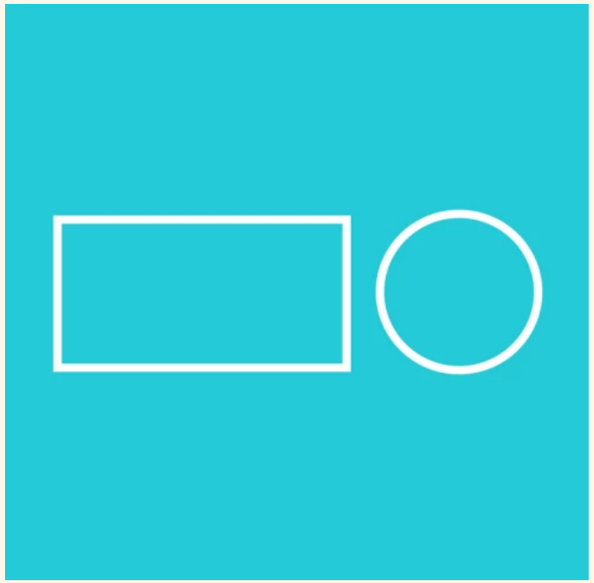
E3UDRES2

Engaged and Entrepreneurial European University as Driver for European Smart and Sustainable Regions

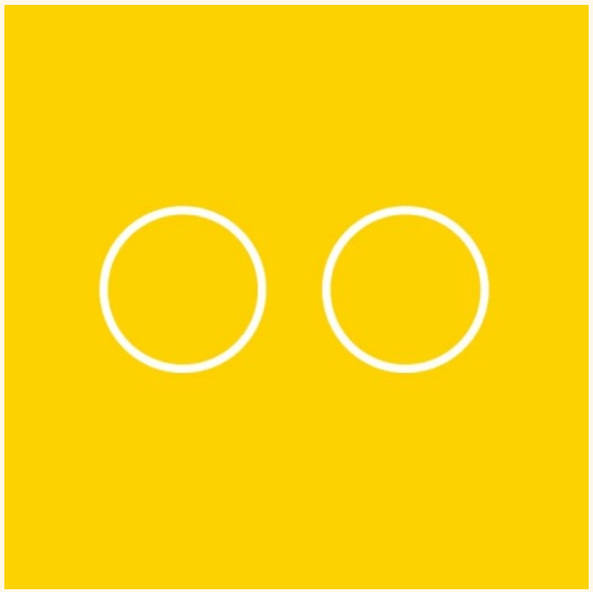
I Living Lab Experiences

Classic
I Living Lab

Blended
I Living Lab



Intensive
I Living Lab



Classic I Living Lab

EUDRES²

Engaged and Entrepreneurial European University as Driver for European Smart and Sustainable Regions

How robotics can help the microalgae cultivation in bio-waste recycling.

Ley T., Luță T., Marino N., Morar M., Soares A., Sudy G., Zulkarnain A.H.

WHY MICROALGAE?

CO_2 + Water + Nutrients + Sunlight → Biofuel, Food, Pharmaceutical

Carbon dioxide

Microalgae can be used to produce carbon-neutral biofuels (diesel, gasoline, jet fuel, butanol, ethanol, methane, hydrogen), used for nutrition (human and animal) and pharmaceuticals (proteins, drugs) without competing with food resources for arable farmland.

BIO-WASTE RECYCLING

Agricultural bio-waste was used as a source of biomass to produce the nutritional liquid that feeds the microalgae.

Biowaste + Water → Nutritional liquid

Algal technology is effective recycling and valorization of nutrients.

- ✓ Lower the waste treatment cost.
- ✓ Reducing environmental impact.
- ✓ Reduction of greenhouse gas emissions.

ROBOTICS + MICROALGAE

MICROALGAE CULTIVATION

CO_2 Carbon dioxide, Nutritional liquid, Natural or Artificial light

Microalgae starter

Agricultural bio-waste Microalgae

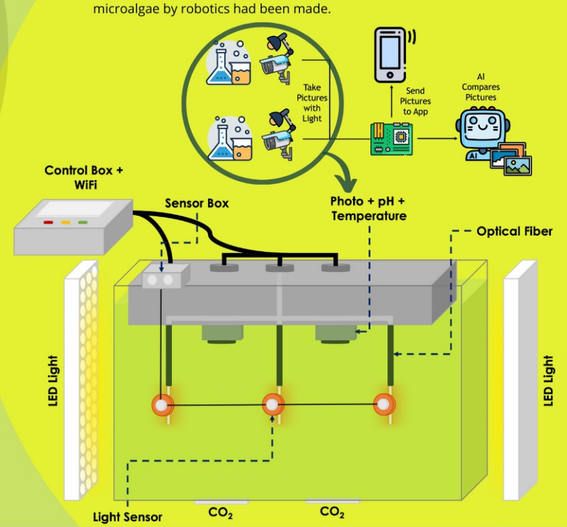
Pigments, Proteins, Carbohydrates, Lipids

Photobioreactor

PROJECT PROTOTYPE

To control and measure how they grow, experimenting with using different types of biowaste as a nutritional source, and to control the overall trial in the lab, was necessary to come up with a more automatic and less expensive method to measure parameters such as microalgae contaminations, pH, temperature and microalgae growth.

A simple system prototype to control and measure the growth factor of microalgae by robotics had been made.



INFLUENCING FACTORS OF MICROALGAE GROWTH

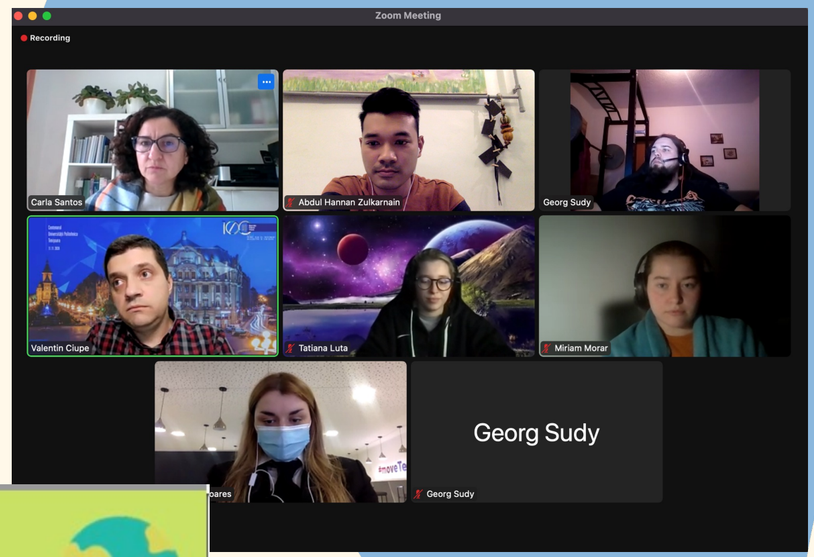
Light (Intensity and Wavelength), pH, Temperature, Nutrients, Movements

EUDRES

How Robotics can help the microalgae cultivation in bio-waste recycling.

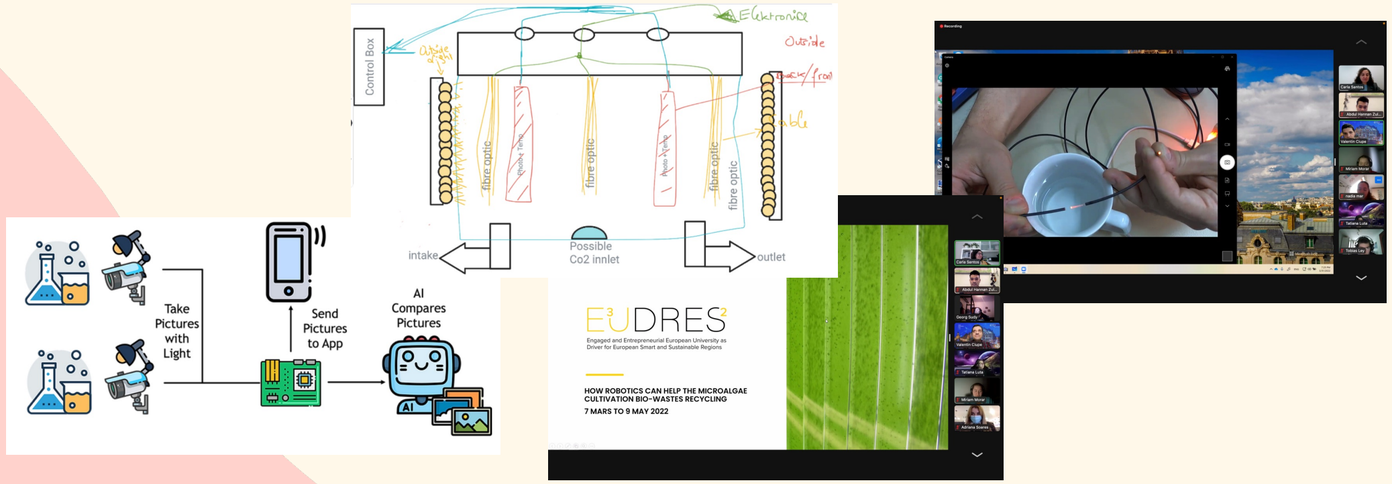
Project poster

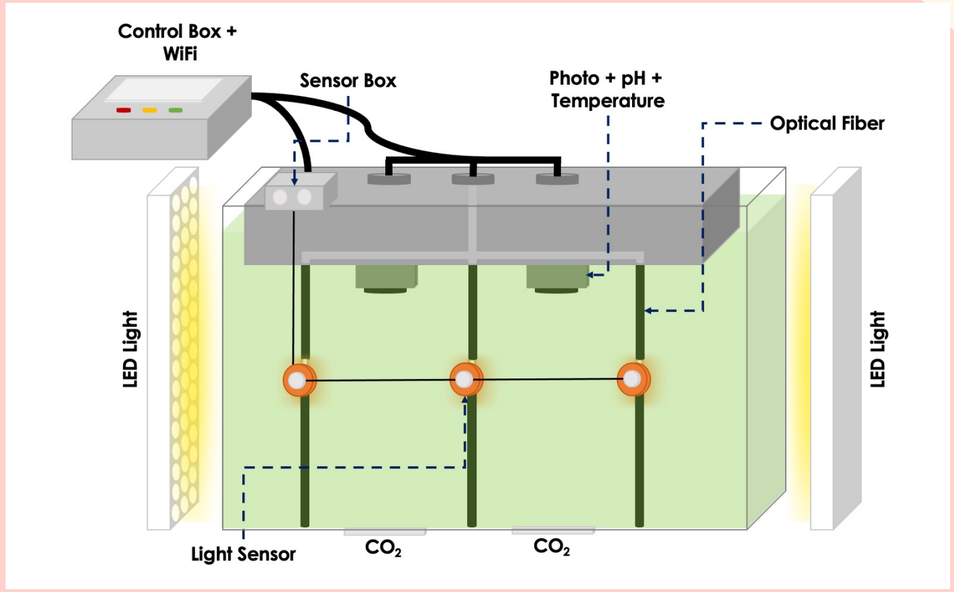
Pitch video



https://www.youtube.com/watch?v=WyIz8a108bo&feature=emb_logo&ab_channel=UCLLResearch%26Expertise

From Concept to Prototype

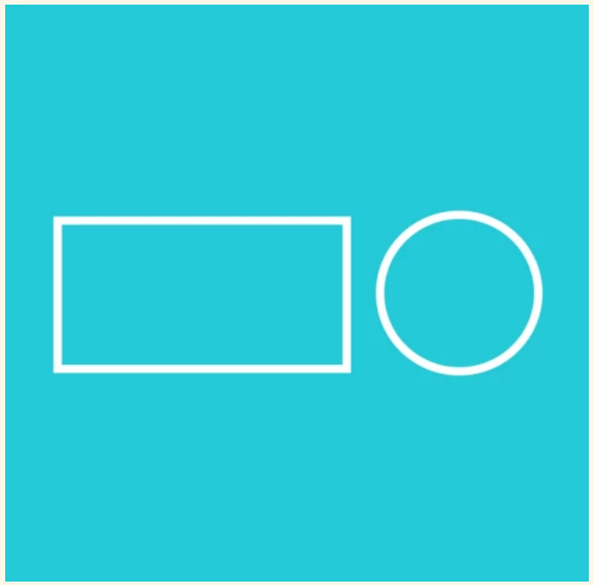




Future Skills:

- Design thinking
- Self-determination
- Ambiguity

Blended I Living Lab



Create a Brand Design & Omnichannel Experience

Project poster

Pitch video

EUDRES
Engaged and Entrepreneurial European University as Driver for European Smart and Sustainable Regions

CREATE A BRAND DESIGN & OMNICHANNEL EXPERIENCE

Dărău Alexandru, Gîrdan Raul-Cristian, Pereira Luely Miguel, Zulkarnain Abdul Hannan Bin

WHAT IS OMNICHANNEL?

- Solve the multitude of problems in one platform.
- Adapt the communication for each person's needs.
- Helping the users to identify the problem and find a proper solution for it.

TARGET AUDIENCES

Have similar wellbeing problems and personal development!

MOVE TO HAPPINESS

"Netflix of Wellbeing and Education"

- Wellbeing content creators
- Easy-to-use platform
- Personal road to happiness

CHALLENGE OWNER

MOVE TO HAPPINESS JUNIOR

BRAND AND STAKEHOLDERS

- institutions
- Content creator
- User
- Owner

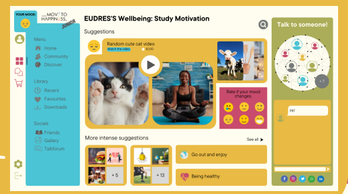
TIME MANAGEMENT
LACK OF MOTIVATION
PRESSURE
SAFETY
SOFT SKILLS
MULTI-TASKING
WELL BALANCED DIET
FINANCIAL
EGO
STRESS
WORK-LIFE BALANCE
PHYSICAL ACTIVITY
MENTAL BREAKDOWN
COMUNICATION
IMPOSTER SYNDROME
LIFE DOUBT

PROTOTYPE & FEATURES

Demographic and question for site personalisation.

Measured by the facial detection and mood behavior analysis.

The interface of personalised site by the facial detection.



If the mood changes, a different personalised site will be suggested.

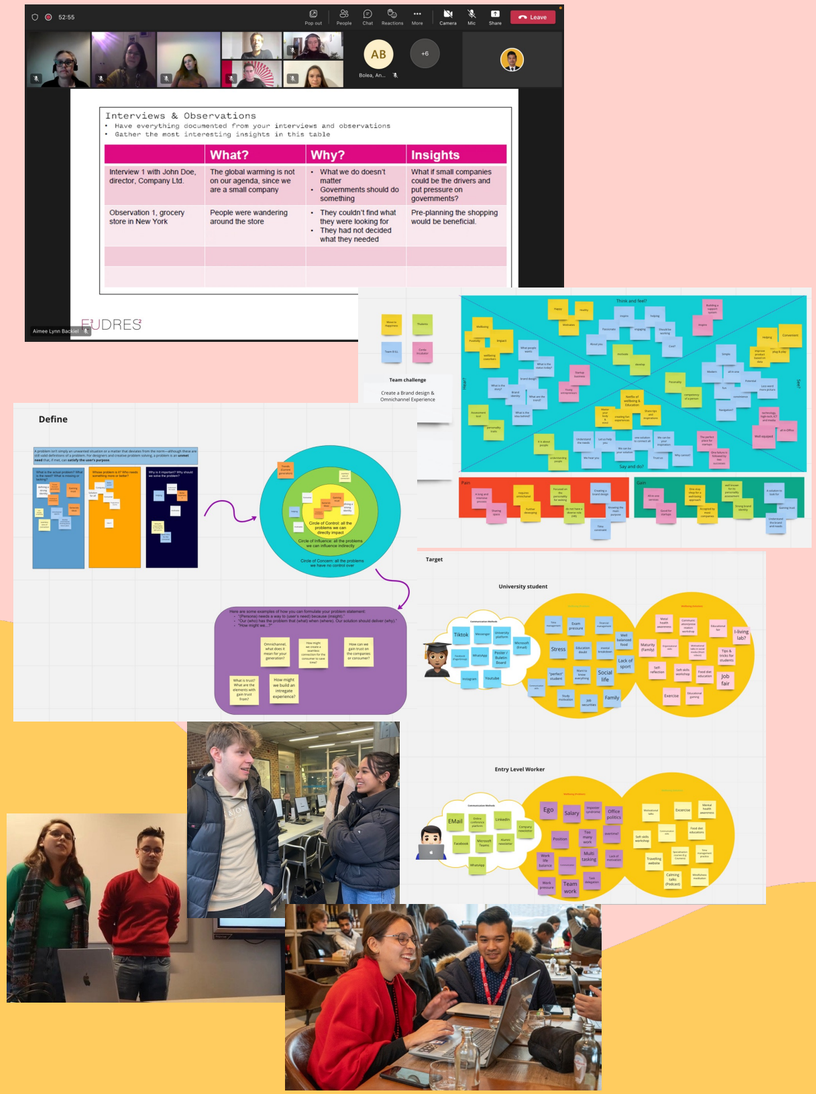
BENEFITS

- Saves time.
- All in one.
- Specialized product.

FUTURE DEVELOPMENTS

- More personalized questions.
- Advanced AI technologies that collect the data on daily mood.
- Additional of more products.

From Concept to Prototype



Future Skills:

Self-competence

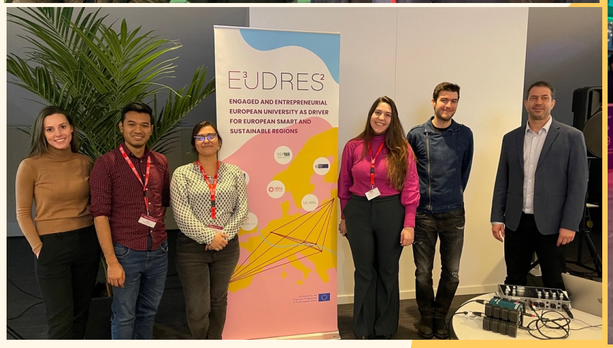
Future and design competence

Cooperation competence

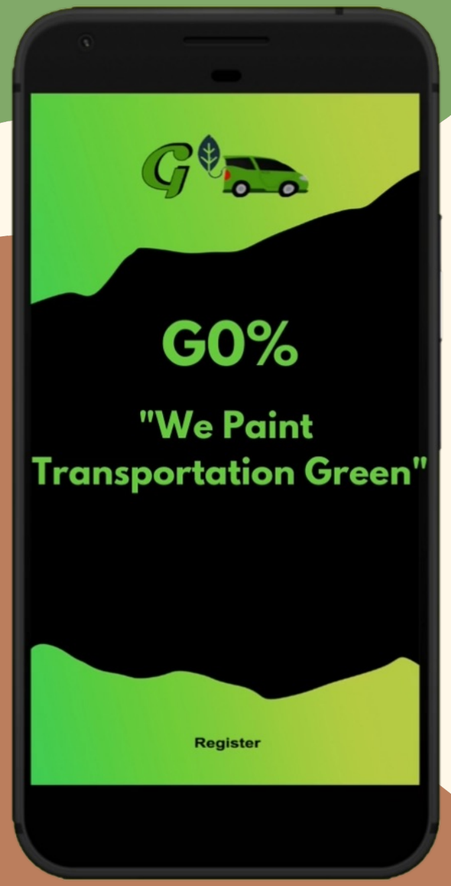
Belgium week

Entrepreneurs and Innovators

Fun, Food and Leisure



I Living Lab
Energy, mobility, biodiversity



Project G0%

How could we reduce the carbon footprint of transportation?

1. What's the problem?

- Too many cars on the roads
- Public transportation underutilized

2. What is the reason?

- "Using a car is more convenient"
- "Public transportation is unreliable"

3. Working out solutions:

- An app to make public transport more appealing
- An app to encourage people to carpool
- An idea for an alternative fuel type and promote "greener" mobility

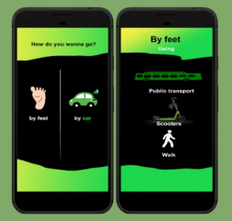
4. Merging them together:

- An application that combines public transport navigation with real-time carpooling, with an added point-system.
- Points can be used to buy and maintain sustainable products at a discounted price.
- The "greener" the travel, the more points acquired.

5. Creating the prototype,

G0%

Data import from other mobility apps.
"Trust system" for safety.



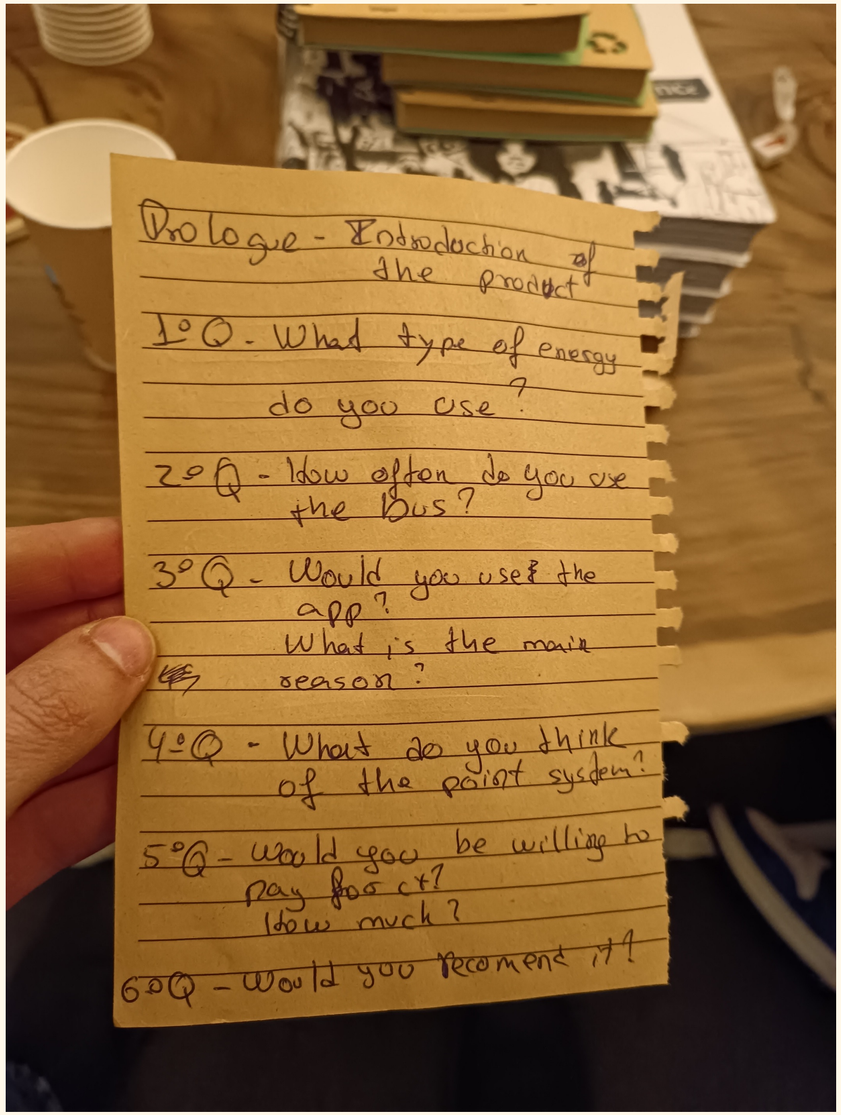
Choice between mobility types.
Point system to encourage green options.

Easy to use, real time transport information.
Pinpoint location for easier carpool matchup.

Daniela Deodato | Gundega Puriņa | Joana Figueira | Alexandru Gherman
Mátyás Lukács | Rodrigo Costa | Thibeau De Becker | Marius Tătucu

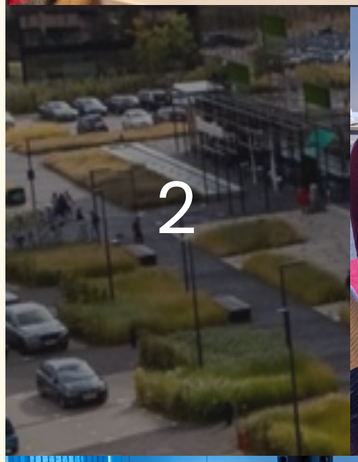
TEAM B Energy Umbrella

Activities in Belgium



Corda Campus

1



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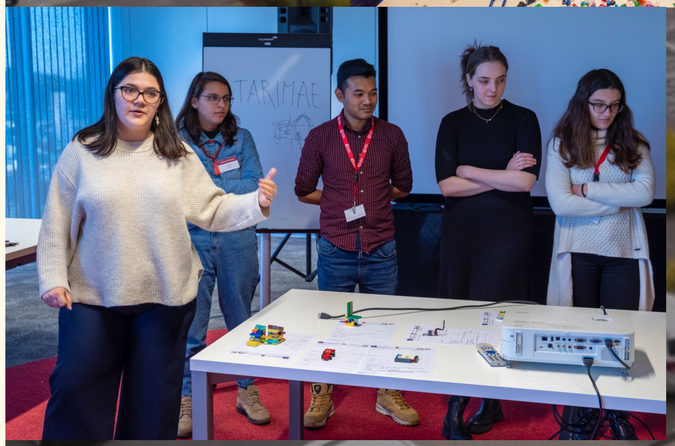
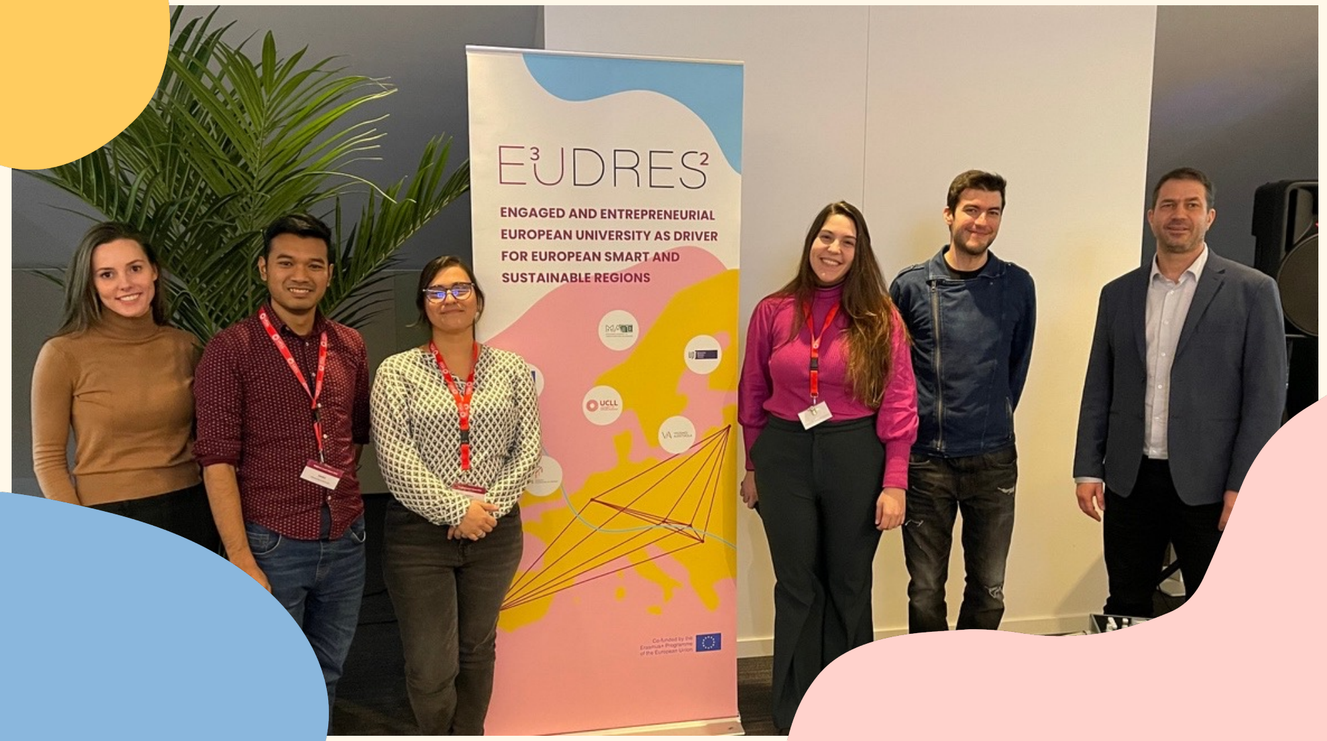
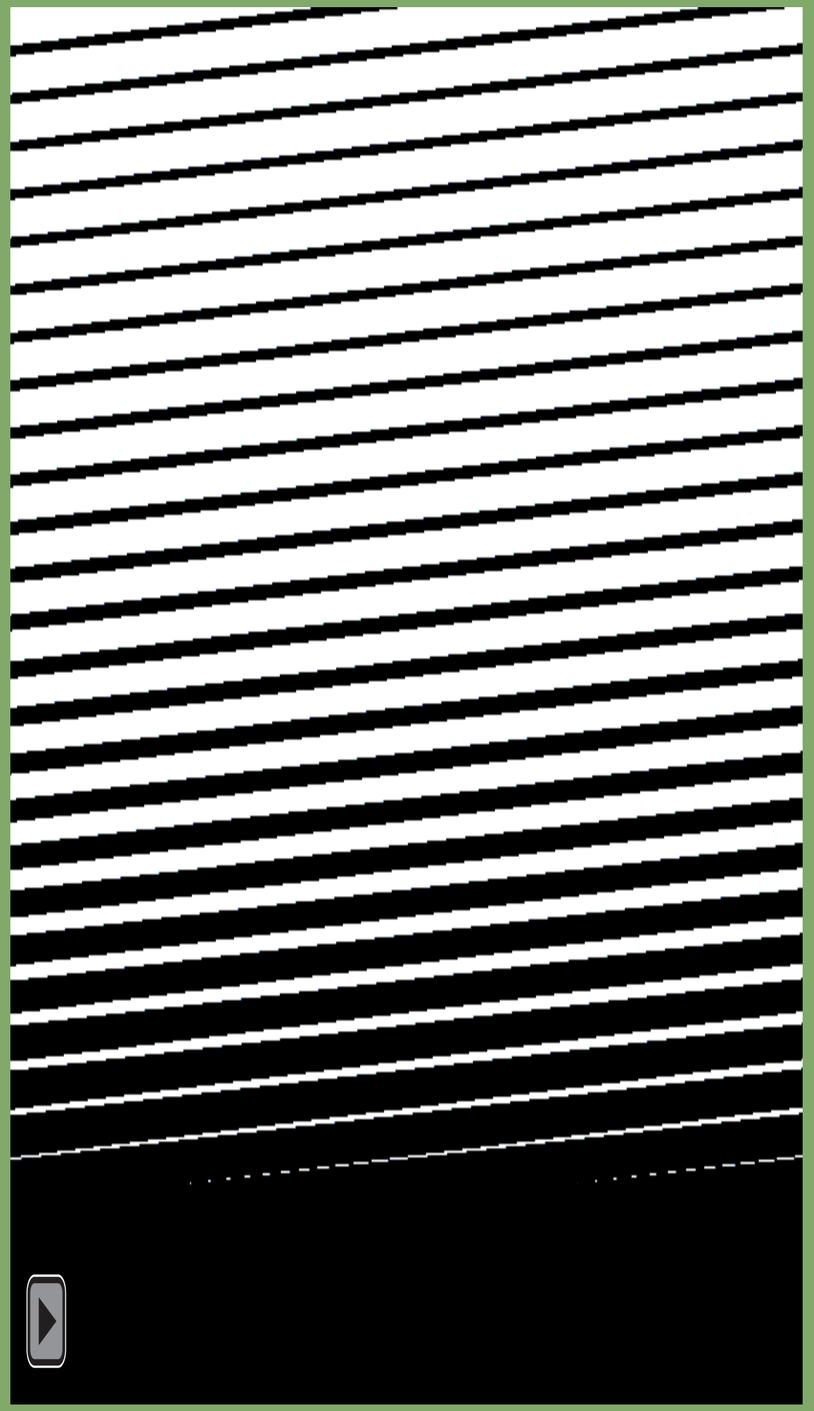


3

Innovative programs

DIVERSITY BRINGS NEW PERSPECTIVES



THANK YOU FOR LISTENING!

Belgium week experience in one word