

STUDY AT FFA, ACTIVITIES AT IMID

Jan Vitek, Ing.

Institute of Machine and Industrial Design
Faculty of Mechanical Engineering
Brno University of Technology

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INSTITUTE OF MACHINE
AND INDUSTRIAL DESIGN

CONTENT

INTRODUCTION

STUDY AT FFA

- Study at FFA
- PhD thesis

ACTIVITIES AT IMID

- Lectures
- Strojlab
- DiSTT
- Registry of Artistic Outputs (RUV)
- Other activities

INTRODUCTION

PHD STUDENT

Faculty: Faculty of Fine Arts

Programme: Research in Art and Design

Year of study: 4

2022 - present

ASSISTANT - DID, IMID

2022 - present



STUDY AT FFA

ENTRANCE EXAMS

- dissertation project concept
- Portfolio
- personal resume
- Interview (english)

STUDY PLAN

- block lectures - 1st + 2nd year
- doctoral colloquium
- teaching practice – 26 h/semester
- foreign internship
- state doctoral exam – 3rd year



PHD THESIS

The impact of manufacturing technologies on automotive design



**Digital Ceramics:
Generative Strategies in
the Context Additive
Manufacturing**

- **Original topic:** purely theoretical, with no direct link to the author's practice
- **New topic:** aligned with the author's long-term focus in both teaching and professional practice.
- Results applicable both at FFA and IMID.
- The topic is linked to teaching activities and projects. (DiSTT), practical outputs (RUV)



PHD THESIS

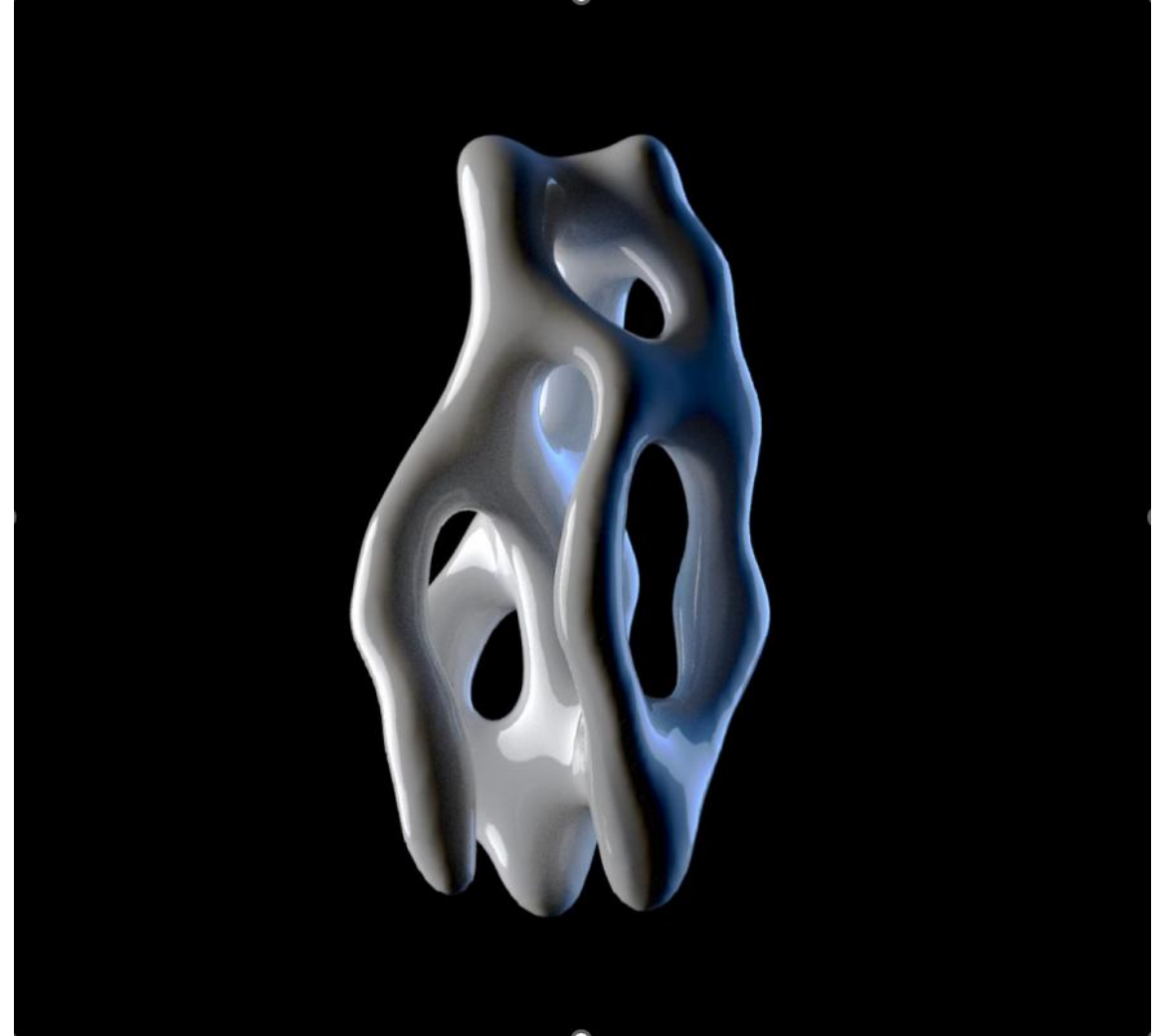
Algorithmic design in design and artistic practice, illustrated through the context of ceramic 3D printing

- Parametric strategies often shape the author's creative thinking – leading to predictable outcomes and visual repetitiveness
- Repeated use of the most intuitively accessible methods
- The result is aesthetic unification and a limited formal repertoire in a field that could otherwise be experimental



PHD THESIS

- The research examines how the very choice of design strategy influences creative decision-making
- “Reverse engineering” of commonly used parametric strategies and their systematization
- Alternative generative approaches based on modified growth algorithms inspired by natural processes
- An iterative “author–script” process, in which the script acts as a generator of stimuli that the author evaluates based on aesthetic judgment and subsequently modifies



PHD THESIS

- A series of 3D-printed objects made from ceramic clay
- The aim is not to imitate specific forms, but to work with the growth principles on which natural forms are based
- These principles are translated into a computational script and further modified
- The result is a series of objects that share a common visual logic







PHD THESIS

TECHNICAL ASPECTS

- Designed a material tank and screw extruder for ceramic clay
- Installed on a TriLAB DeltiQ printer (originally a Prusa i3 MK1)
- Used in teaching (YRP) and in DiSTT project workshops (FAB 25), among others



LECTURES

YRP - Generative Design and Digital Production

YDE - Design of Machines and Instruments

YAM - Advanced Materials in Design

ZPC - How to Make (Almost) Anything

YE3 - Design Project Realization

LECTURES

YRP - Generative Design and Digital Production

- Parametric design with a focus on applications in product and industrial design
- Includes a practical workshop – linking parametric design with digital fabrication (strojLAB)



LECTURES

YDE - Design of Machines and Instruments



LECTURES

YAM - Advanced Materials In Design

- Lectures – fundamental manufacturing technologies and materials used in industry – study materials for the final state examination
- Studio – product design using production waste materials (hands-on)
- Company visits / industrial excursions



LECTURES

ZPC - How to Make (Almost) Anything

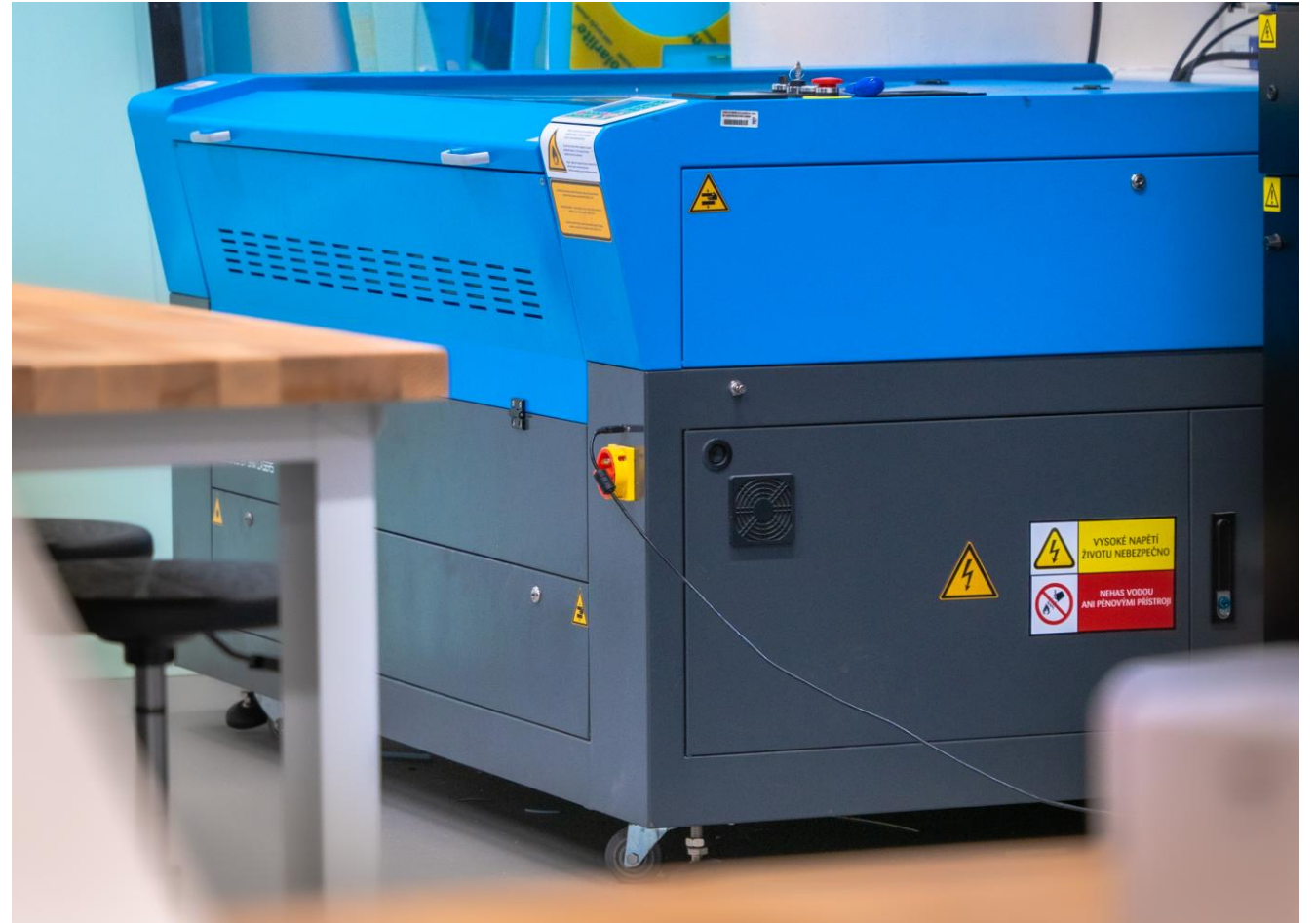
- Lectures and assignments focused on cutting with a vinyl plotter and a laser cutter
- Supervision of four projects



STROJLAB

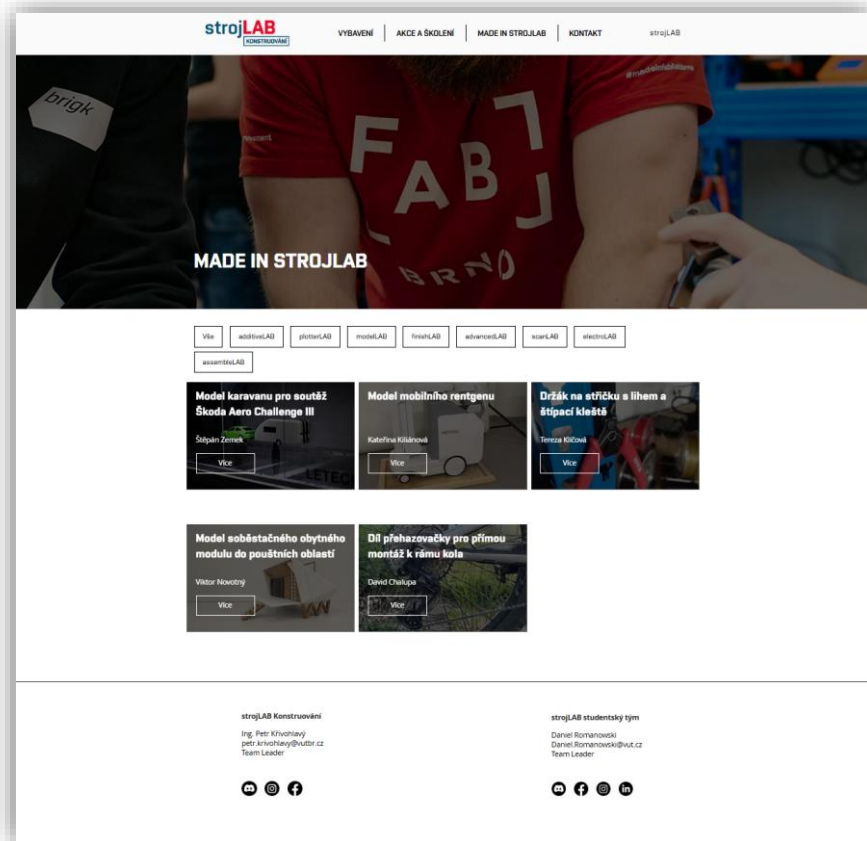
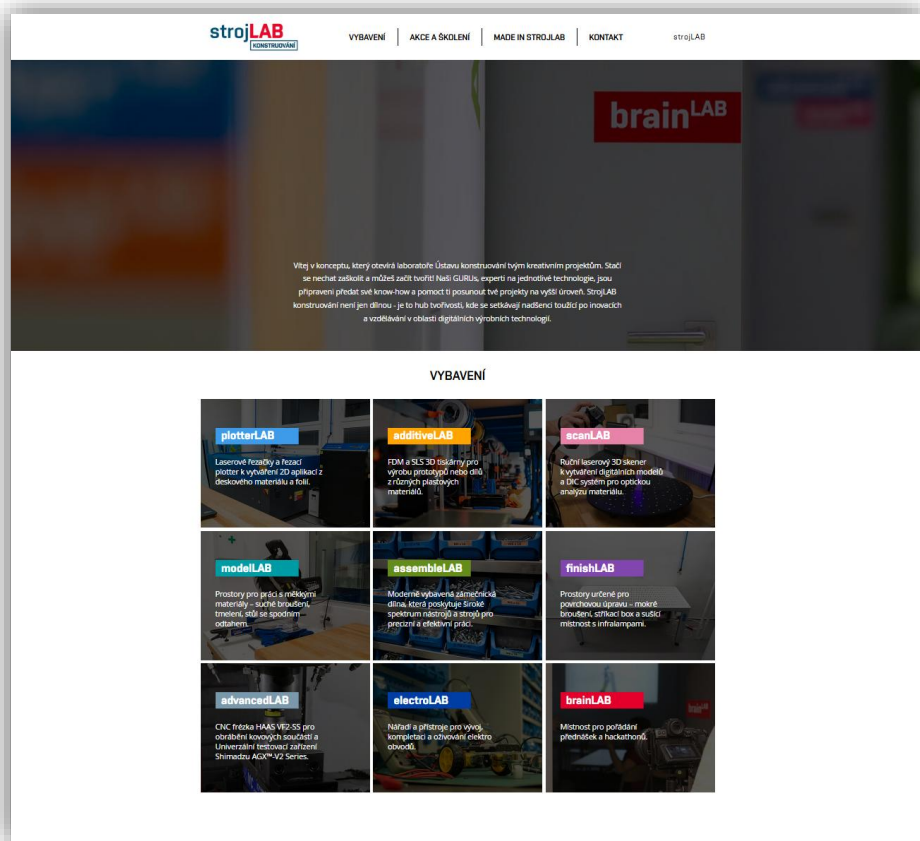
PLOTTER LAB

- Training on laser cutters
- Training on the vinyl plotter
- Machine maintenance
- Development of teaching materials



STROJLAB

DEVELOPMENT AND MANAGEMENT OF THE STROJLAB.CZ WEBSITE



STROJLAB

GRAPHIC AND PROMOTIONAL MATERIALS



VÁNOČNÍ WORKSHOP VE strojLABu

9. 12. 2025, 13:00 - 17:00, A3/110, FSI VUT

Vánoce se blíží! Přijď si do strojLABu vyrobit ozdoby na stromek, s využitím 3D tisku a laserového řezání.

interreg CENTRAL EUROPE Co-funded by the European Union

DISTT



Marek Loskot

OD PAPÍRKU NA STOLE K 200 000 PRODANÝM KUSŮM

Designová cesta deskové hry Project L.

26. 11. 2025, 18:00, posluchárna P4

interreg CENTRAL EUROPE Co-funded by the European Union

strojTALK



interreg CENTRAL EUROPE Co-funded by the European Union

STROJLAB CHALLENGE 2026

DISTT

Maker Hackathon

Baví tě tvořit, zajímáš se o technologie a nebojíš se výzev? Přihlas se se dvěma spolužáky do jednodenní soutěže, kde navrhnete a vyrobíte funkční prototyp podle zadání, které se dozvíte až na místě.

Čeká vás práce s 3D tiskem, laserem a dalšími nástroji v našem labu. Hodí se základy CADu, ale expert být nemusíš — s návrhem i výrobou vám pomůžou zkušení mentoři.

Soutěž je pro středoškoláky, kteří rádi tvoří a chtějí se něco naučit.

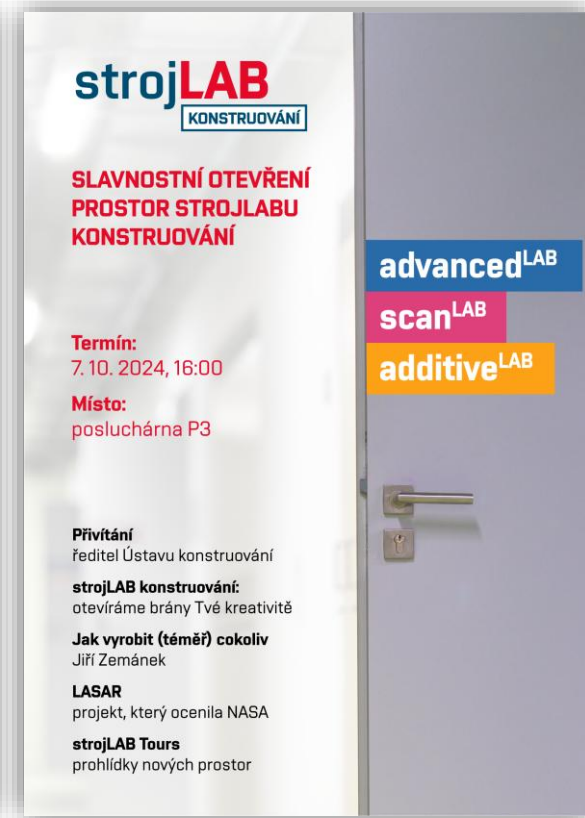
14. 1. 2026, strojLAB, FSI VUT v Brně

- Celodenní kurz
- Akce probíhá pod záštitou rektora VUT a děkana FSI VUT
- Registrace do 15. 12. 2025

Přihlašovací formulář



PRUSA RESEARCH



strojLAB
KONSTRUOVÁNÍ

SLAVNOSTNÍ OTEVŘENÍ PROSTOR STROJLABU KONSTRUOVÁNÍ

Termín:
7. 10. 2024, 16:00

Místo:
posluchárna P3

Přivítání
ředitel Ústavu konstruování

strojLAB konstruování:
otevíráme brány Tvé kreativitě

Jak vyrobit (téměř) cokoliv
Jiří Zemánek

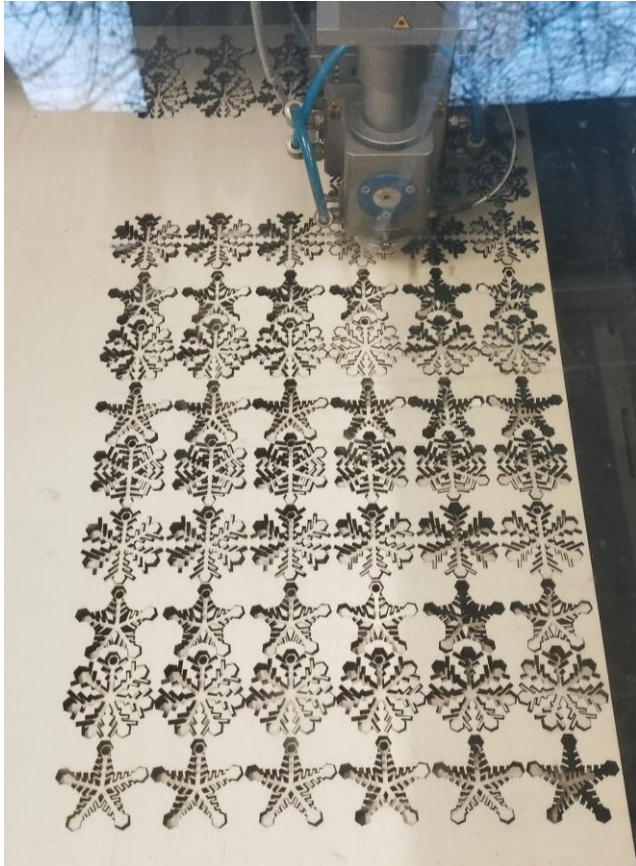
LASAR
projekt, který ocenila NASA

strojLAB Tours
prohlídky nových prostor

advanced^{LAB}
scan^{LAB}
additive^{LAB}

STROJLAB

OTHER EVENTS - Christmas workshop, Strojlab Challenge, ...



DISTT PROJECT

PILOT RUNS - WORKSHOPS

- Parametric design
- Laser cutting
- Ceramic 3D printing

GRAPHIC MATERIALS

- Posters, rollu-ps and flyers
- Materials for social media

Interreg CENTRAL EUROPE Co-funded by the European Union

DiSTT is how we do it.

DISTT

DISTT = Digital Skills Transformation Toolkit for a Resilient Labour Market
= 6 partners from 5 Central European countries
= 6 pilot actions

The World Economic Forum Identified skills gaps in local labour markets as a main barrier to the adoption of new technologies in manufacturing

Problem Statement

- **Mismatch between Education and Labour Market Needs:** Traditional education systems have been slow to adapt to the skills required by the digital and entrepreneurial economy of the 21st century.
- **Digital Disruption:** Increasing digitization is displacing traditional jobs and requires a new skillset that combines technical know-how with creativity and entrepreneurial thinking.
- **Limited Access to Skills Development:** The inequality in employability widens further as many people, especially outside formal higher education, lack opportunities to gain these new skills.
- **Inadequate Entrepreneurship Education:** Even when entrepreneurship is taught, it often lacks practical, hands-on, and interdisciplinary contexts that foster real-world skills.

Opportunity

- **FabLabs and Makerspaces as Learning Ecosystems:** They naturally blend digital fabrication (like 3D printing and CNC machining) with problem-solving, creativity, collaboration, and innovation.
- **Multidisciplinary Learning:** These spaces bring together people from different backgrounds (e.g., engineering and business), promoting peer learning and real-world application of skills.
- **Early-Stage Entrepreneurship Support:** They serve as low-barrier environments where users can turn ideas into prototypes, and potentially into startups.
- **Social and Economic Inclusion:** By offering free or low-cost access to tools and mentoring, FabLabs can democratize access to future-relevant skills, especially in underserved areas.

Logos: Interreg, AB, HAPPYLAB, NOI, M2, etc.

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Pilot Actions

DISTT

<p>strojLAB Brno University of Technology University students</p> <p>Goal: Modernize university curricula, implement practical, project-based learning with collaboration between universities and companies.</p> <p>Region: South Moravia Region, Czech Republic</p>	<p>FabLab Brno Students</p> <p>Goal: Deliver hands-on workshops in FabLabs to equip students with digital production and prototyping skills.</p> <p>Region: South Moravia Region, Czech Republic</p>
<p>HappyLab Wien Craftsmen</p> <p>Goal: Deliver hands-on workshops in FabLabs to equip craftsmen with digital production and prototyping skills.</p> <p>Region: Lower Austria and Vienna, Austria</p>	<p>brigh SMEs</p> <p>Goal: Pilot training modules in SMEs to support adaptation to Industry 4.0. Foster innovation and digital tool adoption.</p> <p>Region: Upper Bavaria, Germany</p>
<p>NOI Techpark</p> <p>People (employees, unemployed, trainees, artisans...) interested in reskilling or upskilling to be able to work better within companies & SMEs.</p> <p>Goal: To offer modular workshops aimed at supporting the reskilling or digital fabrication skills – such as CAD, IoT, CNC, and 3D printing – through hands-on, project-based learning experiences.</p> <p>Region: South Tyrol, Italy</p>	<p>FabLab Zagreb Less privileged citizens in rural areas</p> <p>Goal: Run training for digital fabrication in FabLabs targeting rural citizens to improve employability and social inclusion.</p> <p>Region: Central Croatia and Zagreb Region, Croatia</p>

Logos: Interreg, AB, HAPPYLAB, NOI, M2, etc.

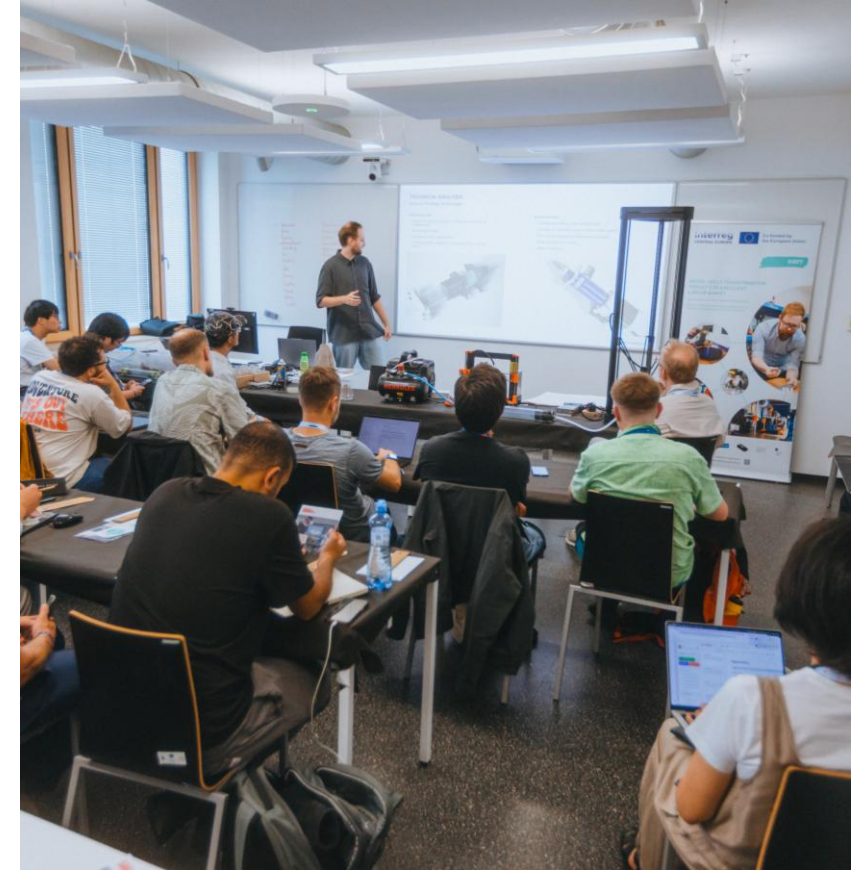
DISTT PROJECT

FAB 25 – CLAY 3D PRINTING WORKSHOP



DISTT PROJECT

FAB 25 – CLAY 3D PRINTING WORKSHOP



DISTT PROJECT

WORKSHOP - PARAMETRIC SEATING ELEMENTS



PROJEKT DISTT

WORKSHOP - PARAMETRIC SEATING ELEMENTS



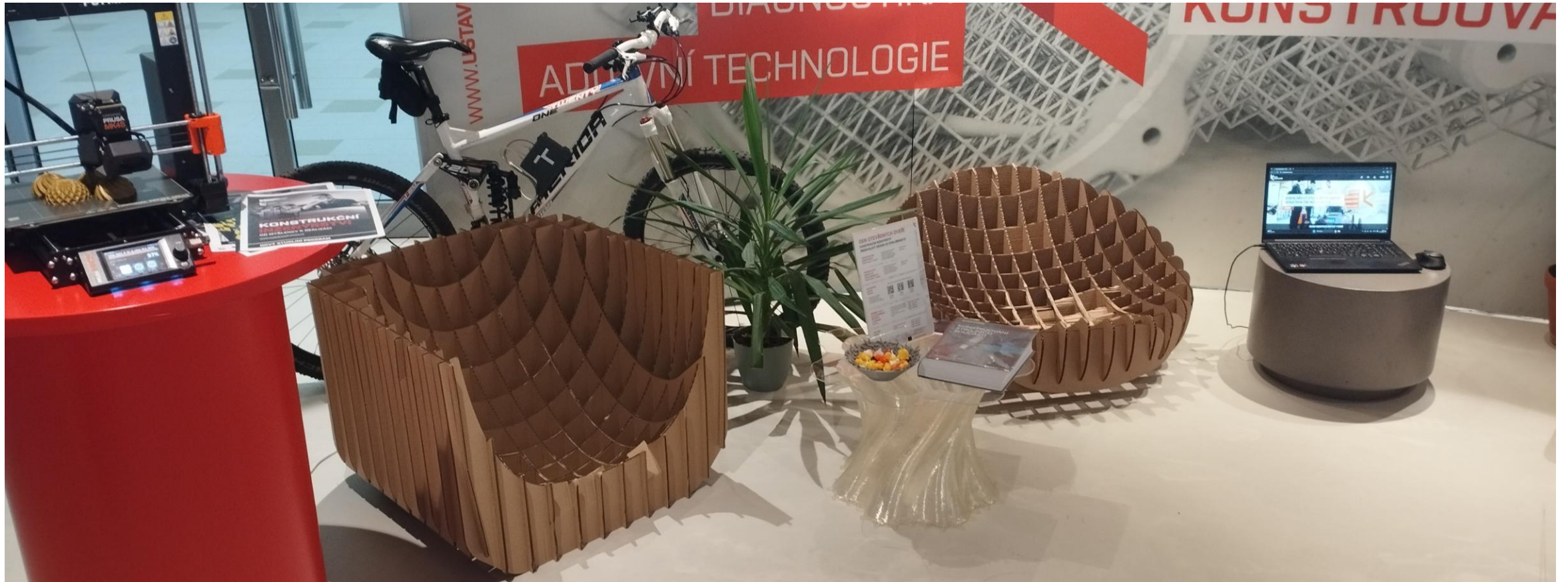
PROJEKT DISTT

WORKSHOP - PARAMETRIC SEATING ELEMENTS



PROJEKT DISTT

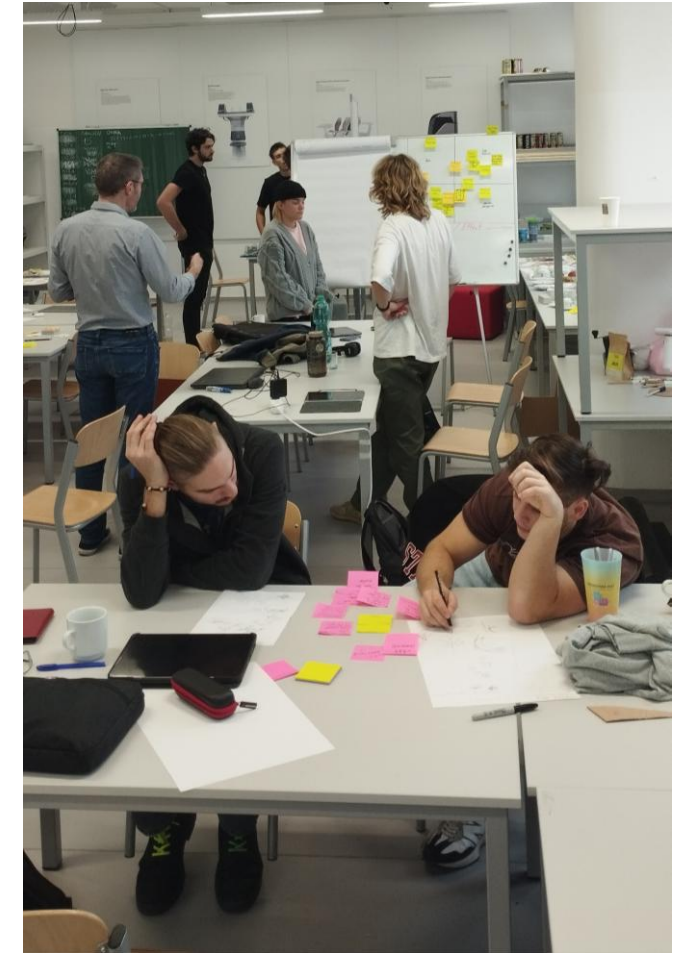
WORKSHOP - PARAMETRIC SEATING ELEMENTS



OTHER ACTIVITIES

HONEYWELL WORKSHOP

- Design thinking workshop
- Two workshops – winter and summer semester
- Topic: automated warehouse systems
- Excursion to Honeywell



DALŠÍ AKTIVITY

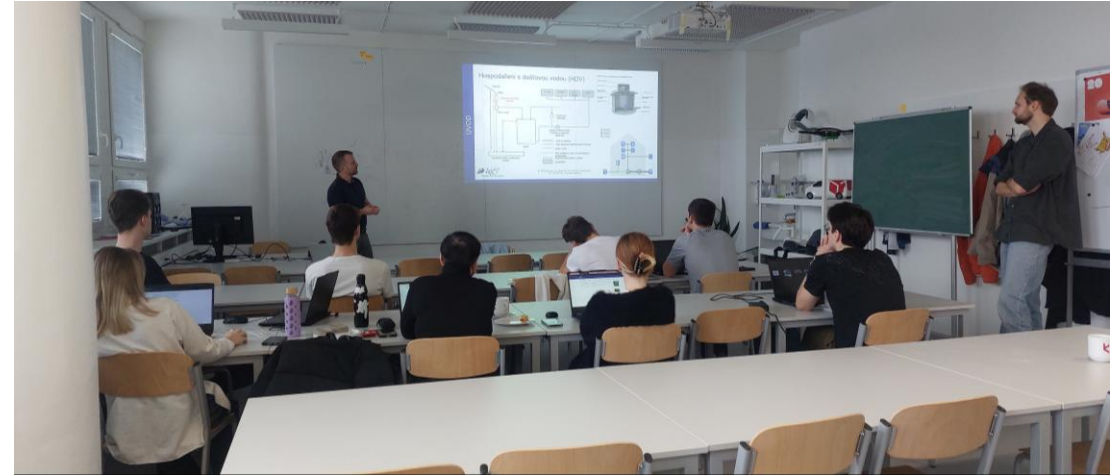
HONEYWELL WORKSHOP



OTHER ACTIVITIES

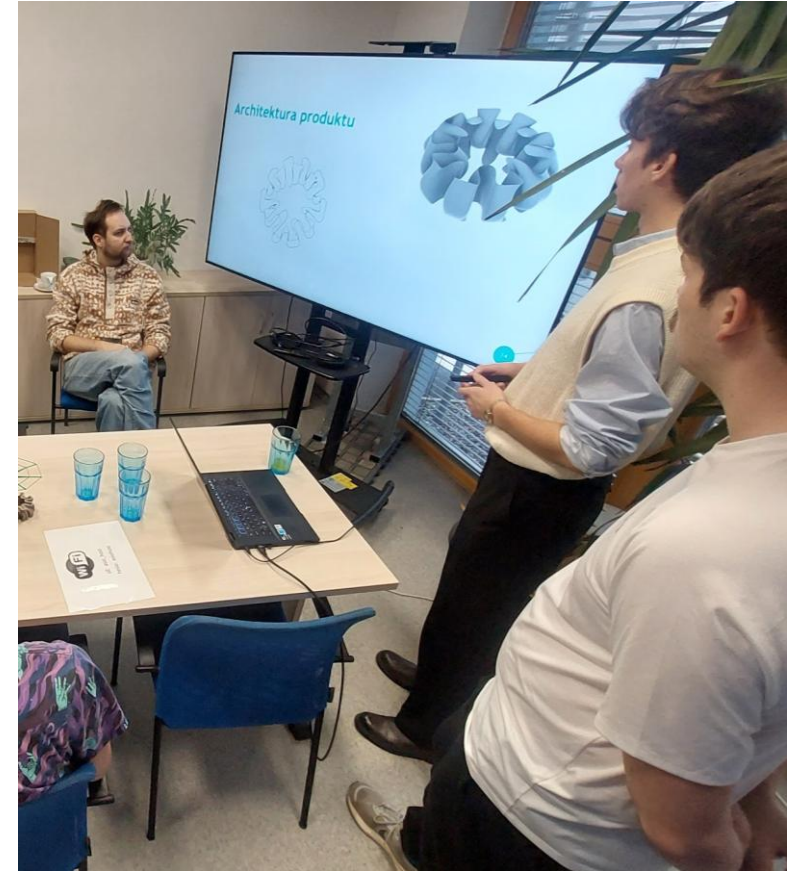
WORKSHOP WITH ASIO

- Design thinking workshop
- Blue–green infrastructure – objects for large-scale 3D printing in concrete or clay
- Greater emphasis on prototyping (ceramic 3D printing)



OTHER ACTIVITIES

WORKSHOP WITH ASIO



REGISTRY OF ARTISTIC OUTPUTS

Id	Kód	Segment	Druh činnosti	Závažnost	Velikost	Název díla
89426	CKZ	DES/Grafický design	<u>Realizovaný design</u>	C	K	Deserting
89433	BKY	DES/Produktový a průmyslový design	<u>Realizovaný design</u>	B	K	Design ovladače k elektrickému longboardu
89414	BKX	DES/Produktový a průmyslový design	<u>Realizovaný design</u>	B	K	Kola pro elektrickou mobilitu
76855	CMZ	DES/Grafický design	<u>Realizovaný design</u>	C	M	Etiketa pro Nový sklep pod Starým vrchem
72649	CMZ	DES/Grafický design	<u>Realizovaný design</u>	C	M	Logo Kavárny na kině
72731	BLY	DES/Produktový a průmyslový design	<u>Vystavený design</u>	B	L	Elektrický motocykl do městského prostředí
100833	BLZ	DES/Produktový a průmyslový design	<u>Vystavený design</u>	B	L	Kreativní Technika
72645	CLZ	DES/Produktový a průmyslový design	<u>Vystavený design</u>	C	L	Deserting
59311	CLY	DES/Produktový a průmyslový design	<u>Vystavený design</u>	C	L	Odpočinková židle Armadillo
72647	BLY	DES/Sklo, porcelán, keramika	<u>Realizovaný design</u>	B	L	Šálek Bostrico Algoritmico

Y NCSD - Národní cena za studentský design

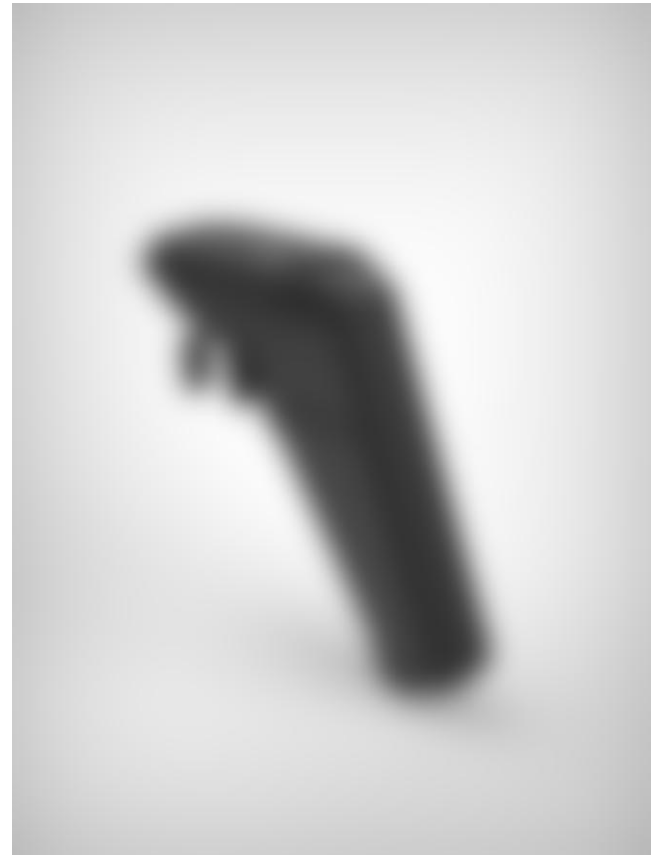
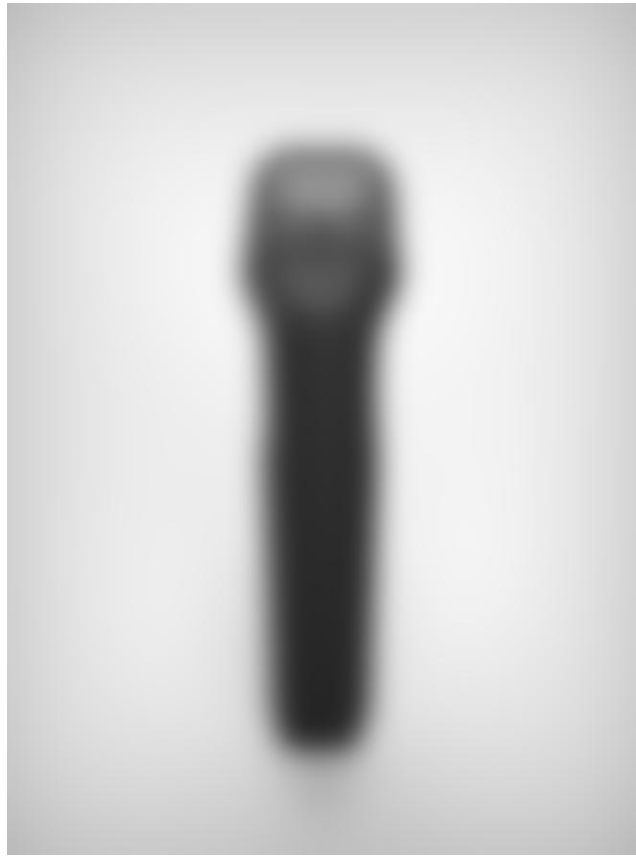
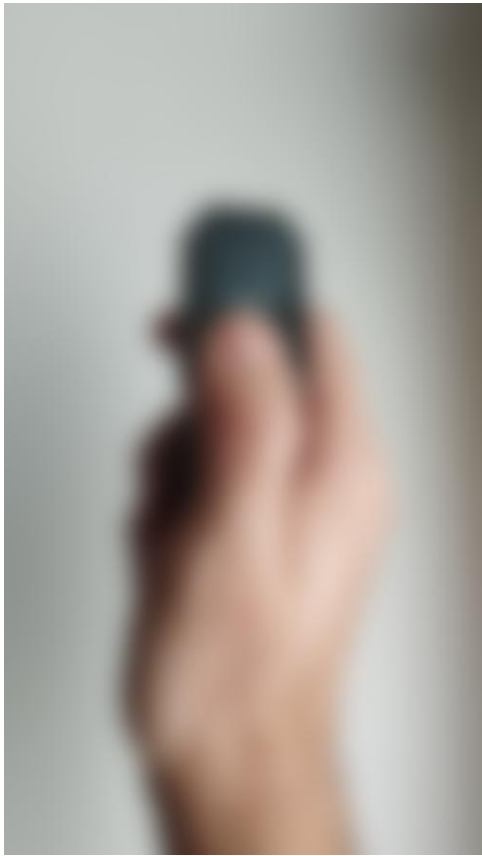
Česká republika, Praha

06.12.2023

Upřesnění: Dobrý studentský design

OTHER ACTIVITIES

JETSURF - design, prototyping and development

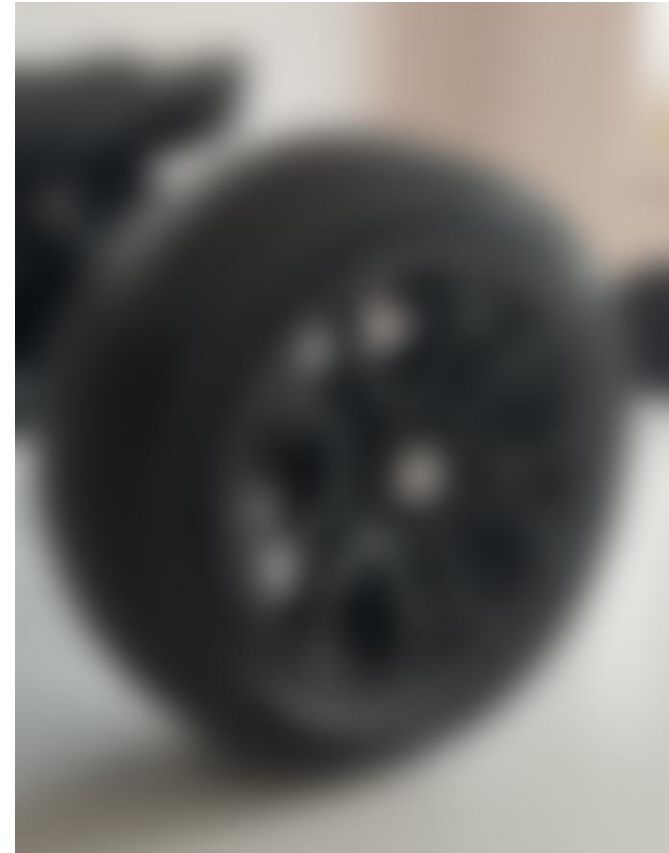
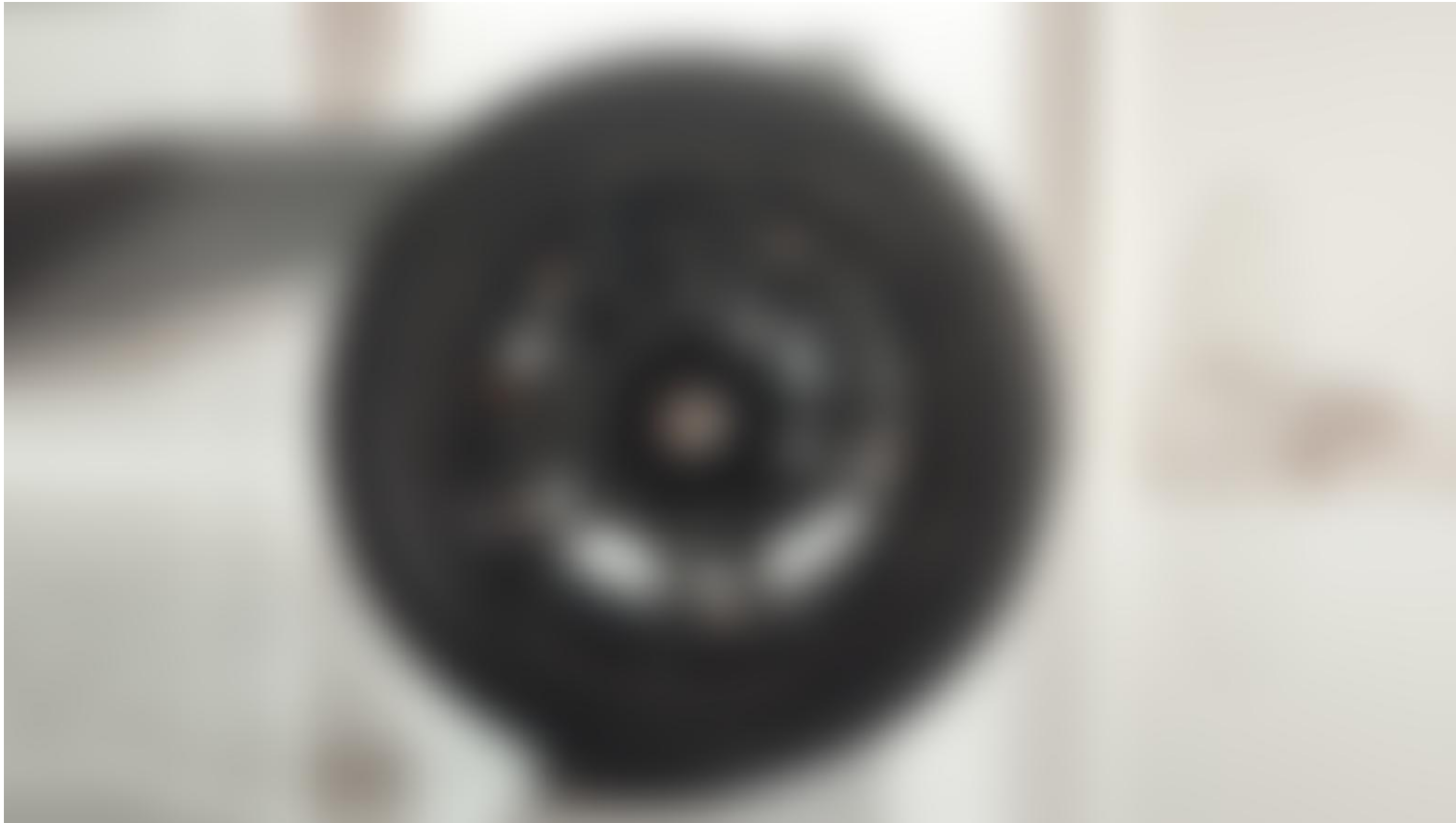


STUDY AT FFA, ACTIVITIES AT IMID

33/40

OTHER ACTIVITIES

JETSURF - design, prototyping and development



OTHER ACTIVITIES

JETSURF - design, prototyping and development



OTHER ACTIVITIES

JETSURF - design, prototyping and development

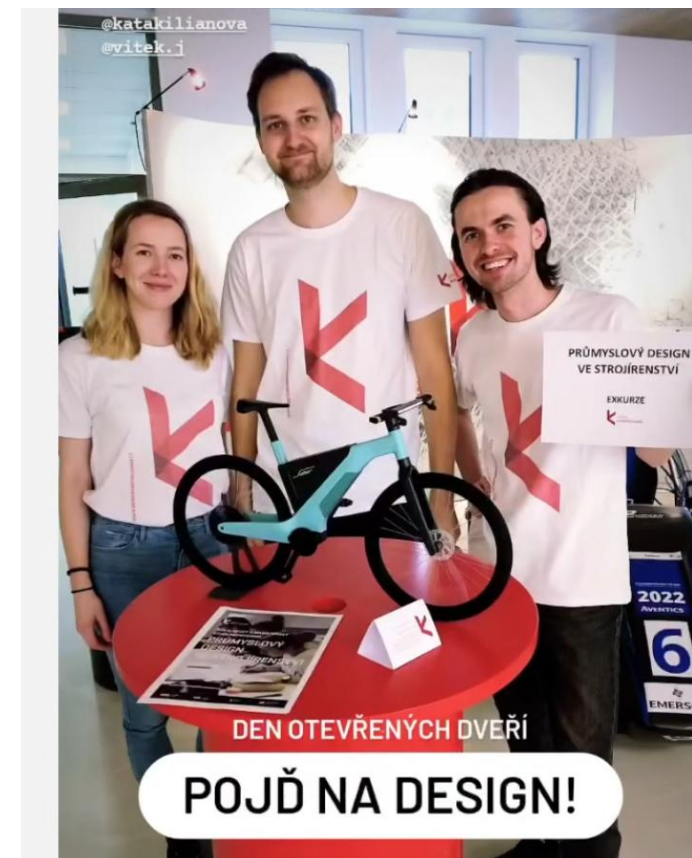


OTHER ACTIVITIES

OPEN DAYS

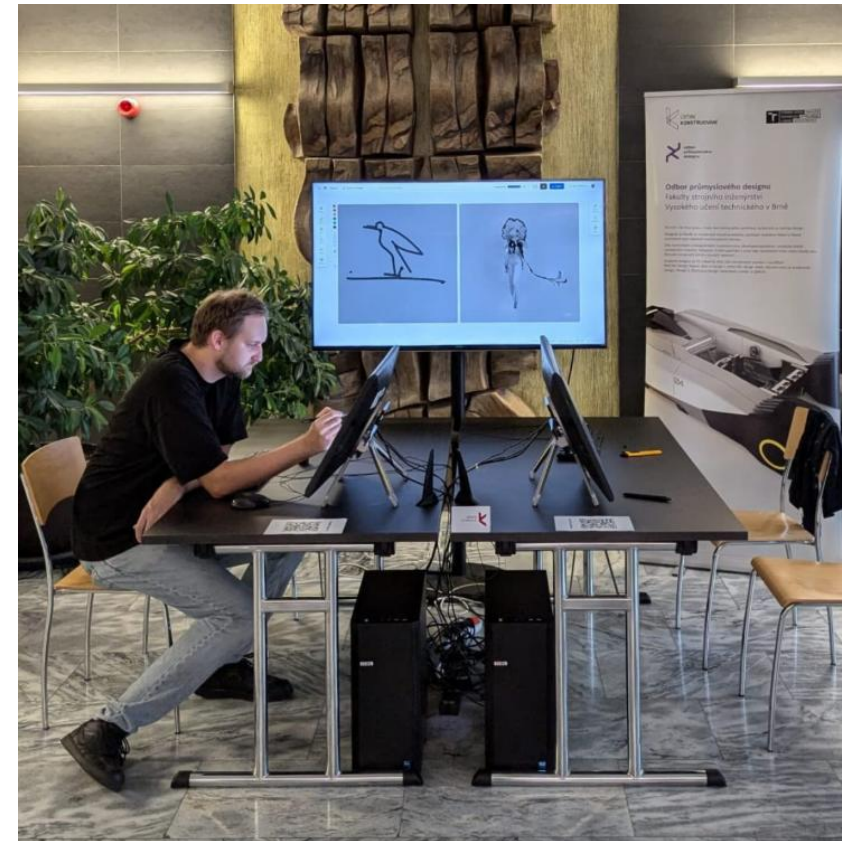


STUDY AT FFA, ACTIVITIES AT IMID



OTHER ACTIVITIES

RESEARCHERS' NIGHT



OTHER ACTIVITIES

GRAPHIC DESIGN OF THE EXHIBITION ID 19–25



STUDY AT FFA, ACTIVITIES AT IMID

40/40

THANK YOU FOR YOUR ATTENTION

Jan Vitek, Ing.

Jan.Vitek2@vutbr.cz



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