

# Simulări și laboratoare virtuale – către educația deschisă

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# Simulations

"A simulation requires action and decisions.  
Students are right in the mix, having an experience  
as opposed to reading about an experience."

— *Professor Amy Edmondson, Harvard  
Business School*

# Învață cum să-ți transformi **ideile** în **afaceri** **de succes** printr-un **bootcamp** de 2 săptămâni

Societatea Antreprenorială din UPT organizează un bootcamp de antreprenariat, dedicat studenților din universitate. Vino și dobândește cunoștințele necesare pentru a face primii pași spre propriul tău business de la trainerii și mentorii experți.

Aplică la *Start-up Your Future*  
- bootcamp de antreprenariat -

DAYS HOURS MINUTES SECONDS  
00 : 00 : 00 : 00

**Înscrierile s-au încheiat**



## La ce **unelte** vei avea acces?



### Gallup Builder Profile

Trăsăturile tale îți influențează modul în care construiești o afacere. Profilul BP10 îți identifică profilul tău unic de antreprenor.

> [Vezi detalii](#)



### The Food Truck Challenge

Ce ai face dacă ai primi un food truck funcțional? Prin această simulare poți învăța cum să-ți crești o afacere în echipe.

> [Vezi detalii](#)



### VentureBlocks

Învăță și exersează-ți abilitățile de antreprenor într-un mediu virtual. Învăță cum să le iei interviuri posibililor tăi clienți și cum să analizeze datele obținute.

> [Vezi detalii](#)



Map

Reports

Leaderboard

Week 1, Day 1



## Make Decisions

Method:



Food Truck



Pushcart



Research

Menu:



Ice Cream



Frozen Yogurt



Smoothies

Location:



Downtown



Arts District



Train Station



University



City Market



Beach



Map

Reports

Leaderboard

End of Simulation

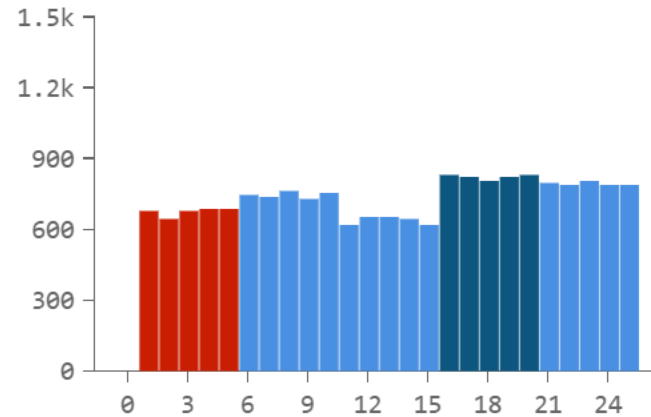


Market Data

Observations

## REVENUE

Daily



## DECISION HISTORY

Day 1 3 5 7 9 11 13 15 17 19 21 23 25



## BREAKING FROM THE FIELD

- Having tried the City Market before, you position yourself at the optimal spot to take advantage of increased foot traffic, resulting in increased sales.

## PREVIOUSLY FROM THE FIELD

- Construction at the university means you must park in a remote section of campus, significantly reducing foot traffic in your area.
- City market regulars pass you by in favor of healthier options at the produce stands.
- While huge numbers of commuters pass through the train station every day, most of them are too busy to stop.
- Despite moderate foot traffic through downtown, office workers don't typically order anything that might drip on their clothes.

## Make Decisions

Method:



Food Truck

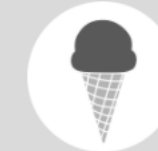


Pushcart



Research

Menu:



Ice Cream



Frozen Yogurt



Smoothies

Location:



Downtown



Arts District



Train Station



University



City Market



Beach

## Overview All Teams

Week 1 Method Used:

Truck 
  Research 
  Pushcart

**COPY TO CLIPBOARD**

**RESET CHECKED RUNS**

**RESET ALL RUNS**

☑	↕ Date	↕ Team	Users	↕ Scenario	↕ Total Revenue	↕ Research	↕ Cart	↕ Truck
<input type="checkbox"/>	12/02/20, 1:45 PM GMT+2	[Redacted]	[Redacted]	C	\$18,546	0 weeks	0 days	5 weeks
<input type="checkbox"/>	11/25/20, 5:56 PM GMT+2	[Redacted]	[Redacted]	C	\$17,745	0 weeks	10 days	3 weeks
<input type="checkbox"/>	11/24/20, 2:06 PM GMT+2	[Redacted]	[Redacted]	C	\$18,822	0 weeks	0 days	5 weeks
<input type="checkbox"/>	11/23/20, 5:47 PM GMT+2	[Redacted]	[Redacted]	B	\$25,371	1 week	0 days	4 weeks
<input type="checkbox"/>	11/23/20, 12:35 AM GMT+2	[Redacted]	[Redacted]	B	\$18,429	0 weeks	0 days	5 weeks
<input type="checkbox"/>	11/22/20, 7:11 PM GMT+2	[Redacted]	[Redacted]	B	\$22,122	0 weeks	5 days	4 weeks
<input type="checkbox"/>	11/19/20, 2:37 PM GMT+2	[Redacted]	[Redacted]	B	\$18,858	0 weeks	0 days	5 weeks
<input type="checkbox"/>	11/18/20, 6:30 PM GMT+2	[Redacted]	[Redacted]	B	\$14,742	1 week	10 days	2 weeks
<input type="checkbox"/>	11/18/20, 6:10 PM GMT+2	[Redacted]	[Redacted]	B	\$33,027	0 weeks	0 days	5 weeks
<input type="checkbox"/>	11/18/20, 6:09 PM GMT+2	[Redacted]	[Redacted]	B	\$15,348	1 w		





**VIEW LEADERBOARD**  
 Current XP: 100  
 🏆 6th

**NOTES**  
 ✎

**MISSIONS** Level 2: Trash a bad question

Park Stage  
 Level 1 Level 2 Level 3 Level 4

Home Stage  
 Level 5

Bonus



## CONVERSATION

5

QUESTIONS LEFT

10 / 75

XP

Hi, my name is Silviu and I'm working on a project about nanus. Is this your nanu?



## ATSUMO SAYS:

Hi, I'm Atsumo.

I'm sorry, I won't be much help. This is my sister's nanu, Taku. I'm just watching him while she's out of town. He's a great running buddy though!

See you later.

CONTINUE

## VIEW LEADERBOARD

Current XP: 100



6th

## NOTES



## MISSIONS

Level 2: Trash a bad question

Park Stage

Level 1

Level 2

Level 3

Level 4

Home Stage

Level 5

Bonus

<https://ventureblocks.com/>



## CONVERSATION

4

QUESTIONS LEFT

10 / 75 XP

NEW

Do you think you'd enjoy owning Captain more if you were more prepared for him?



NEW

Would you mind taking a few minutes to answer some questions about Captain?

ASK

## OH NO!

Do you think you'd enjoy owning Captain more if you were more prepared for him?



You asked this question...

## WHY IT'S BAD

Question type: leading

Leading questions make assumptions about your customer that may be false. These drag your own biases into the conversation.

This question suggests that John and his girlfriend were unprepared to take care of Captain, and that John doesn't enjoy owning him. However, John never said this, only that they just got Captain.

CONTINUE

My Notes



Take notes about what matters to your customer. **CONTINUE** start typing!



Settings



Tutorial



Feedback



Close

## VIEW LEADERBOARD

Current XP: 100



6th

## NOTES



## MISSIONS

Level 2: Trash a bad question

Park Stage

Level 1

Level 2

Level 3

Level 4

Home Stage

Level 5

Bonus

# ANALYTICS



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[Take a guided tutorial of these analytics](#) ?

**Course name:** SAS UPT Bootcamp

**Course number:** 101

**Course section:** General

[< Back to Analytics](#)

**Switch to other analytics:** [Live Leaderboard](#) | [Class Strengths and Weaknesses](#) | [Report Cards by Student](#) | [Class Averages](#)

## LIVE LEADERBOARD

Position	Student	Current Score	High Score
1	[Redacted]	775	775
2	[Redacted]	765	765
3	[Redacted]	760	760
4	[Redacted]	745	745
5	[Redacted]	700	700
6	[Redacted]	690	690
7	[Redacted]	685	685
8	[Redacted]	665	665
9 (tie)	[Redacted]	650	650
9 (tie)	[Redacted]	650	650



# CLASS AVERAGES

## Class Averages

Average times played ▲	Average time spent (est.)	% Won	Average level	Average high score	% Took notes
2	1:12:08	92%	7	669	92%

## Individual Students

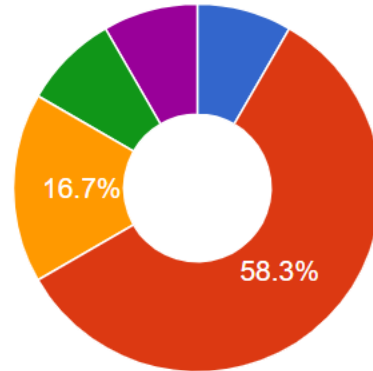
Student Id Number	First Name	Last Name ▲	Times played	Time spent (est.)	Won?	Level	High score	Took notes?
	[REDACTED]	[REDACTED]	1	50:20	✓	8	775	✓
	[REDACTED]	[REDACTED]	1	44:00		4	300	✓
	[REDACTED]	[REDACTED]	1	52:40	✓	8	765	
	[REDACTED]	[REDACTED]	2	55:20	✓	8	665	✓
	[REDACTED]	[REDACTED]	1	1:12:40	✓	8	745	✓
	[REDACTED]	[REDACTED]	2	54:50	✓	8	690	✓
	[REDACTED]	[REDACTED]	1	1:01:40	✓	8	650	✓
	[REDACTED]	[REDACTED]	5	1:26:00	✓	8	650	✓
	[REDACTED]	[REDACTED]	1	1:00:20	✓	8	700	✓
101	[REDACTED]	[REDACTED]	1	39:40	✓	8	650	✓
-	[REDACTED]	[REDACTED]	1	40:30	✓	8	760	✓
101	[REDACTED]	[REDACTED]	12	4:07:30	✓	8	685	✓

[< Back to Dashboard](#)

# CLASS STRENGTHS AND WEAKNESSES

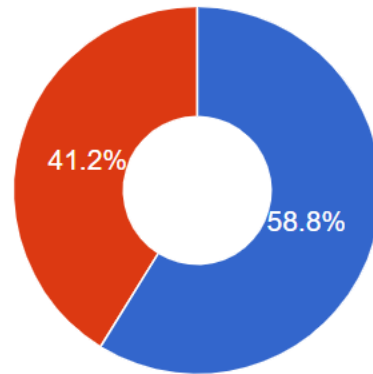
## Class Performance in the Simulation

How many times students played to win the simulation



- Did not win
- Won after 1 play
- Won after 2 plays
- Won after 5 plays
- Won after 12 plays

What students struggled with



- Customer interviews
- Building insights

# OPEN EDUCATIONAL RESOURCES: SIMULATIONS AND VIRTUAL LABS

An introduction to open educational resources (OER).

<a href="#">Home Page</a>	<a href="#">Finding Open Textbooks &amp; Courses</a>	<a href="#">Adopting / Adapting / Authoring OER</a>	<a href="#">Finding Images, Audio, and Video</a>	
<a href="#">Licensing of OER</a>	<a href="#">Open Mines</a>	<a href="#">OER @ Mines Champion</a>	<a href="#">Simulations and Virtual Labs</a>	<a href="#">Finding Open Data</a>

## Simulations and Virtual Labs

Our teaching and learning environments have changed quite rapidly this year! This page provides a (growing) list of free virtual labs and simulations. See the "[Finding OER](#)" tab for freely available textbooks and other course materials. If you find or create a resource to share, please email Emily Bongiovanni ([emilybongiovanni@mines.edu](mailto:emilybongiovanni@mines.edu)) to have it added to the page.

Software repositories that include thousands of open source programs that do not cleanly fit into the categories below include the [Community Software Internet Archive](#) and [Software Library](#).

Please see our vast list of [research guides](#) for lists of resources (both OER and non-OER) curated for specific subjects or course.

This page is the product of the Open Education community, who quickly came together to share resources and help each other's campuses.

For disciplinary organization, see: [Digital Commons Three-Tiered List of Academic Disciplines](#)

### Engineering

- [Energy3D](#)  
A simulation-based engineering tool for designing green buildings and power stations that harness renewable energy to achieve sustainable development.

### Medicine and Health Sciences

- [ActivEpi](#)  
An electronic textbook for teaching epidemiology.
- [Community Health Nursing](#)  
Resources for the Community Nursing

### Social and Behavioral Sciences

- [AnyLogic](#)  
Simulation software that combines discrete event, system dynamics, and agent-based simulation methods so you can model any



## Engineering

- [Energy3D](#)  
A simulation-based engineering tool for designing green buildings and power stations that harness renewable energy to achieve sustainable development.
- [Flowsquare](#)  
A two-dimensional computational fluid dynamics (CFD) software for unsteady, non-reactive/reactive flows. The aim of this software is to provide a handy CFD environment so that more people can get to know what CFD is like and simulate flows for their educational and/or academic interests.
- [GNU Radio](#)  
A free & open-source software development toolkit that provides signal processing blocks to implement software radios. It can be used with readily-available low-cost external RF hardware to create software-defined radios, or without hardware in a simulation-like environment.
- [LogicSim](#)

## Medicine and Health Sciences

- [ActivEpi](#)  
An electronic textbook for teaching epidemiology.
- [Community Health Nursing](#)  
Resources for the Community Nursing Diagnosis Assessment.
- [Jim Allison: Breakthrough](#)  
Award winning documentary with accompanying toolkit and lesson plans.  
*more...*
- [MDCUNE](#)  
Modular Digital Course in Undergraduate Neuroscience Education (MDCUNE) provides completely digital, inquiry-based laboratory modules in neuroscience.
- [Nordic University Health Hub](#)  
Open Educational Resources on Health from Nordic universities.
- [Open Neuroscience Education](#)  
Labs, open data, and other resources for teaching neuroscience.
- [Public Health Image Library \(PHIL\)](#)

## Social and Behavioral Sciences

- [AnyLogic](#)  
Simulation software that combines discrete event, system dynamics, and agent-based simulation methods so you can model any real-world system or process.
- [iCivics](#)  
Designed to engage students in meaningful civic learning. Provides teachers with well-written, inventive, and free resources.
- [APA Online Psychology Laboratory](#)  
Offers interactive demonstrations and experiments as well as sample datasets.

## Multi-Disciplinary

- [CK-12](#)  
Multidisciplinary open-source content and technology tools to help teachers provide learning for students.
- [Data Nuggets](#)  
Provides details of authentic science



## Jump to discipline *new!*

[Astronomy](#)

[Chemistry](#)

[Mathematics & statistics](#)

[Political Science](#)

[Biology \*new!\*](#)

[Engineering & environmental  
science](#)

[Philosophy](#)

[Psychology](#)

[Business & finance](#)

[Physics](#)

## Astronomy

- [astro-simulations](#)

Astronomy simulations and animations by the Columbia Center For New Media Teaching And Learning

- [GEAS project astronomy laboratory exercises](#)

The General Education Astronomy Source (GEAS) project is an astronomy education program based at New Mexico State University

- [PlanetMaker](#)

Create and tweak your own planet using image textures, lighting, and more!

- [SkyServer Projects](#)

Run by the Astrophysical Research Consortium, SkyServer Projects has activities using the Sloan Digital Sky Survey. Categories include basic, advanced, and research challenges.

## Chemistry

## Biology

[General biology](#)

[Virtual dissection](#)

[Anatomy and physiology](#)

[Virtual microscopes](#)

[Biotechnology \*new!\*](#)

[Molecular biology and genetics](#)

[Epidemiology](#)

- [BioMan Biology](#)

Learning games, review games, virtual labs and quizzes to learn about cells, ecology, genetics, physiology, and more!

- [Quant Bio Online \(hub\)](#)

Modules created by CUBES partners designed to teach quantitative skills in a variety of biological contexts and will work well in an online setting with minimal adaptation.

- [HHMI B \*\*https://library.csi.cuny.edu/oer/virtuallabs-simulations\*\*](https://library.csi.cuny.edu/oer/virtuallabs-simulations)

Ask Us



# Open Textbooks/Open Educational Resources (OER)

A general overview of the open access textbooks for faculty, students, and librarians. Topics include open access textbook resources, open access textbook models, hybrid options and electronic textbook options from textbook publishers.

## About Open Textbooks

[A Guide to Course Materials Available Through Licensed Library Resources](#)

[OpenStax Open Textbooks](#)

[Discover and Select Open Textbooks](#)

[Discover Open Access Articles and Books](#)

[OER Repositories & Resources](#)

[OER Simulations & Virtual Labs](#)

[Open Pedagogy](#)

[For Further Reading...](#)

[Open Education Week 2020](#) 

## Simulations

- [Links](#)  
Links to over 200 sites with simulations and virtual labs
- [LabXchange \(Harvard\)](#)  
Lab Simulations including Micropipette use, genetic modeling, electrophoresis.

## Labs

- [Remote Lab Options](#)  
Organized by pedagogical goals.
- [APA Online Psychology Laboratory](#)  
Free. Students and faculty will need to create an account.

## Data & Statistics

- [Teaching & Learning with ICPSR](#)  
These resources were created especially for undergraduate faculty and students. While any of ICPSR's data and tools can be used in the classroom, the ones provided here make it easy for instructors to set up data-driven learning experiences. The materials can be used as the basis for assignments, as an in-class or study exercise, for lecture content, or any other way you see fit. All resources are provided under a Creative Commons (attribution) License.
- [ICPSR Education Data Sets](#)  
Through the ICPSR InterUniversity Consortium for Political and Social Research, you have access to all kinds of education data sets.  
[more...](#)
- [ICPSR Classroom Exercises](#)  
A multitude of exercise sets in addition to learning



Search

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- [Social Sciences \(4\)](#)
- [Workforce Development \(3\)](#)

Material Type

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- [Assessment Tool \(2\)](#)

1-24 of 137 results for: virtual labs

General Biochemistry with Virtual...



The website describes my experience in using virtual labs from a company called Labster in my general biochemistry... [see more](#)

**Material Type:** ePortfolio  
**Author:** Kambiz Hamadani  
**Date Created:** January 13, 2019  
**Date Modified:** January 19, 2021  
 User Rating: ★★★★★

Bookmark [More info](#)  
[Go to material](#)

Virtual Labs for Biostatistics



This is an e-portfolio describing a course redesign project where traditional computer-based labs were replaced by online... [see more](#)

**Material Type:** ePortfolio  
**Author:** Robert Desharnais  
**Date Created:** June 16, 2015  
**Date Modified:** February 24, 2021  
 Editor Review: ★★★★★  
 User Rating: ★★★★★

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Virtual Labs



Over the past few years, the Howard Hughes Medical Institute's Biointeractive website has garnered critical acclaim... [see more](#)

**Material Type:** Collection  
**Author:** Howard Hughes Medical Institute  
**Date Created:** August 3, 2016  
**Date Modified:** March 18, 2020  
 User Rating: ★★★★★

Bookmark [More info](#)  
[Go to material](#)

<https://www.merlot.org/merlot/materials.htm?keywords=virtual+labs>

Open Educational Resources (OER) are teaching, learning and research materials in any medium – digital or otherwise – that reside in the public domain or have been released under an open license that permits **no-cost access, use, adaptation and redistribution** by others with **no or limited** restrictions.

- *UNESCO*

# Peter Jecza - biografie



**TRIADE**  
FOUNDATION



**Jecza** Gallery



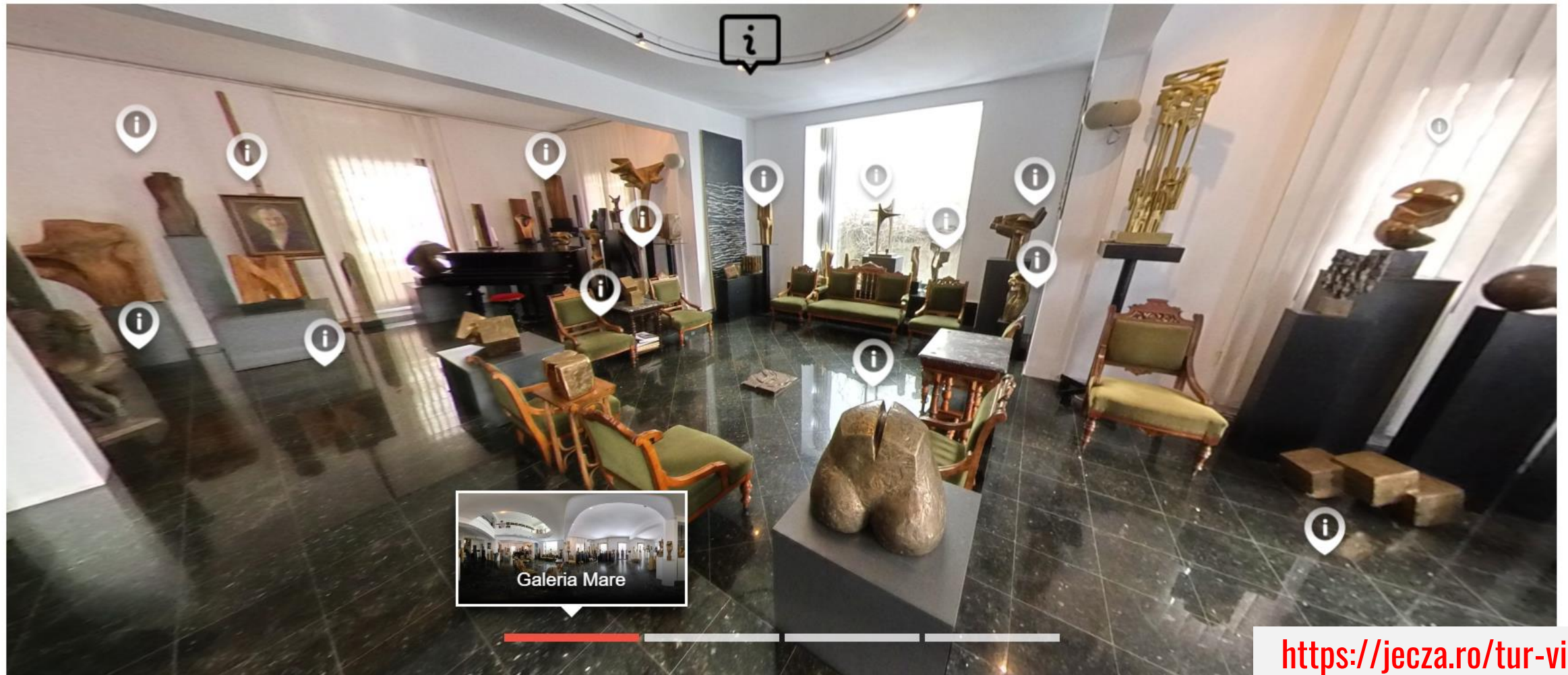
MINISTERUL CULTURII

<https://jecza.ro/>



# Tur virtual

Lucrările sculptorului Peter Jecza își au de peste 20 de ani spațiul care le pune în valoare. Cunoscut, generic, drept Casa Jecza, acest spațiu și-a delimitat, în timp, funcții distincte, subîmpărțindu-se și redefinindu-se în consecință. Împărțite între Galeria mare, Galeria mică, Pasajul de la balcon sau Biblioteca din mansardă, lucrările se oferă vizitatorului care parcurge turul virtual, lăsându-l să simtă atmosfera locului care le găzduiește.







# MECIPT

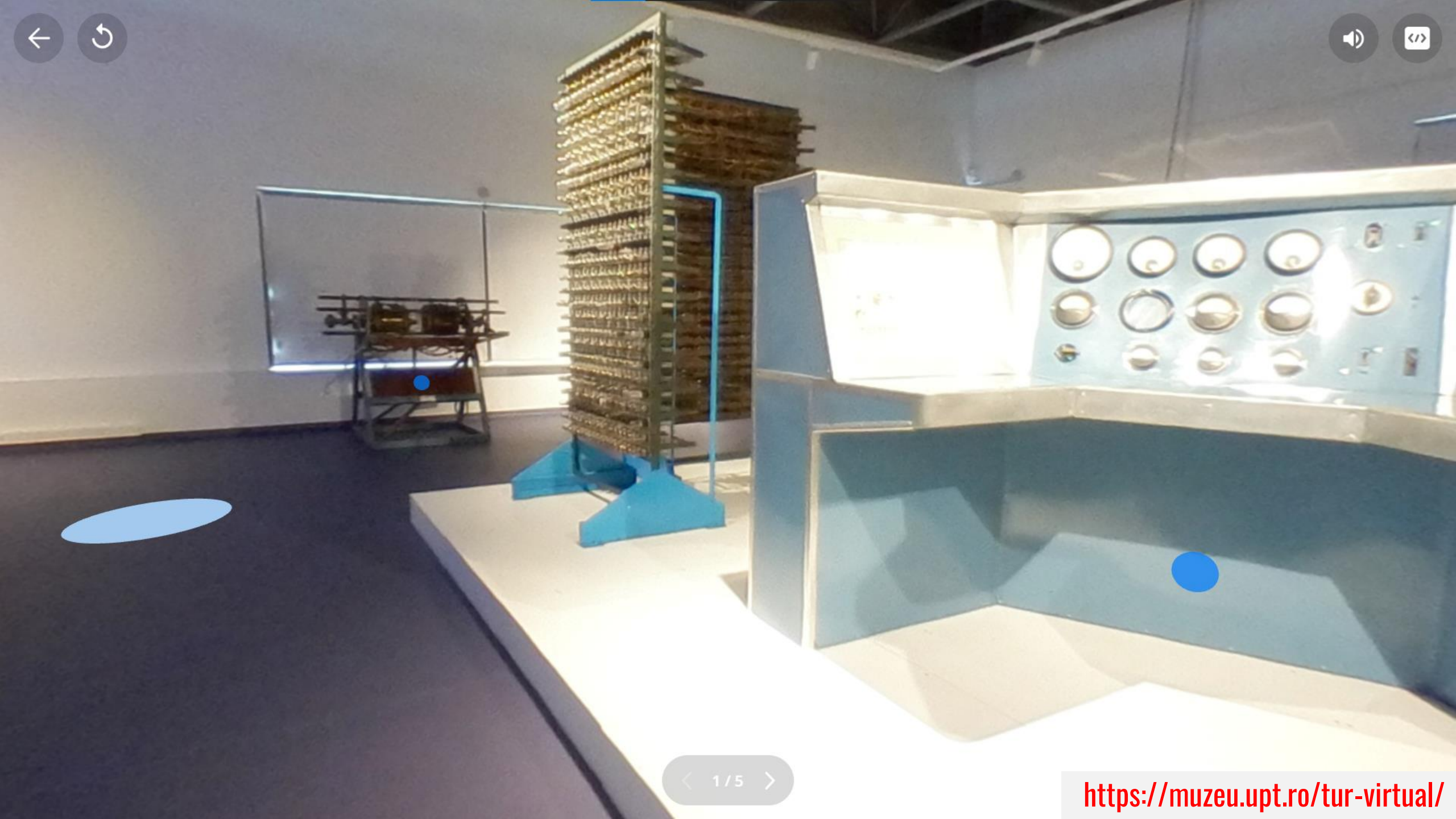
De la MECIPT la calculatoarele cuantice



Primăria  
Municipiului  
Timișoara

<https://muzeu.upt.ro/>







### Panou de control MECIPT-1

MECIPT-1, pus în funcțiune în anul 1961, era un calculator tipic din generația I cu peste 2000 de tuburi electronice, zeci de mii de componente pasive, memorie externă un tambur echivalent 3 kilobiți, introducere de date aflate pe o bandă de hârtie perforată,





Arata toate

Elisabetin

Iosefin

Timisoara

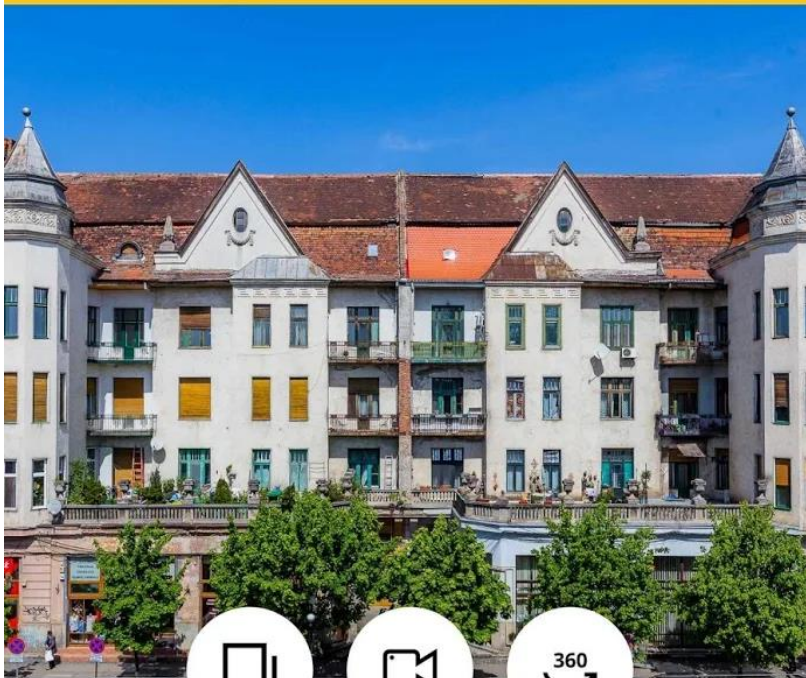






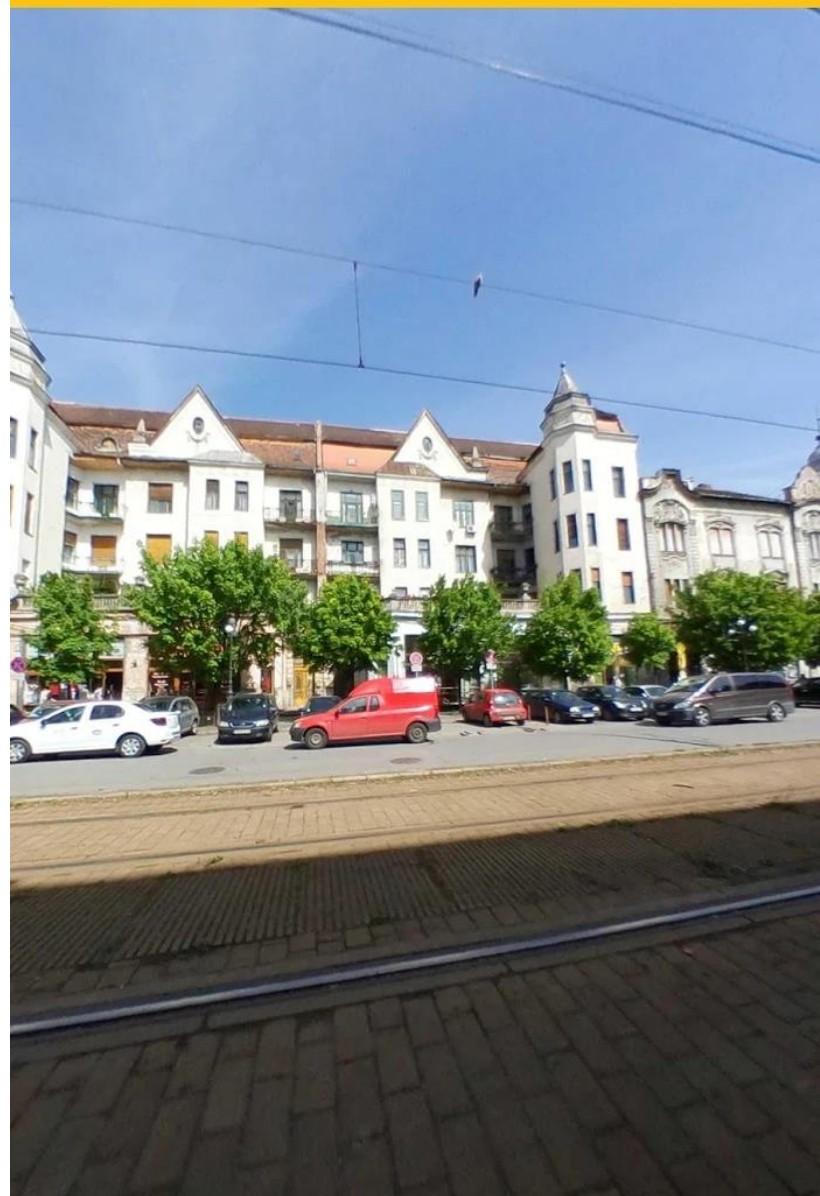
Iosefin

Bulevardul Carol I nr. 10

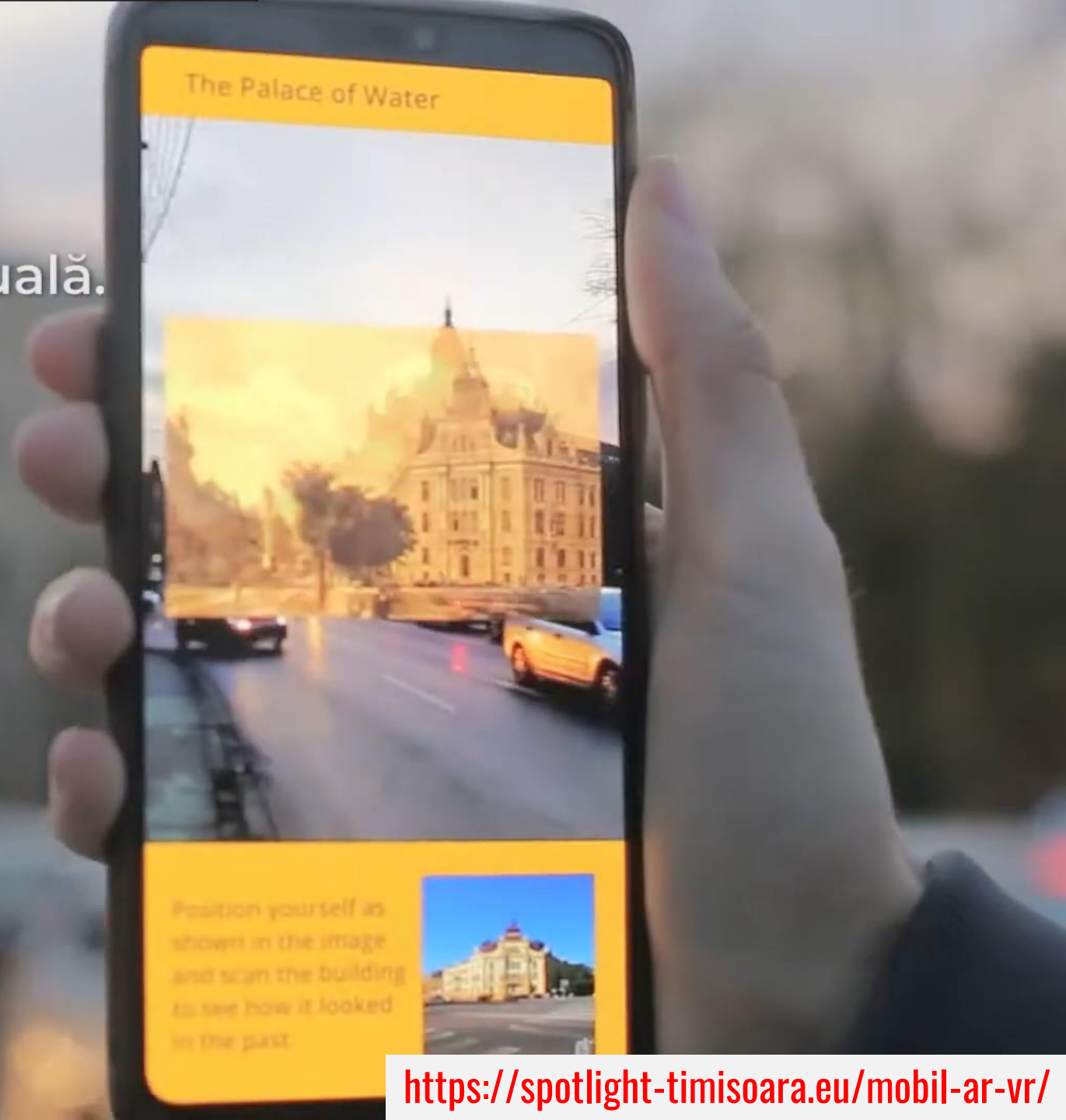


Palatul Hochstrasser Bulevardul Carol I Se

Palatul János (Johann) Hochstrasser, construit între 1912-1914 a fost a doua clădire cu trei etaje din Iosefin; Apatine de curentul Secession târziu, cu forme geometrice, anticipând stilul Art Deco.



Se poziționează telefonul conform perspectivei indicate de fotografia actuală.





Integrating virtual and AUGMENTED reality with WEARable technology into engineering EDUcation

# Augmented WearEd u

Erasmus+, 2020-2022

Lider: UNIVERSITETET I AGDER (NO)

Parteneri: KAUNO TECHNOLOGIJOS UNIVERSITETAS (LT), UNIVERSIDADE DO MINHO (PT),  
**UNIVERSITATEA POLITEHNICA TIMISOARA (RO)**, UNIVERSITA DEGLI STUDI DI SIENA (IT)

Biblioteci deschise de metodologii și unelte VR, AR și haptice purtabile  
pentru acces digital la cursuri și laboratoare de inginerie





Supporting you with remote learning during COVID-19 [View resources >](#)



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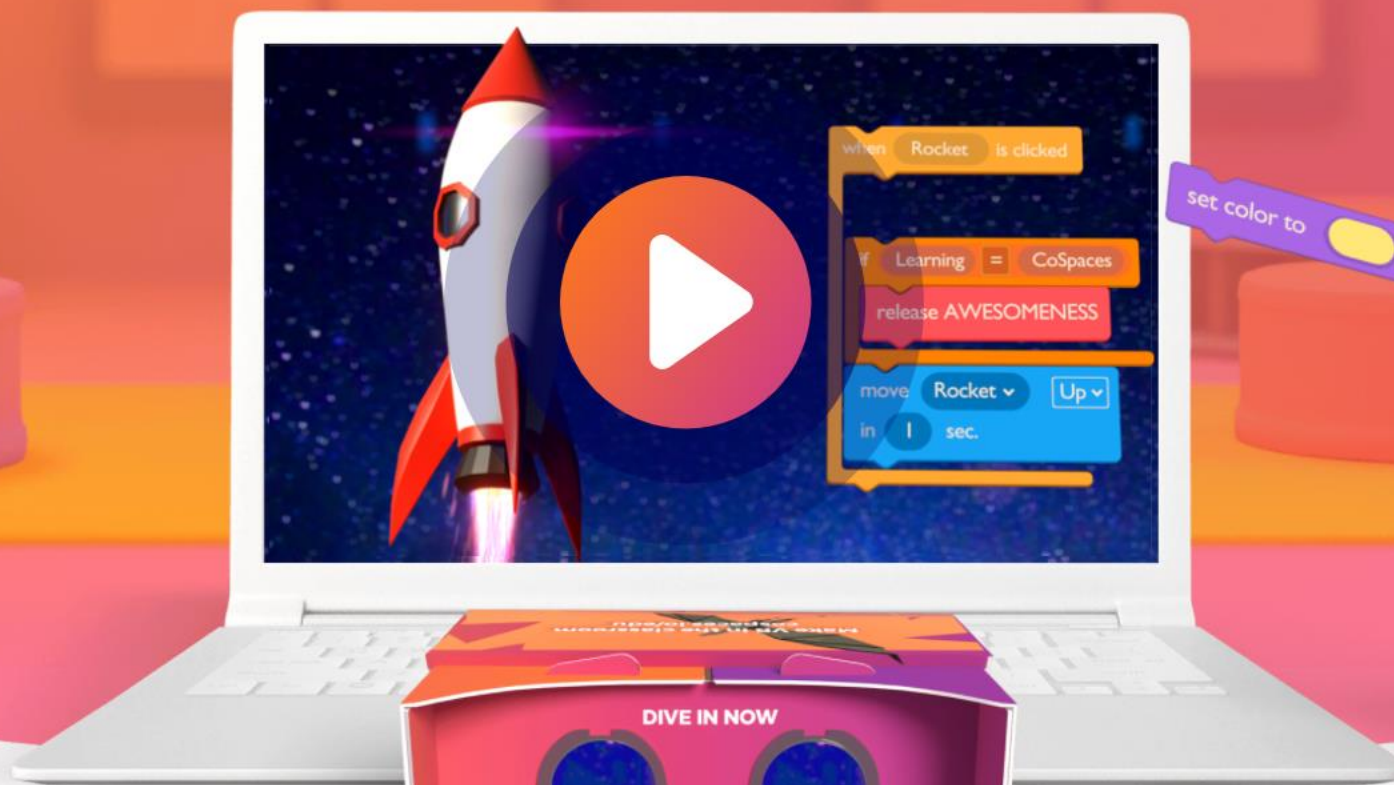
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# Make AR & VR in the classroom



<https://cospaces.io/edu/>



## Interactive Science Museum - C & A



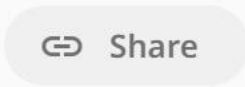
2



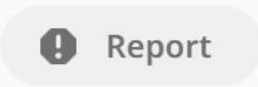
272



Play



Share



Report

By SteamTeach

Published on Dec 20, 2020 5:18 AM

Stage 3 students were asked to create an interactive Science Museum to demonstrate their learning throughout the year. This museum was the product of a 6 week CoSpaces unit. Enjoy!

<https://edu.cospaces.io/Universe>





Home



Undo



Redo



Snapping



Help



Share



Code



Play



<https://pixelartdc.tumblr.com/>



Centrul de ID/IFR și e-Learning



artouching



Fundatia Comunitara Timișoara



AGENZIA ROMÂNĂ DE ÎNCĂLZIRE ȘI RĂCIRE

HAMILTON





# Silviu Vert



Email: [silviu.vert@upt.ro](mailto:silviu.vert@upt.ro)

Web: <https://www.cm.upt.ro/tutor/silviu-vert/>

