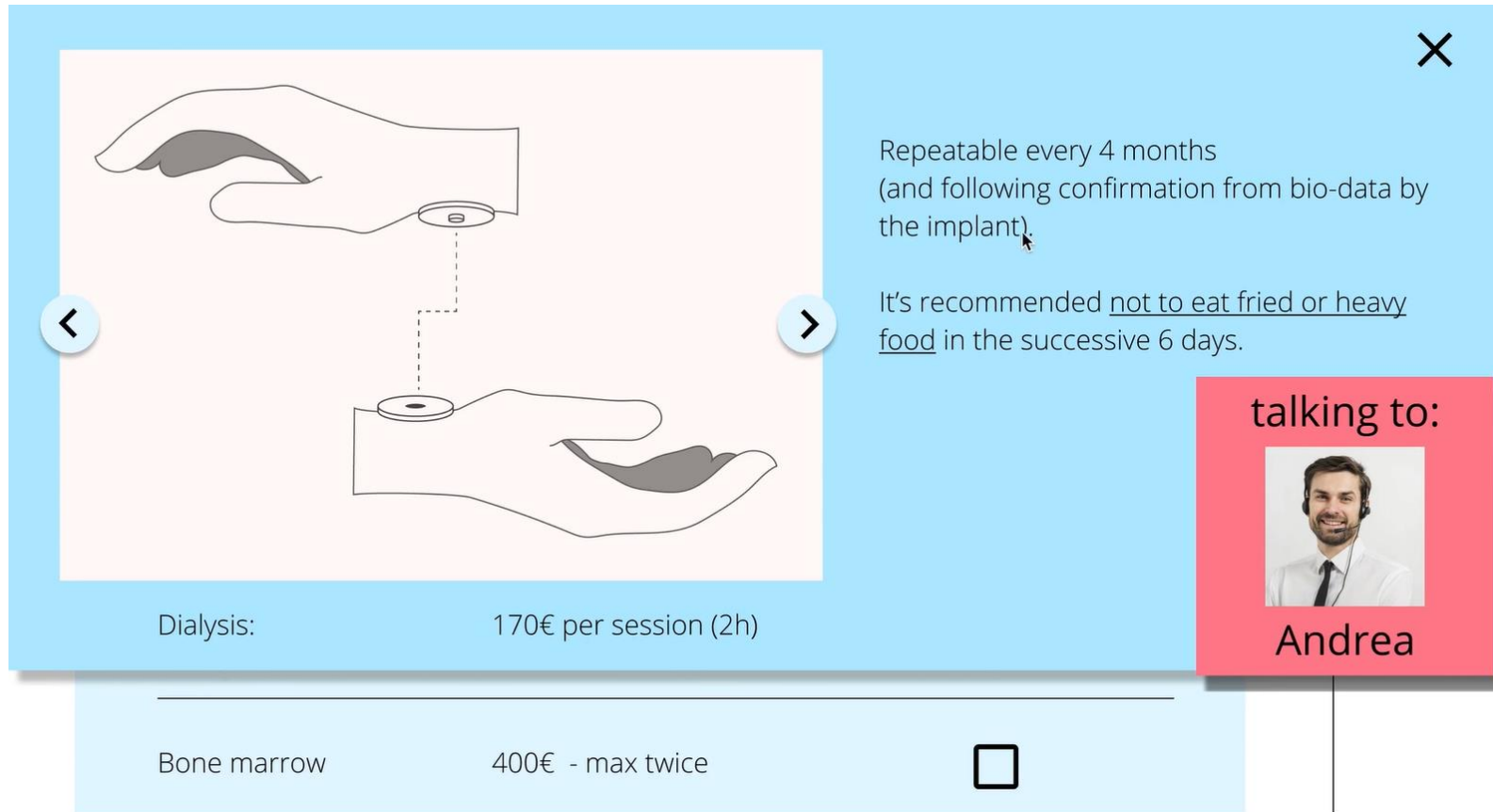
# Design fiction No.1 - My Body

## What if

the Elderly Could Become Medical Suppliers?


## What if

in 2050, the elderly could sell their organ functions  
to feel more connected to the society and to feel useful?



Repeatable every 4 months  
(and following confirmation from bio-data by the implant).

It's recommended not to eat fried or heavy food in the successive 6 days.

talking to:  
  
Andrea

Dialysis: 170€ per session (2h)

Bone marrow 400€ - max twice

**Team 1.** The design fiction is around elderly values in a society of an aging Estonia. Although enabling the elderly into medical suppliers sounds like a dystopia, it is still part of our possible futures.

# Design fiction No.2 - **Diary of Mattias**

## **What if**

the Way We Eat Will Become the Main Reason for Stratification in Society?

## **What if**

in 2050, our food will be indicators of our health and wealth causing a polarization in the society?

DIARY

Viimsi 13.09.2050

The machine, I have been working on, has been successfully produced food for a couple of months now. It is still a hassle sometimes because potato tastes like strawberry, kale like lemon and vice versa, but all over– IT WORKS! I added some nutritional value to the products, so they are like superfoods now, but with the taste and texture we remember from good old days. They are healthy, have a nice texture and good taste. Me, my daughters' families and friends love these products! Although they could provide themselves trendy superfoods as well, which are not as nice to eat.

Because of the new social aid program by the government, I can provide nutritious food for the poor. I am so happy to help people who cannot buy themselves superfoods to stay healthy and full of life. The delivery guy comes once a day and gathers the products and delivers them to people who have signed up. So they could also nourish themselves with good quality food. I am so glad I could be helpful and do good through my passion and be independent in my doings. I have a lot of free time although I still work with constructing assignments. New AI helper technology supports me during my work. I just need to check and help AI from time to time.

The other day something strange happened. I was reviewing automatic order system data from the greenhouse window and an old friend from high-school knocked on the door. "Do you want some meat?" he asked. I was rather surprised because eating meat was banned years ago. My old friend is a survivor of government database collapse and his passport had expired just before it. After database renewal, he was left "unnoticed". So, he cannot leave the country, but also cannot be held accountable by this new governmental system and laws. In his words, there should be approximately 50-70 people in Estonia like my friend. They all live in their own-built huts and hunt endangered forest animal species. Should I provide those off-grid people my eatables as well?

**Team 2** narrated a design fiction scenario in the form of a diary.

**Diary of Mattias** — a smart farmer who wants to create superfood for the poor to decrease the stratification in society.

His business is supported by the government.

He does not get any pension but gets support from the government to deliver his creations to the poor.

# **Technologies in new economic, service and communication models**

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# Key Findings

## Drivers of change:

### 4 technological advances

- high-speed mobile internet;
- **artificial intelligence;**
- widespread adoption of big data analytics;
- cloud technology

World Economic Forum 2018, The Future of Jobs Report

**Professional practice**

**Speculative design**

**Parametric and generative  
design**



# Core77 Design Awards 2019

## Speculative Design Award HyperHuman

IDEO created a near-future fictional environment with five working prototypes of machines that visitors could interact with and experience. These machines explored how humans' purpose would evolve in the future in an ever-changing technologically driven world, how they could communicate with each other in a way that's attuned to personal and cultural nuances, and other questions surrounding beliefs, creativity, and expertise.

<https://designawards.core77.com/speculative-design/86821/HyperHuman>

IDEO



**Parametric** and **generative** designs are considered innovative approaches and the future of design.

### Computer programs

Revit, Grasshopper, Rhino, Finch, Dialux, Blender etc.



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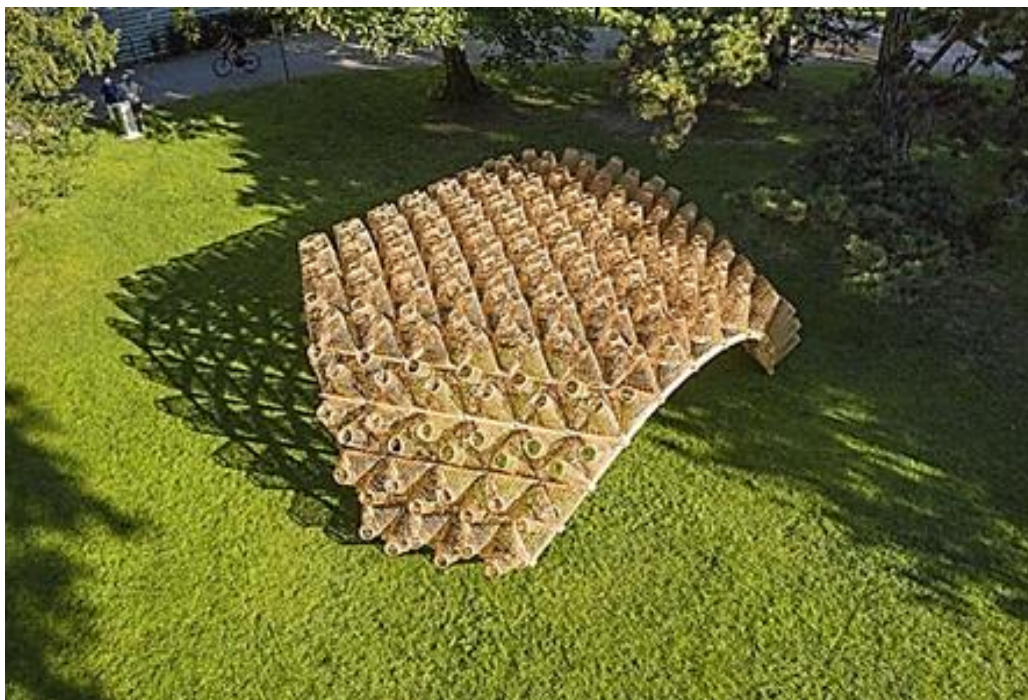
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**Beijing Daxing International Airport**  
Zaha Hadid Architects, 2014-2019

# Parametric architecture



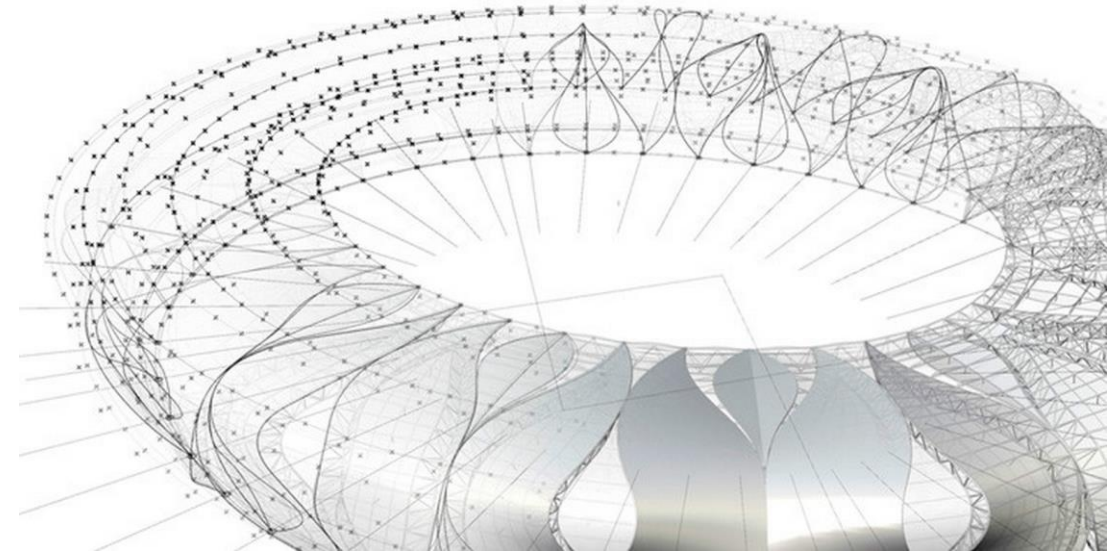
**Wicker Pavilion.** Annecy Paysages landscape architecture festival.  
DJA, architects: D. Jaunzems, & D. Sapega, 2020

# Parametric architecture



**National Open-Air Stage**, Mezaparks, Riga, Latvia.  
Mailitis Architects, 2016. (Photo: Egils Dalmanis)

# Design education



MA study program **Architecture**, University of Liverpool

MSc study program **Bio Digital Architecture**, University of Kent

MA study program **Lighting Design & Technology**, Politecnico di Milano

GE study program **Parametric Design and Optimization**, Stanford School of Engineering

MA study program **Parametric Design in Architecture**, Universitat Politècnica de Catalunya

MA study program **Parametric design with Visual Programming in BIM**, Global institute of Technology

MA study program **Lighting Design & Management**, Wismar University of Applied Sciences

MA study program **Architectural Lighting Design**, KTH Royal Institute of Technology

# Design education

Room 1 / Calculation surfaces (results overview)

No.	Designation	Type	Grid	$E_{av}$ [lx]	$E_{min}$ [lx]	$E_{max}$ [lx]	$u_0$	$E_{min} / E_{max}$
1	Calculation Surface 1	perpendicular	32 x 16	151	35	256	0.229	0.135
2	Calculation Surface 2	perpendicular	16 x 16	68	50	81	0.737	0.621

Type	Quantity	Average [lx]	Min [lx]	Max [lx]	$u_0$	$E_{min} / E_{max}$
perpendicular	2	110	35	256	0.31	0.13

Students of the Bachelor's study program **Interior Design (University of Latvia)** acquire skills and knowledge to work in the computer program **Dialux** - the software for professional lighting design

# Design education



## **Strelka Institute for Media, Architecture and Design**

Program director: **Benjamin H. Bratton**

### **The New Normal –**

an innovative, experimental, and interdisciplinary model of postgraduate education that is both sensitive and responsive to today's geopolitical and historical context.

# Design education

## Strelka Institute The New Normal

**The curriculum is structured as a sequence of intensive modules:**

- critical reasoning and cunning;
- cultural analytics and aesthetics;
- scenario development;
- quantitative analysis and visualization;
- projective modeling and argumentation, among them.



# Project **Tuda Syuda**

## TEAM



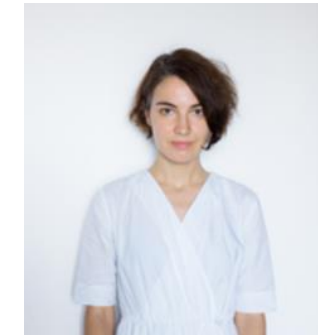
**Paul van Herk**  
architect, teacher, writer  
Australia



**Ivan Puzyrev**  
AR/VR digital strategy expert  
Researcher, Russia

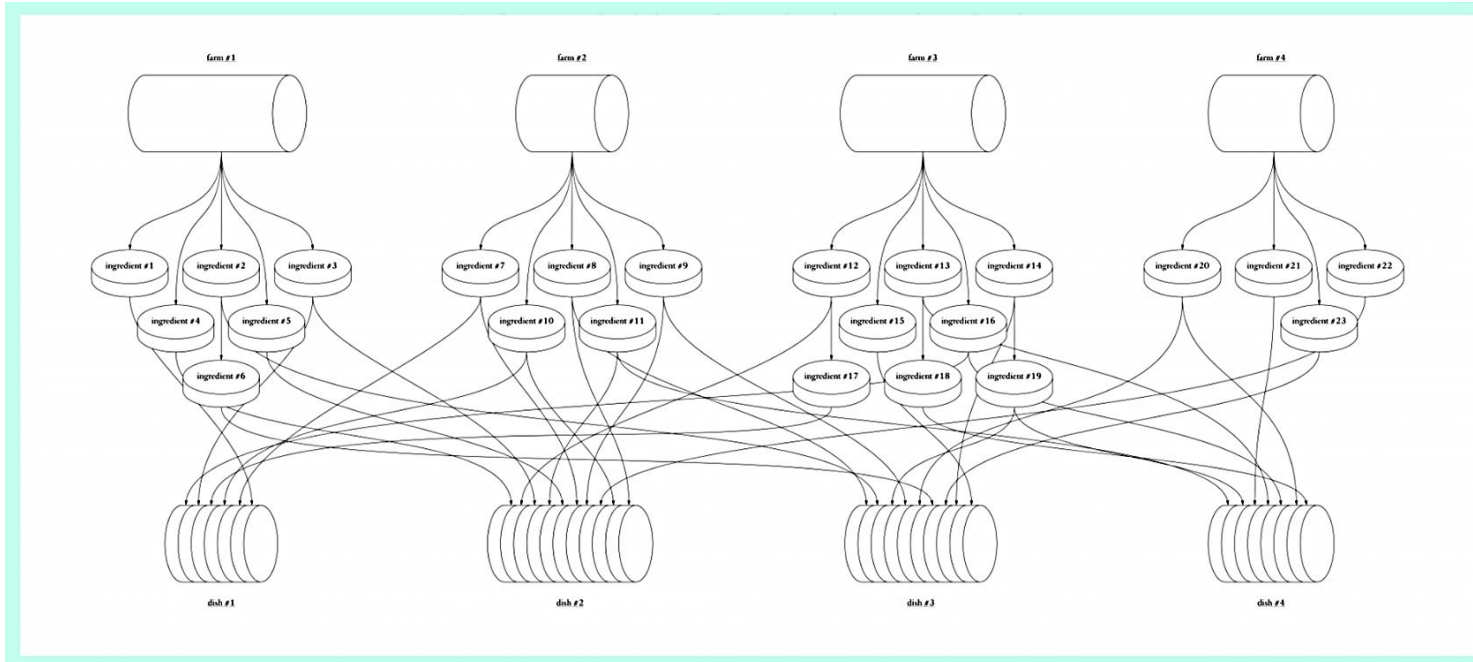
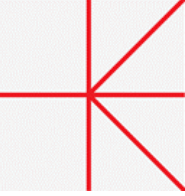


**Thomas Grogan**  
artist, design researcher  
United Kingdom



**Liudmila Savelieva**  
sociologist, photographer,  
researcher  
Russia

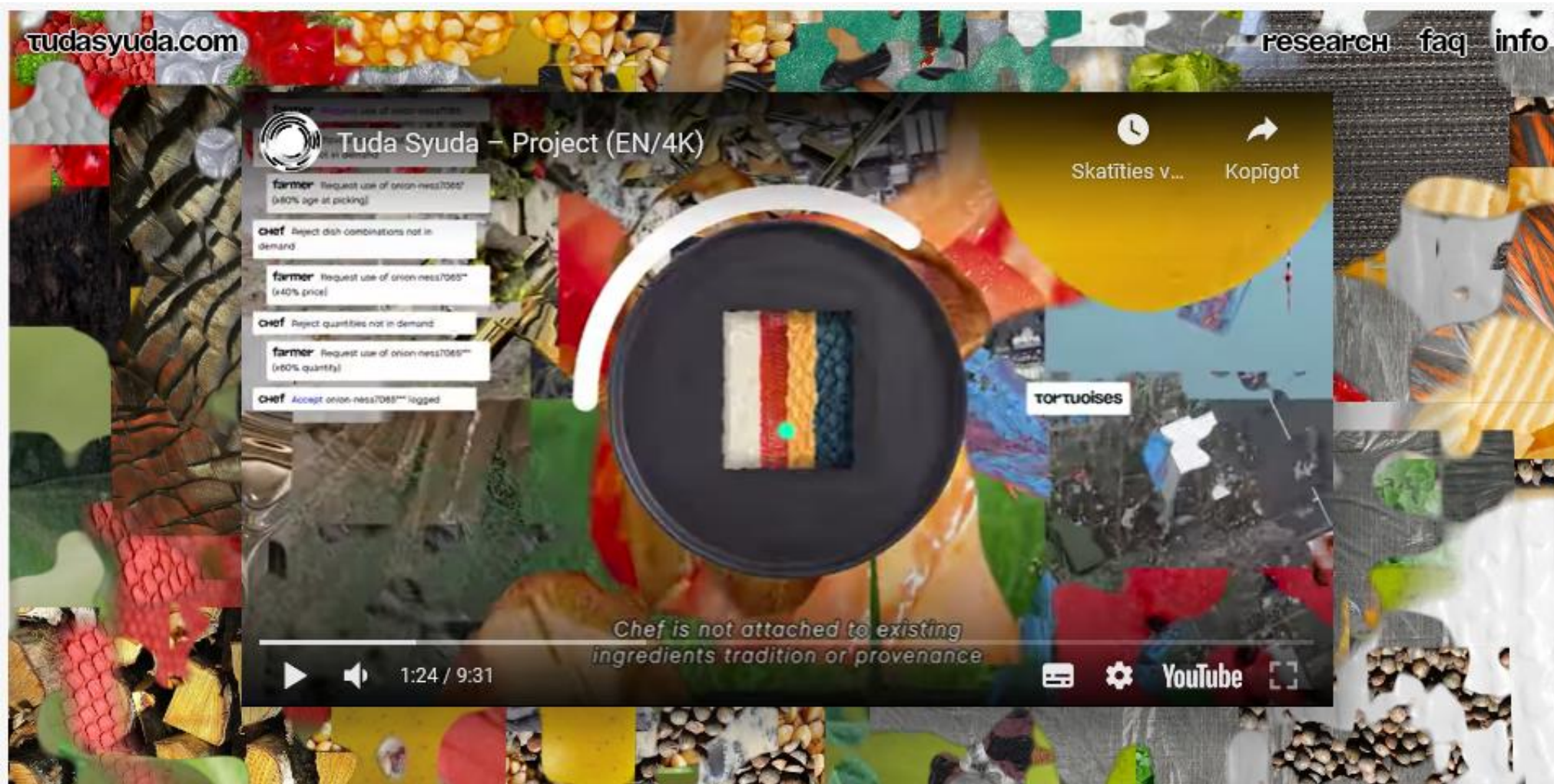
# Tuda Syda



**Tuda Syda is an AI-based platform that concurrently generates new food dishes and landscape-scale interiors.**

Central to the platform are two co-operative AI systems called Chef & Farmer that run a relentless 'negotiation' of request and suggestion.

# Tuda Syuda



Source: <https://tudasyuda.com>

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## **Technologies and new economic, service and communication models**

**Will AI and robots replace creatives –  
designers and architects?**

# Key Findings

**«...by 2025, 85 million jobs may be displaced by a shift in the division of labor between humans and machines, while 97 million new roles may emerge that are more adapted to the new division of labor between humans, machines, and algorithms»<sup>1</sup>**

**«Automation, in tandem with the COVID-19 recession, is creating a 'double-disruption' scenario for workers»<sup>2</sup>**

1. World Economic Forum 2018      2. World Economic Forum, 2020

# Algorithm designs seven million different jars of Nutella



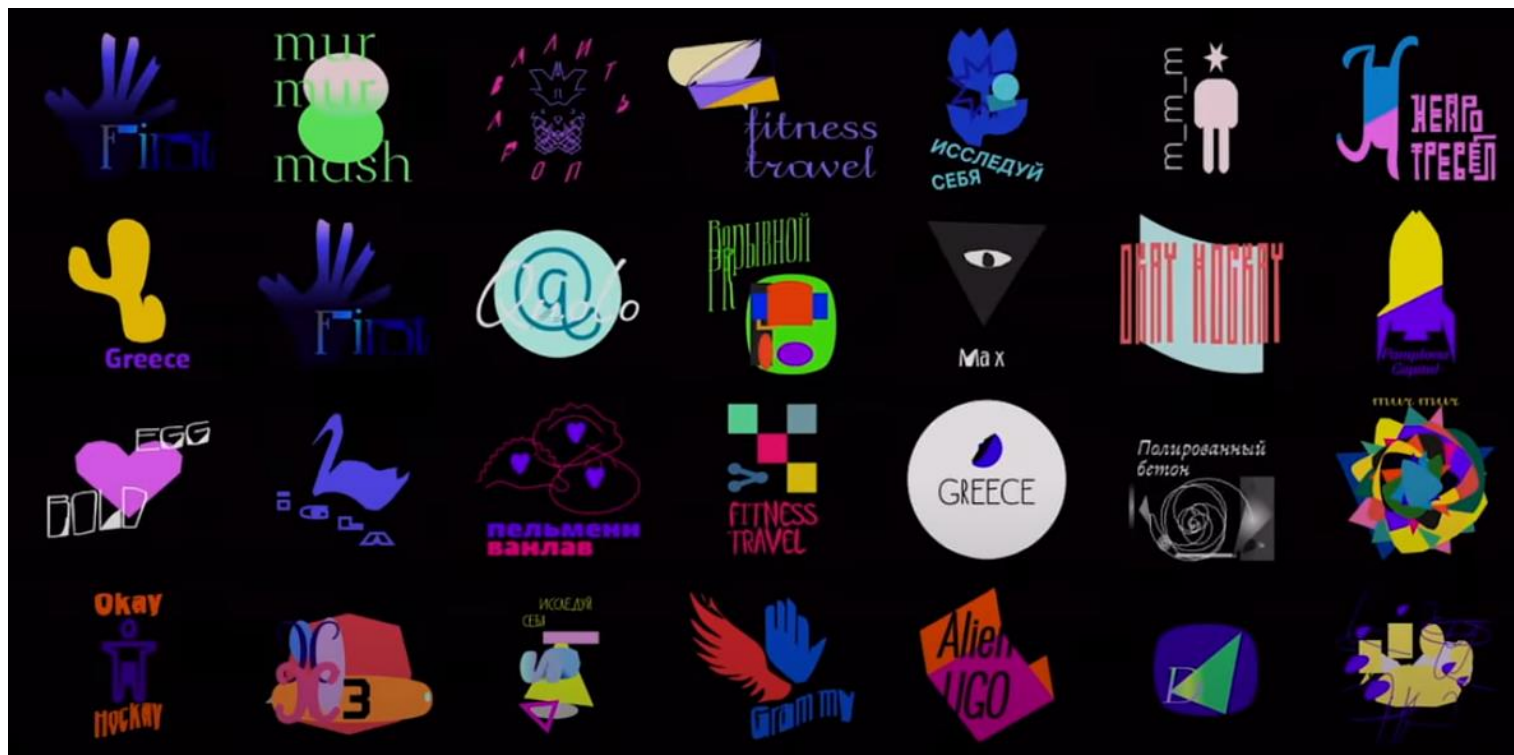
# AI-based graphic and interior design platforms that are available to everyone:

## Parametric design:

Planner 5D ; logo design sites: Designs.ai, Tailor Brands Studio, Design Iconic and Brand Crowd etc.

## Generative LOGO design:

[Art Lebedev studio – AI designer Nikolay Ironov](#)



<https://www.youtube.com/watch?v=4-CjzYVld9U&t=193s>

## Conclusions

1. **AI will not completely replace human designers, because only the designer can define what is meaningful and important, determine when to continue the process and when to stop, approve or reject the solution.**
2. **The possibilities offered by technology allow optimizing the work process of designers, save time and costs (Verganti et al., 2020; Reddy, 2020; Schumacher, 2020; AI and the Future of Design..., 2017, Ervin, 2019; Philips, n.d.; Tailor Brands, 2019; Andersen, 2019.)**
3. **The use of AI in the provision of design services change a business model: the product development does not require a human designers and managers: generation of design samples, cooperation with customers and selling take place simultaneously.**
4. **The new work model defines new work tasks for designers determining the need for new competencies to design the problem-solving loops that will develop the design solutions (Verganti et al., 2020).**
5. **If previously managers were taught to think and act as designers, now designers will have to plan and manage processes as curators, innovation managers, or art directors. It brings design closer to management sciences.**
6. **The demand for designers with traditional design education will likely decrease in the future.**  
**This makes it necessary to consider changes in the design education content.**





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# Thank you!

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