Welcome to the **Immersive Tech Space** Grand Opening

Erasmus University Rotterdam

Part of:

Erasmus Data Collaboratory | House of AI

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Erasmus Centre for Data Analytics

Erasmus University Rotterdam

Immersive Tech Space
Grand Opening

Gerrit Schipper

Executive Director of
Erasmus Centre for Data Analytics

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Erasmus University Rotterdam

Engagement, partners & goals of the Immersive Tech Space

Jos van Dongen

Director at Erasmus Data Collaboratory

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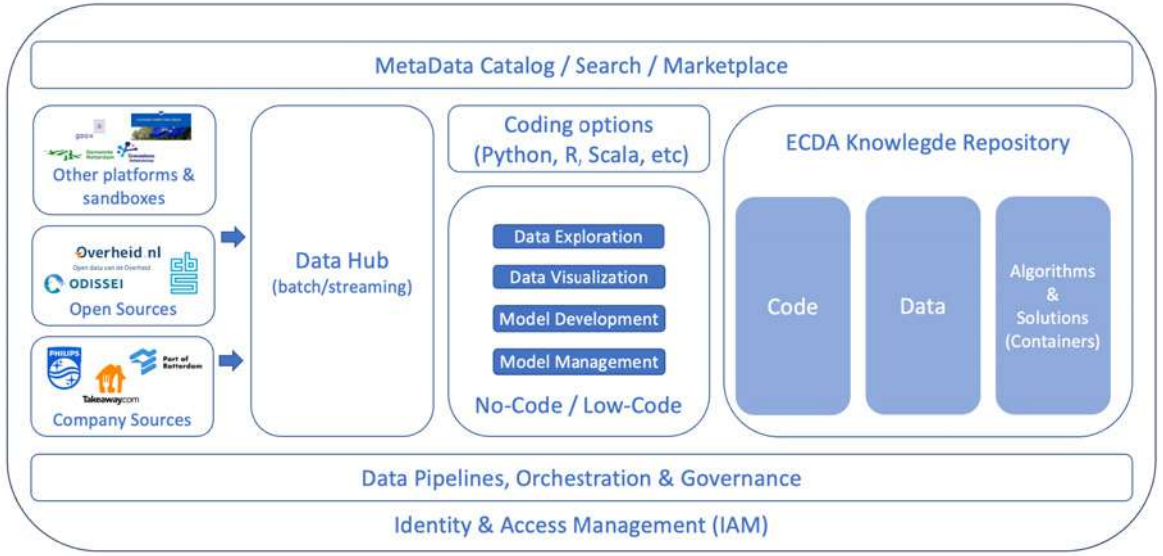
Erasmus Centre for Data Analytics

Erasmus Data Collaboratory



ECDA Data Sandbox

Immersive Tech Space

Farshad Hasanabadi
Platform Engineer
(1-9-2023)

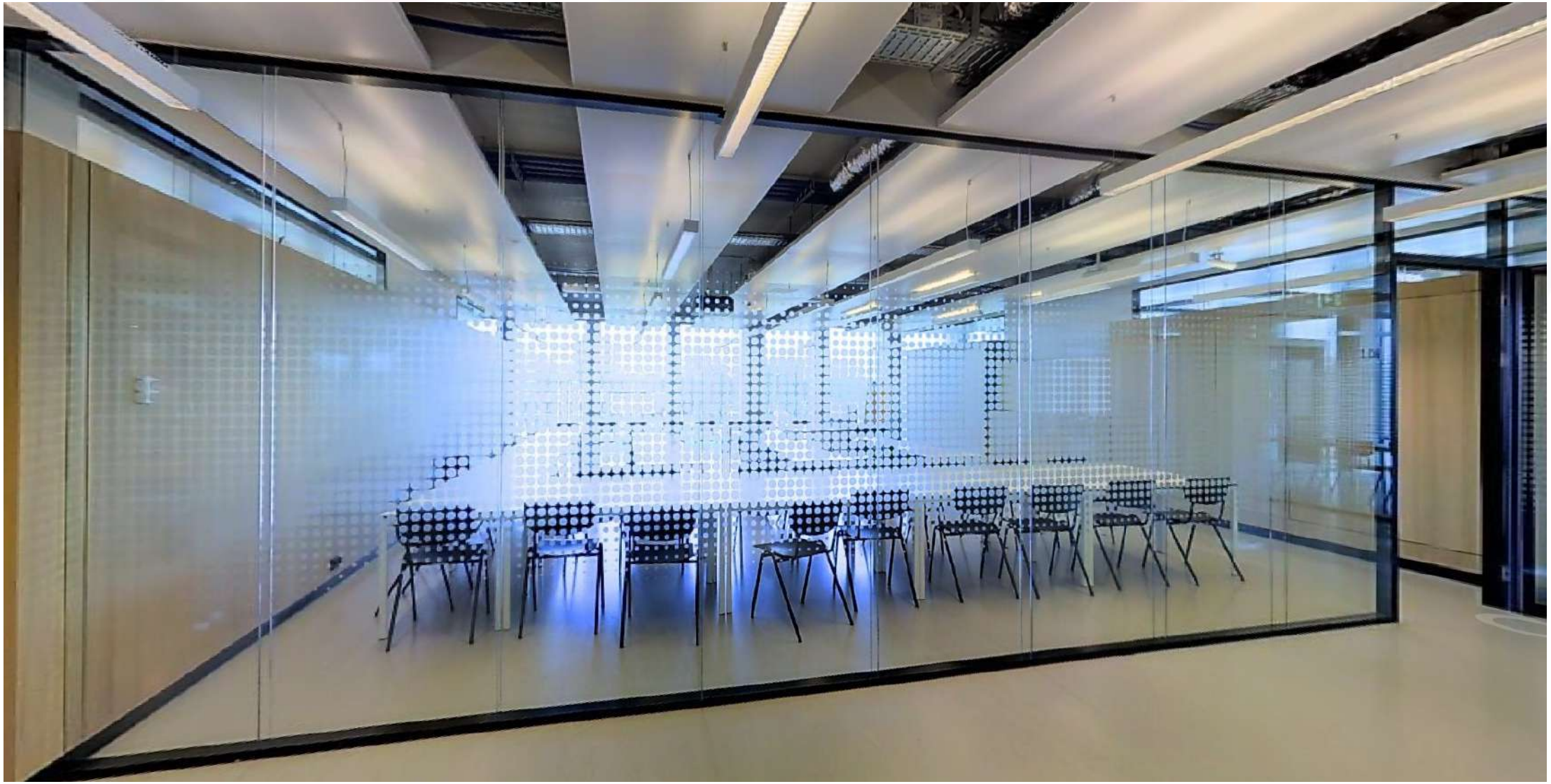
Zaman Ganji
Data Scientist
(1-10-2023)

Omar Al Minawi
Data Scientist
(1-10-2023)

Erasmus Centre for Data Analytics

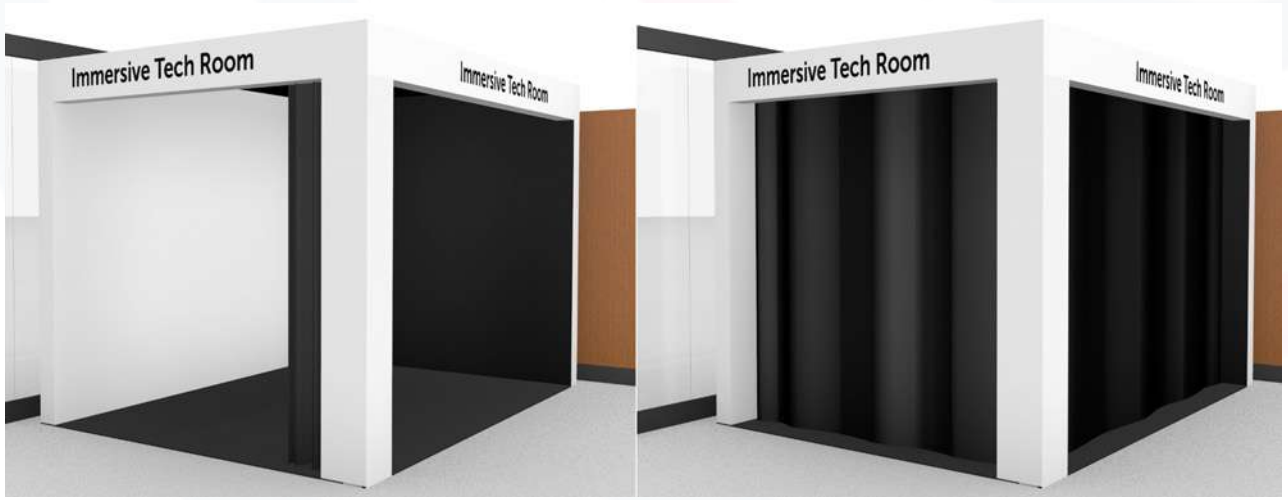
https://chat.edca.ai

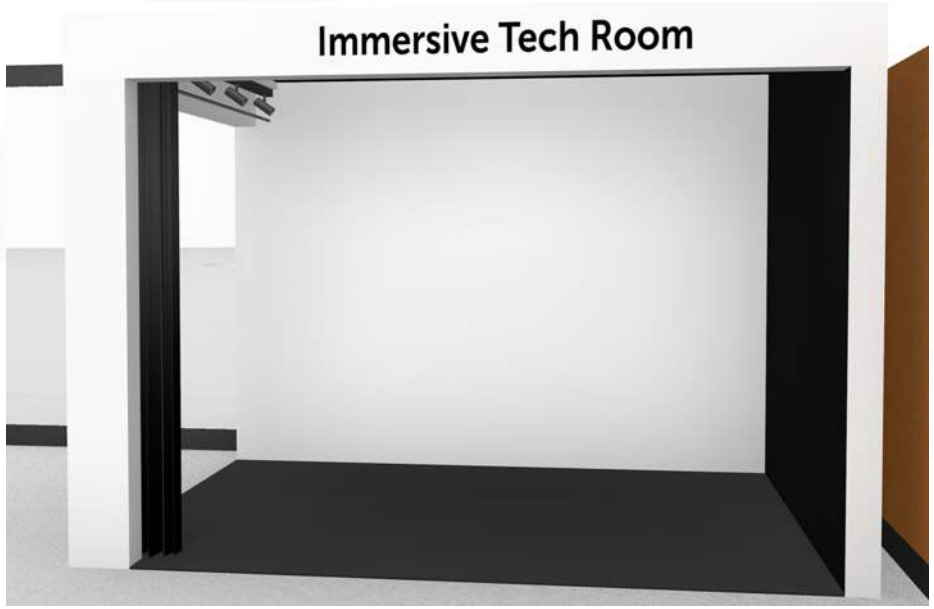
Immersive Tech Space: How it started

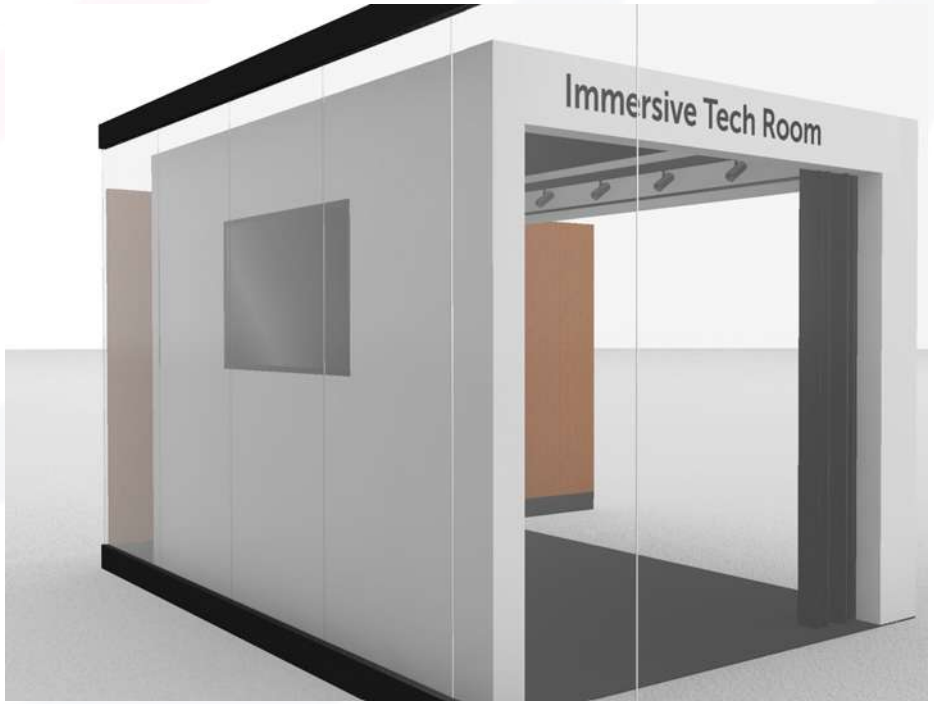


Immersive Tech Space: Design

3D Holo Wall Design







About last week...

Immersive Tech Space @ ECDA

Vanessa Abel

Simeon van Eijl

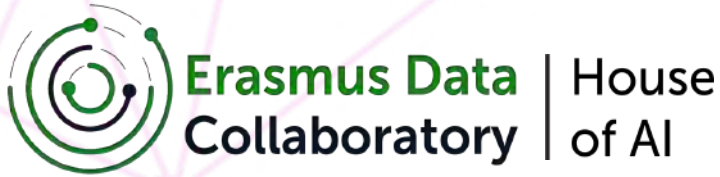
Julia (Jules) Picazo

Frederike Manders
Immersive Tech Program Lead
(1-2-2024)

Marie Kegeleers
Immersive Tech Support Engineer
(1-3-2024)

erasmus & Erasmus Centre for Data Analytics

Erasmus Centre for Data Analytics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Collaboratory
House
of AI


Erasmus Centre for
Data Analytics


Erasmus
University
Rotterdam


convergence


REBLIKA


erasmus


Gemeente
Rotterdam


TEKLE
HOLOGRAPHICS


SHARING CITIES ALLIANCE


BROKEN EGG


360FABRIEK

Immersive Tech Space
Grand Opening Program

Erasmus University Rotterdam

16:55 - 17:05 Immersive Tech Space as part of the Erasmus Data Collaboratory by Gerrit Schipper

16:35 - 16:40 Engagement, partners & goals of the Immersive Tech Space by Jos van Dongen

16:40 - 16:45 Education & Immersive Tech by Vanessa Abel

16:45 - 16:55 Holographic Use Cases by Michel Tzsfaldet

16:55 - 17:05 Immersive Tech and Citizen Engagement in Rotterdam Future Insight

17:05 - 17:15 AR for Social Inclusion by Ting Li

17:15 - 17:25 Anatomic Insights in 3D Virtual Reality by Medical AR

17:25 - 17:35 Official Opening of the Immersive Tech Space by Ed Brinksma

17:30 - 18:30 Immerse yourself! Try our immersive tech experiences.

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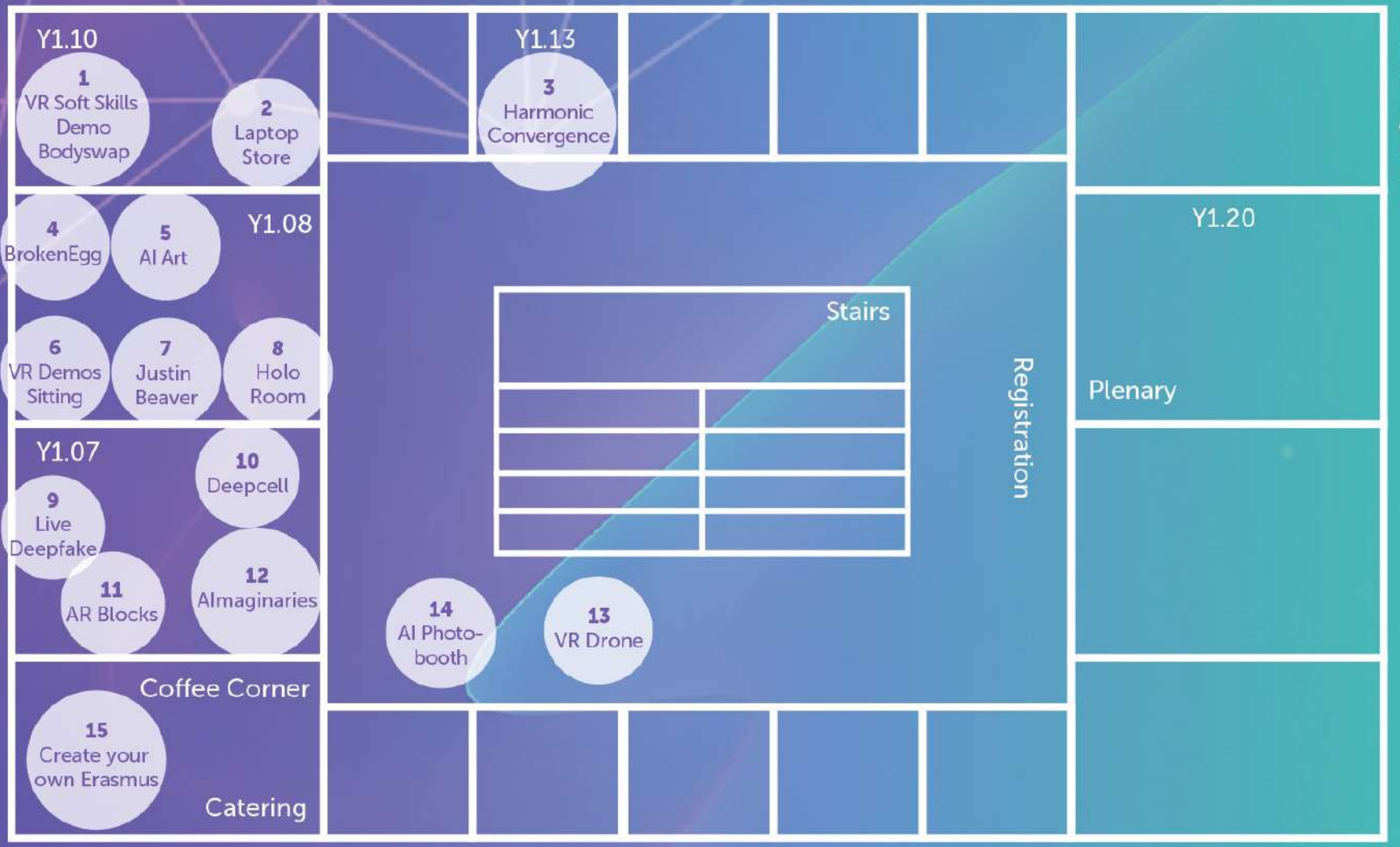

1. VR Soft Skills Training by Bodyswap and ErasmusX
2. Laptop Store demo by Prof. Yvonne van Everdingen
3. Hamonic Convergence by Niki Scheijen
4. Meta by BrokenEgg
5. AI Art by Refik Anadol
6. Sitting VR experiences
7. Justin Beaver
8. Holo Room by Tekle Holographics
9. Live Deepfakes by Yori Ettema
10. Deepcell by Prof. Peter van der Spek
11. AR Blocks by 360 Fabriek
12. Almaginaries by AI-Pact
13. VR Drone by 360 Fabriek
14. AI Photobooth by VR Learning Lab
15. Create your Own Erasmus by Reblika

Immersive Tech Space Map

Erasmus University Rotterdam

Education and Immersive Tech

Vanessa Abel

Director at ErasmusX

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The Immersive Tech space

erasmus

Why immersive technologies?

Trends in the industry


Aid for teaching & learning

Future proof skills

Our vision

To foster enhanced learning experiences by creating new educational concepts through immersive technologies.

We can experiment with this through a development of an educational program that focus on softskills practice within interdisciplinary teams.


Call for
action

Erasmus University Rotterdam

Holographic Use Cases

Michel Tzsfaldet

Chief Executive Officer at Tekle Holographics

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Erasmus Centre for Data Analytics

The Future of Learning & Innovation

Using cutting edge yet tested technology to create the ***knowledge economy of tomorrow***

Welcome to the Future

- Bringing state-of-the-art technology to education
- A new dimension of learning at Erasmus University

Holo Wall: A New Era in Education

- Leaders in holographic technology
- Transforming perception and interaction

Tekle Holographics: Innovating Reality

- Immersive experience
- Bringing complex concepts to life

Case Study: Aramco Academy

- Training future engineers
- Interactive, safe learning environment

Advancing Medical Research

- Visualizing drug impacts
- Accelerating medical breakthroughs

Classroom with Holographic Teachers

- Having an avatar assist human teachers
- Add LLM’s trained on specific curriculums

Unleashing Student Creativity

- • Boundless opportunities for innovation
- • Your imagination is the only limit

Commitment to Education and Progress

- Empowering the next generation of leaders
- A partnership for the future

Erasmus University Rotterdam

Thank You

- Excited for your journey with immersive tech
- Here's to innovation and creativity at Erasmus University

Stay Connected

Michel Tzsfaldet
CEO & Founder
Tekle Holographics
michel@tekleholographics.com
www.tekleholographics.com

Erasmus University Rotterdam

Immersive Tech and Citizen Engagement in Rotterdam

Rick Makkinga

Product Owner at Future Insight Group

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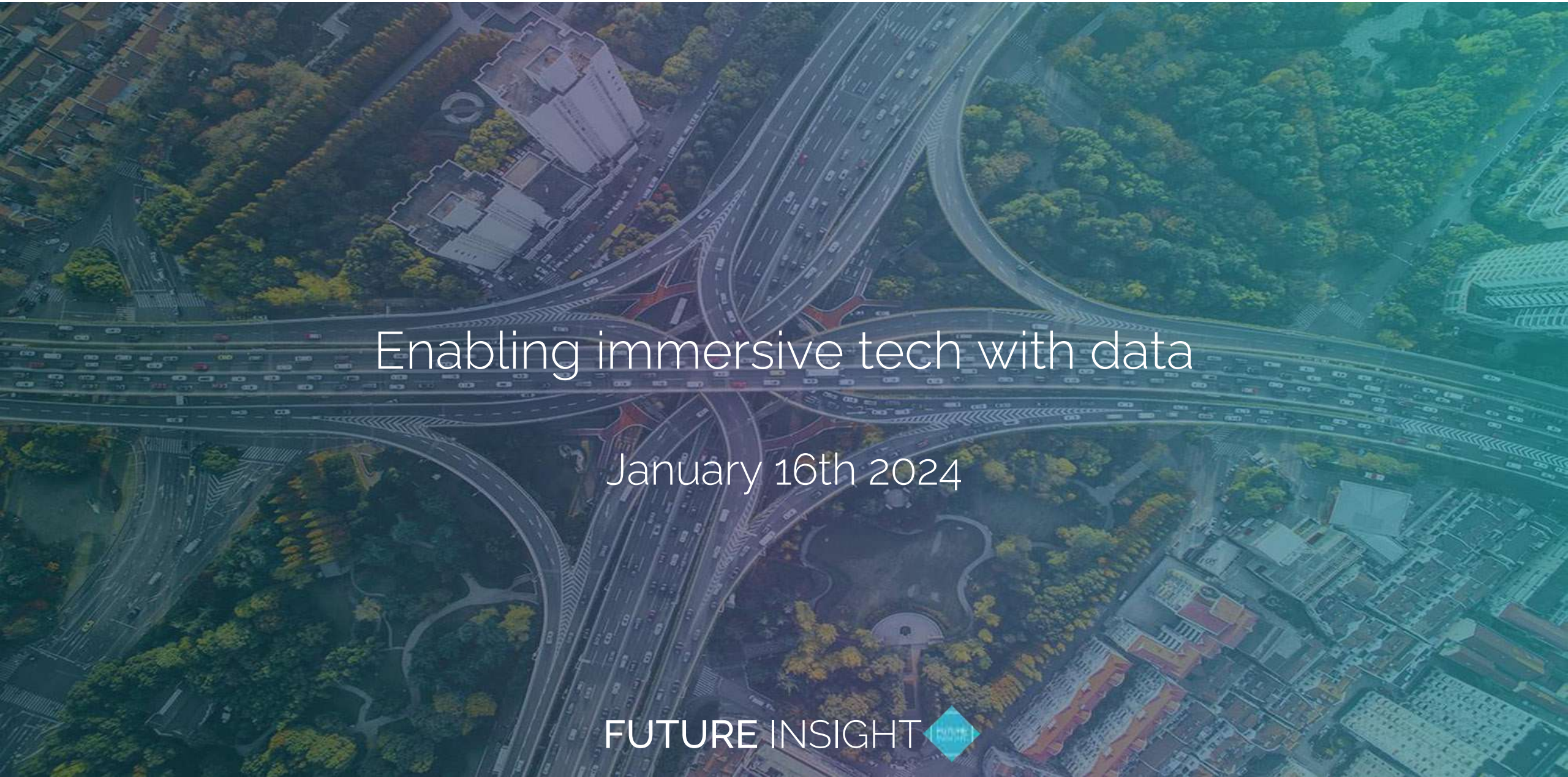
CLEARLY .Projects | .BIM | .3D-City | .Hub



Enabling immersive tech with data

January 16th 2024

FUTURE INSIGHT

That's me

Product owner at Future Insight

Future Insight

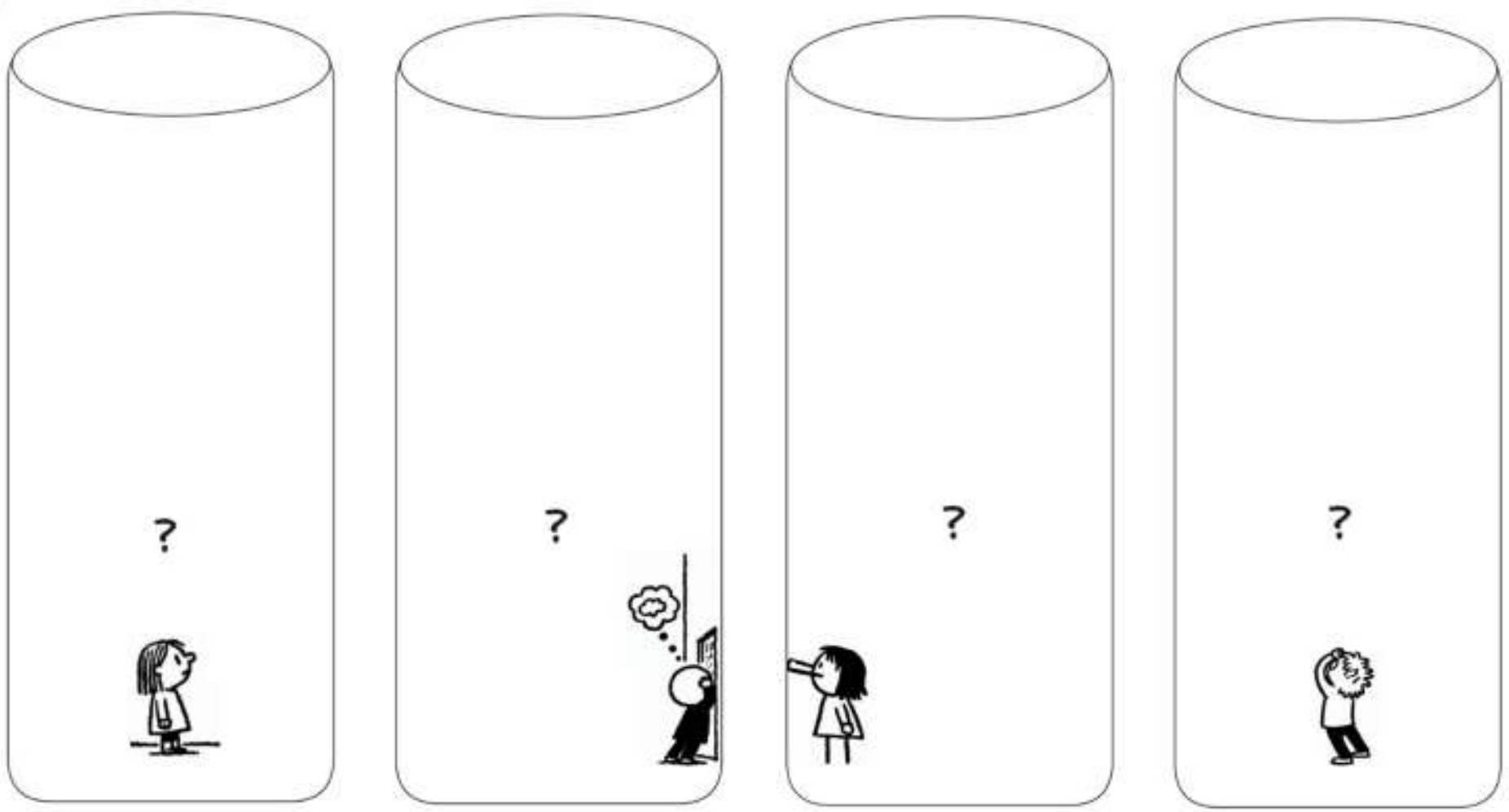
Clearly.HUB

Clearly.Projects

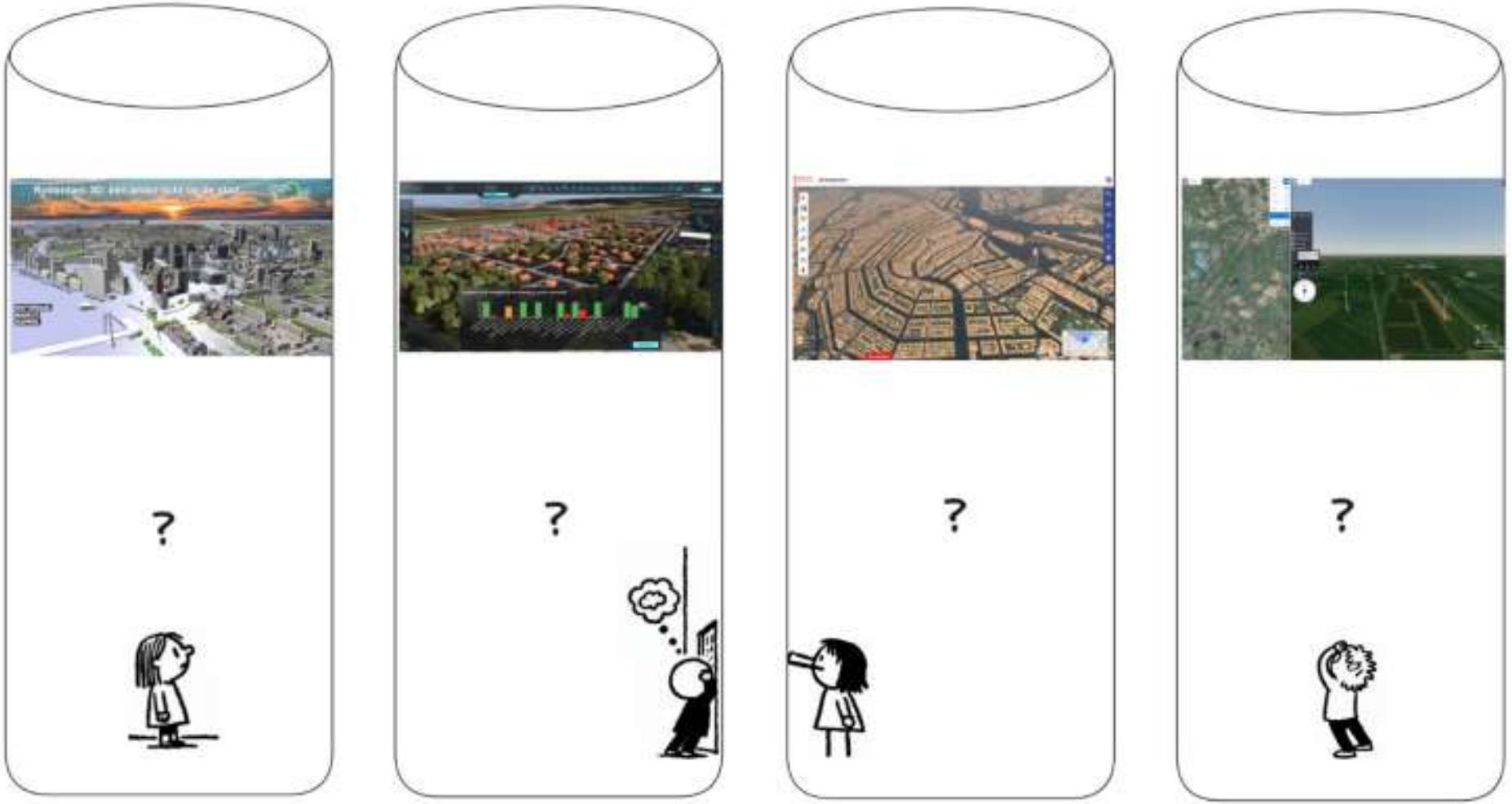
Clearly.BIM

Clearly.3D City

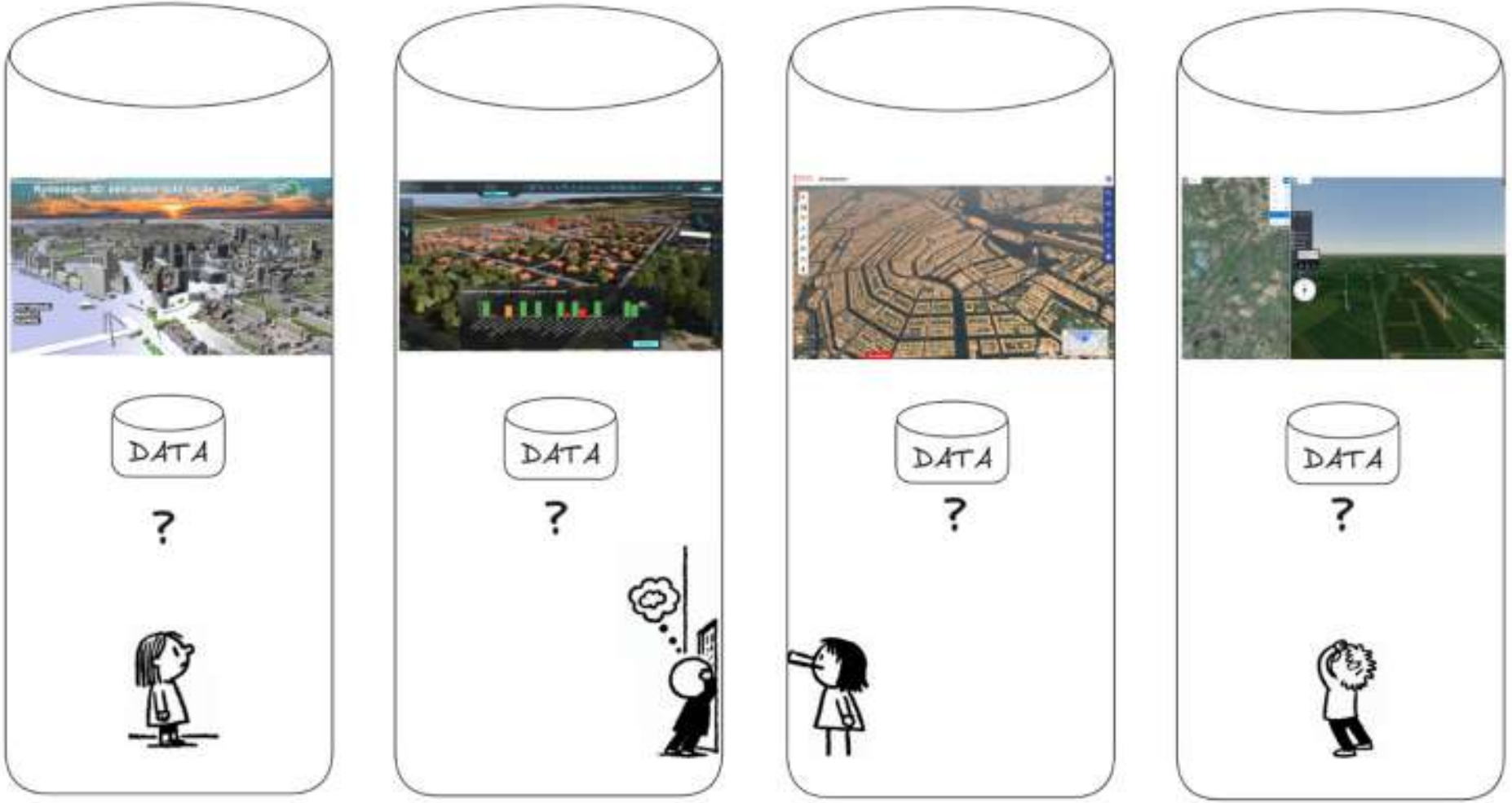
The ‘silo’ problem



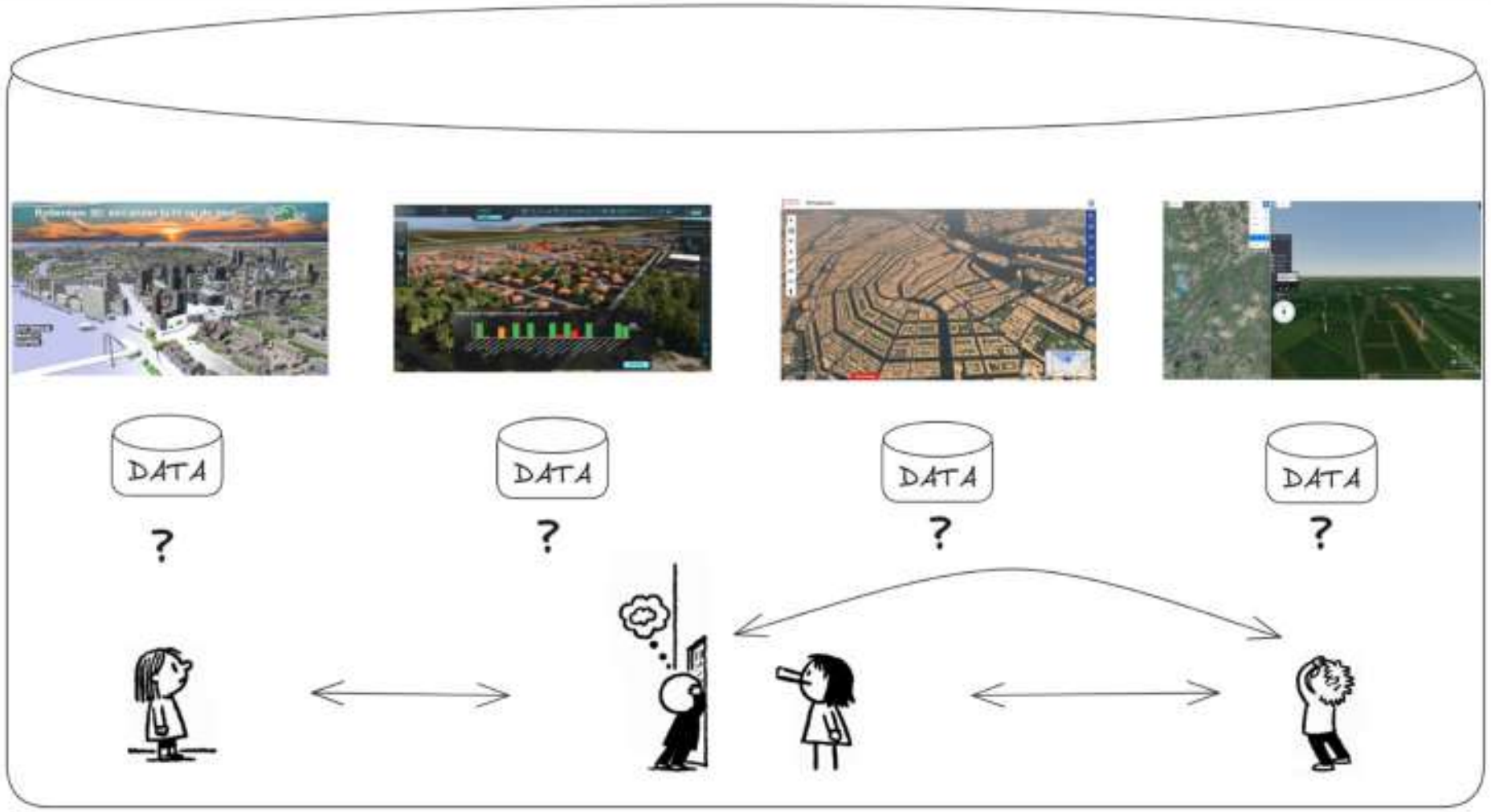
The ‘silo’ problem



The ‘silo’ problem



Tear down these walls



What do we need for that?

Education

Gemeente Rotterdam

Tools & open standards

DMI·ECOSYSTEM

Accelerators

Estonia

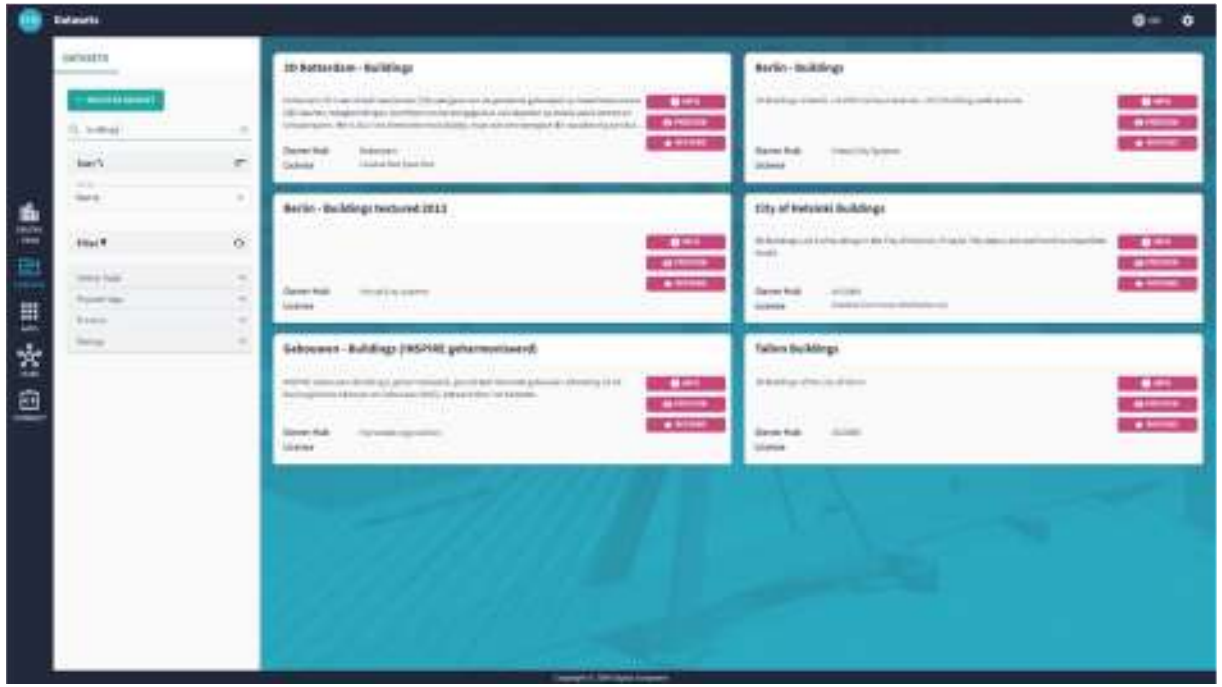
A little story about heat stress

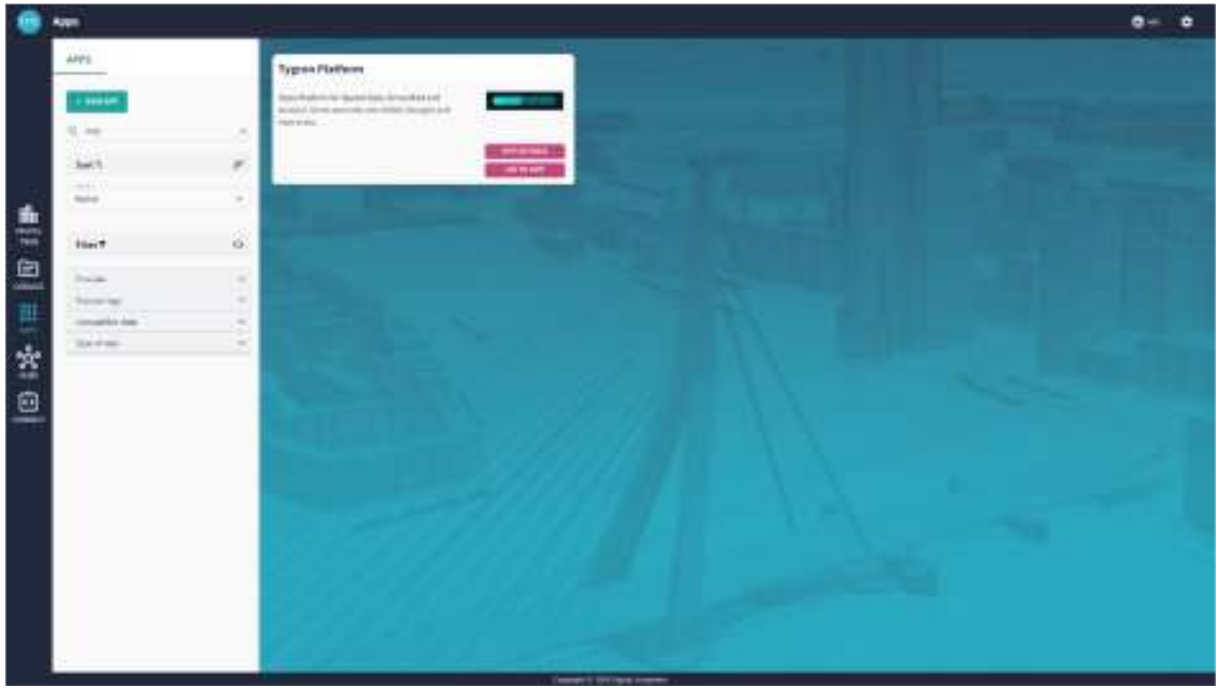
A little story

Let's say you're a city planner and you want to get a first idea of the effects of heat stress on this neighborhood

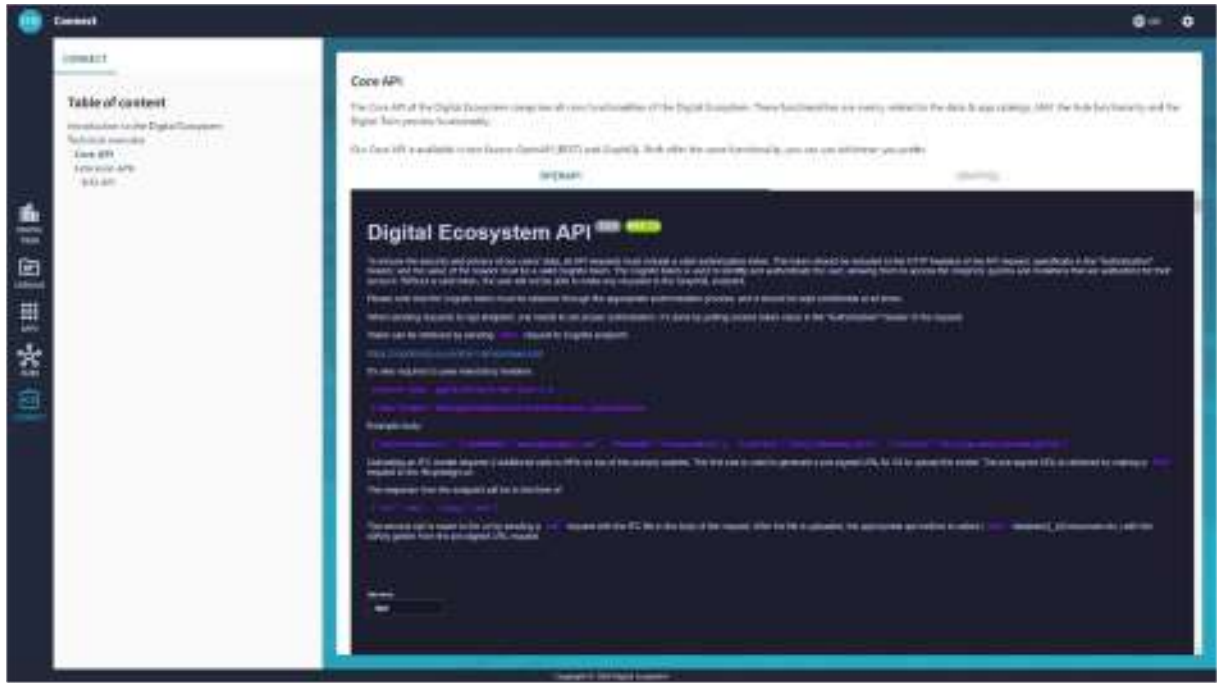
A little story

You don't want to hire an expensive advisory firm, but you want to work with what's already there





Data and app suppliers can connect using APIs and open standards



A little story

The app retrieves all required data through API

Processes it

And provides us with the results

Which you can then share!

Conclusion

Having data available, easily findable and shareable in an open standard is key to enabling immersive tech!

And that's something we need to do together!

So let's connect!

Interested?

Rick Makkinga
Product owner at Future Insight
+31 6 129 866 32
rick.makkinga@futureinsight.nl

Erasmus University Rotterdam

AR for Social Inclusion

Ting Li

Professor of Digital Business at RSM,
Erasmus University Rotterdam

Part of:

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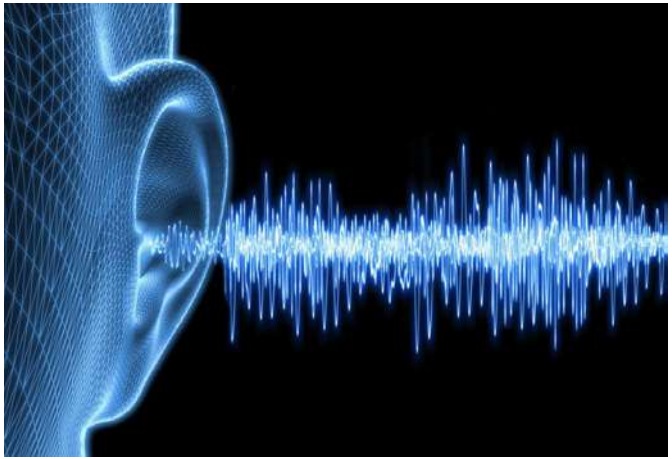
Erasmus Centre for Data Analytics

Rotterdam School of Management
Erasmus University

AR for Social Inclusion

Prof. Ting Li

Brighten the Silent World: How AR Smartglasses Change the Lives of Hearing-impaired



Woman overcomes hearing loss, aims for PhD

By Han Junhong in Changchun and Zhou Huiying | chinadaily.com.cn | Updated: 2022-03-10 10:41

Jiang Mengnan reads a book in the library at Tsinghua University in Beijing. [Photo provided to chinadaily.com.cn]

Awarded for “Person Touching China” 2021

It is not easy …

- Obstacles in their daily communication and avoidance of social interaction means
  - They may have less access to resources
  - They may get excluded as equals of society
  - Their personal value or identity may not be accepted
- A common stereotype: hearing-impaired people are mute, even though most of the hearing-impaired can actually speak
- What is worse, such social injustices may induce them to further avoid communication and hurt their psychological well-being

A Global Challenge: Hearing impaired

- Global challenge (WHO, 2021)
  - Currently **more than 1.5 billion people** (nearly 20% of the global population) live with hearing loss
  - 430 million of them have disabling hearing loss (require hearing rehabilitation)
  - By 2050: 2.5 billion people are projected to have some degree of hearing loss and at least 700 million will have disabling hearing loss
  - Hearing loss: >20 dB: mild, moderate, severe, or profound

Current Solutions of Hearing Aids

Sign Language

Hearing AIDS

Artificial Cochlea

LCD Tablet

Speech-to-Text APP

How about using AR?

CONSUMER TECH

AR For Hearing Is Making Strides; AR Glasses Are Still A Far Off Dream

Tim Bajarin Contributor ⓘ

I write about tech industry's impact on the PC and CE markets.

Follow

Mar 16, 2021, 10:00am EDT

New!

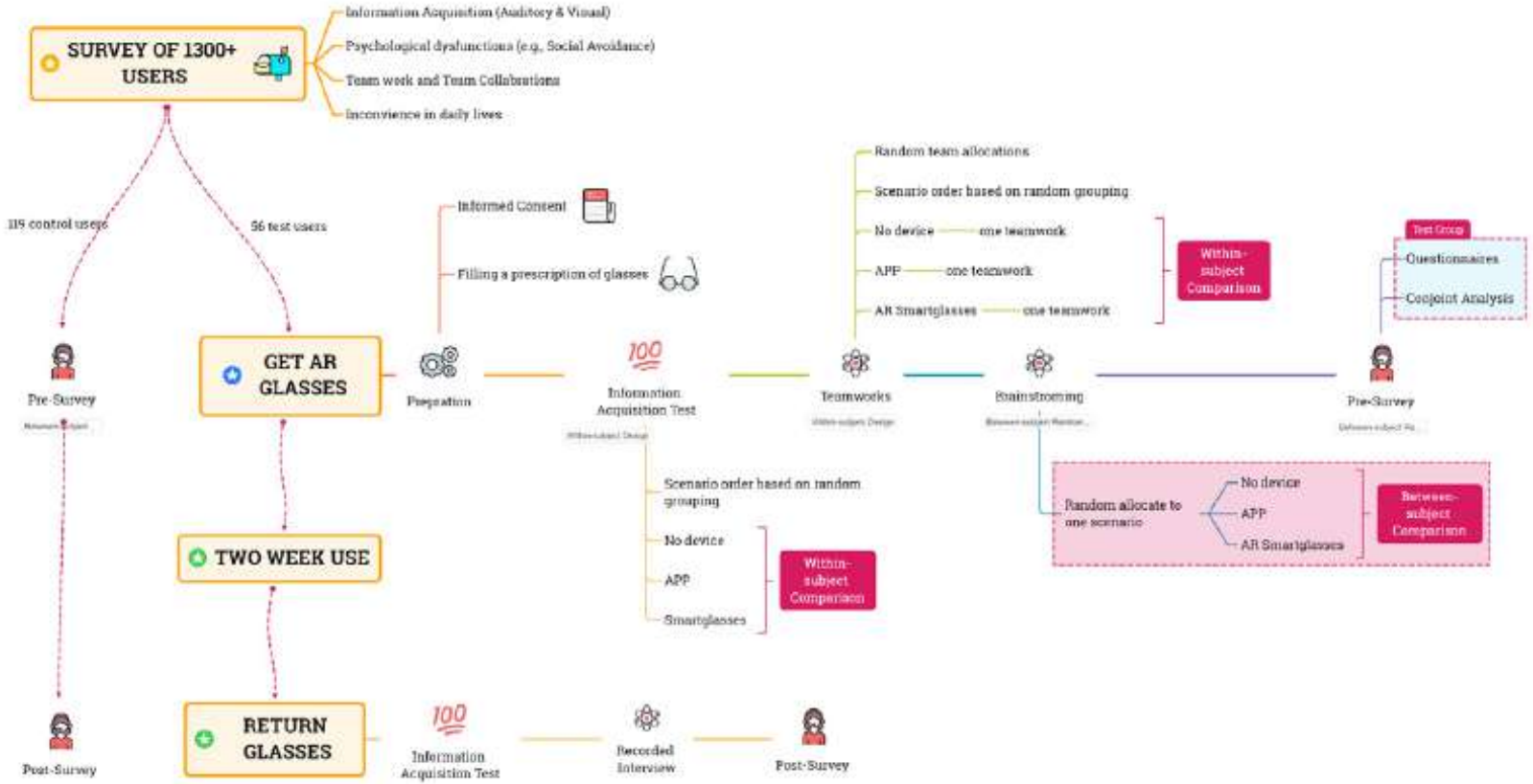
Are they interested?

- Background survey: pain points and needs
- Urgent need is confirmed by a background survey of 1397 hearing-impaired
  - High interests (73% are interested in such a product)
  - High willingness to purchase (60% are willing to buy)
- High willingness to use in the following scenarios
  - Classroom or Learning (85%)
  - Meeting or team works (76%)
  - Social communications (73%)
  - Work (72%)
  - Entertainment (71%)

How about Google Glass?

"When Google Glass just came out, we were very excited. We were very disappointed when Google Glass failed. We hope that some smart glasses can be available on the market to help deaf people for their hearing loss."

Research Procedure



Findings

Short term

Individual **Group**

Long term

Information Acquisition

- AR improves auditory information acquisition (+22.4%)
- AR keep visual information, while APP decreases visual information (-7.5%)

Team Performance

- Collective Intelligence (brainstorming ideas)
- Information exchange tasks (prediction accuracy)
- Teamwork efficiency (understand, correct)
- Teamwork activeness (leading, relax, active, confident)

Psychological Changes

- Reduce communicative avoidance
- Satisfy the psychological needs (autonomy, relatedness, competence)

Social Lives

- Help daily information acquisition (e.g., train station, airport, hospital, …)
- Improve learning and work efficiency
- Facilitate social communications with friends, colleagues, and families.

Future Directions

"Immersive Tech Lab"

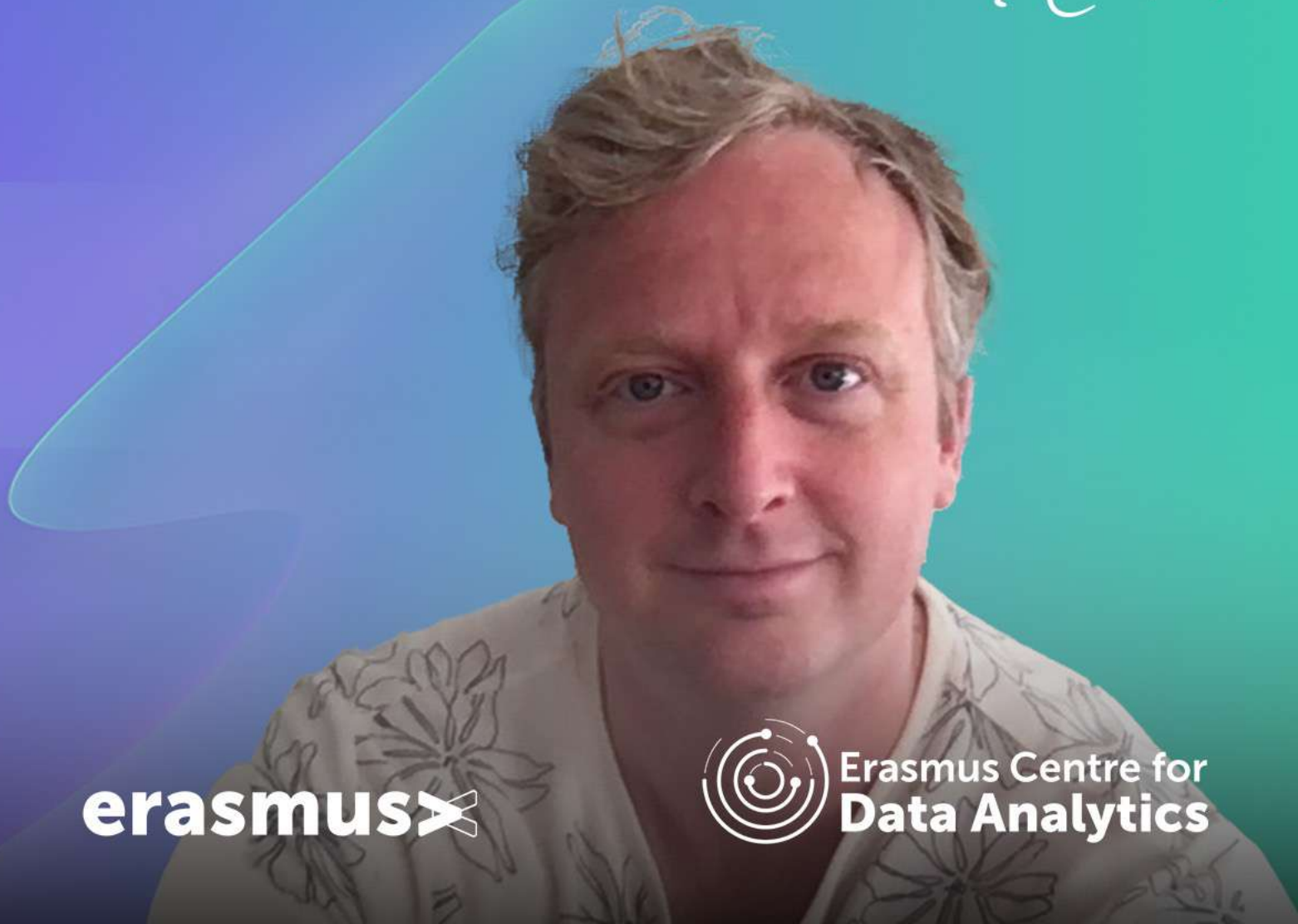
- Convergence Grant
- EUR 1.2 million
- 4 PhDs over 4 years

Erasmus University Rotterdam

Anatomic Insights in 3D Virtual Reality

Mike de Boer

CTO at MedicalVR



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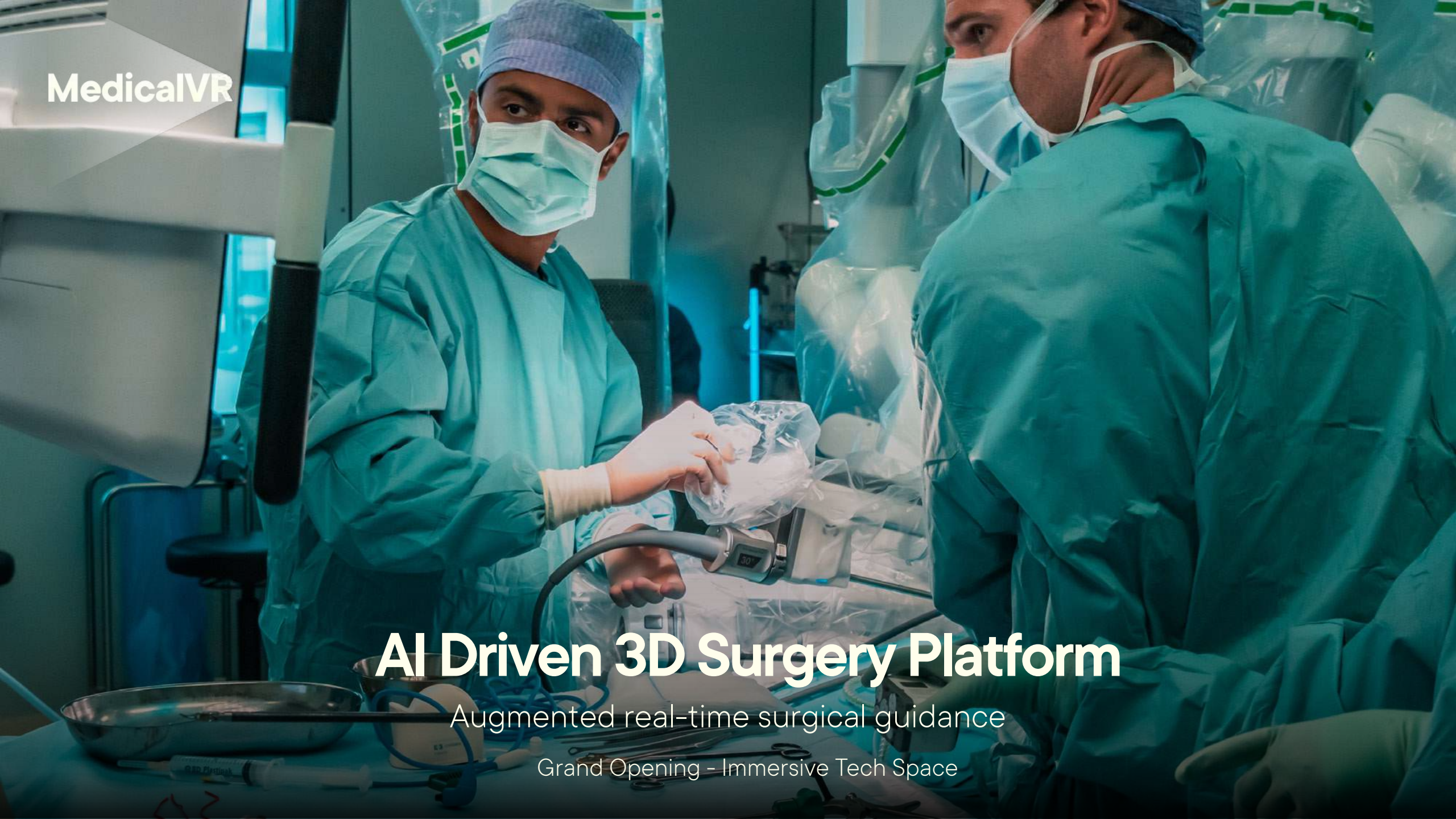


AI Driven 3D Surgery Platform

Augmented real-time surgical guidance

Grand Opening - Immersive Tech Space

Team - Mike de Boer

- Startups
- Mozilla
- StreamYard
- My role @ MedicalVR

Meet the Team (currently 6 FTE)

Excellent engineering, quality and executional team

Dr. Amir Sadeghi – CMO (Medical)
MD, PhD. Cardiothoracic Surgery Resident Erasmus MC,
Co-inventor PulmoVR
EACTS innovation award finalist

Mike de Boer - CTO
9 years at Mozilla Firefox
Multiple startups in Amsterdam
Was lead dev during exit to AWS

Chris Hordijk - CEO
Founded MedicalVR in 2018
6 years of Marketing & Sales
experience at Unilever

Frank de Boer – Unity 3D
Msc. Computer Science
+10 years Unity 3D experience

Alper Tuzcu – Computer vision
UvA student engineer

Priya Prahbaker – AI Student
Msc. Leiden University
Indian Space Center

Dr. Samy Ado Seada – Sr. AI engineer
PhD Kings College
Post doc radiotherapy Erasmus MC

Tjerko Kieft (MSc) – Engineer
Msc. Computer Science

Quinten Mank (MSc) – Medical Segmentation Expert
PhD-candidate Erasmus MC & MedicalVR
Bridging the gap between clinic and development

Madhura Swapna Marri – QA/RA Manager
Bsc. Electrical engineering
+13 years product & software development

Dr. Timothi van Mulder – Clinical Study Manager
PhD Medical Science
+8 years quality and operational

Key hires after raise

Chief Compliance Officer (1FTE)

Prior to formally launching technology in the EU and US, regulatory approvals are of paramount priority. The role entails fitting our proprietary technology within regulatory frameworks and ensure quality best practices throughout a growing organization, top to bottom.

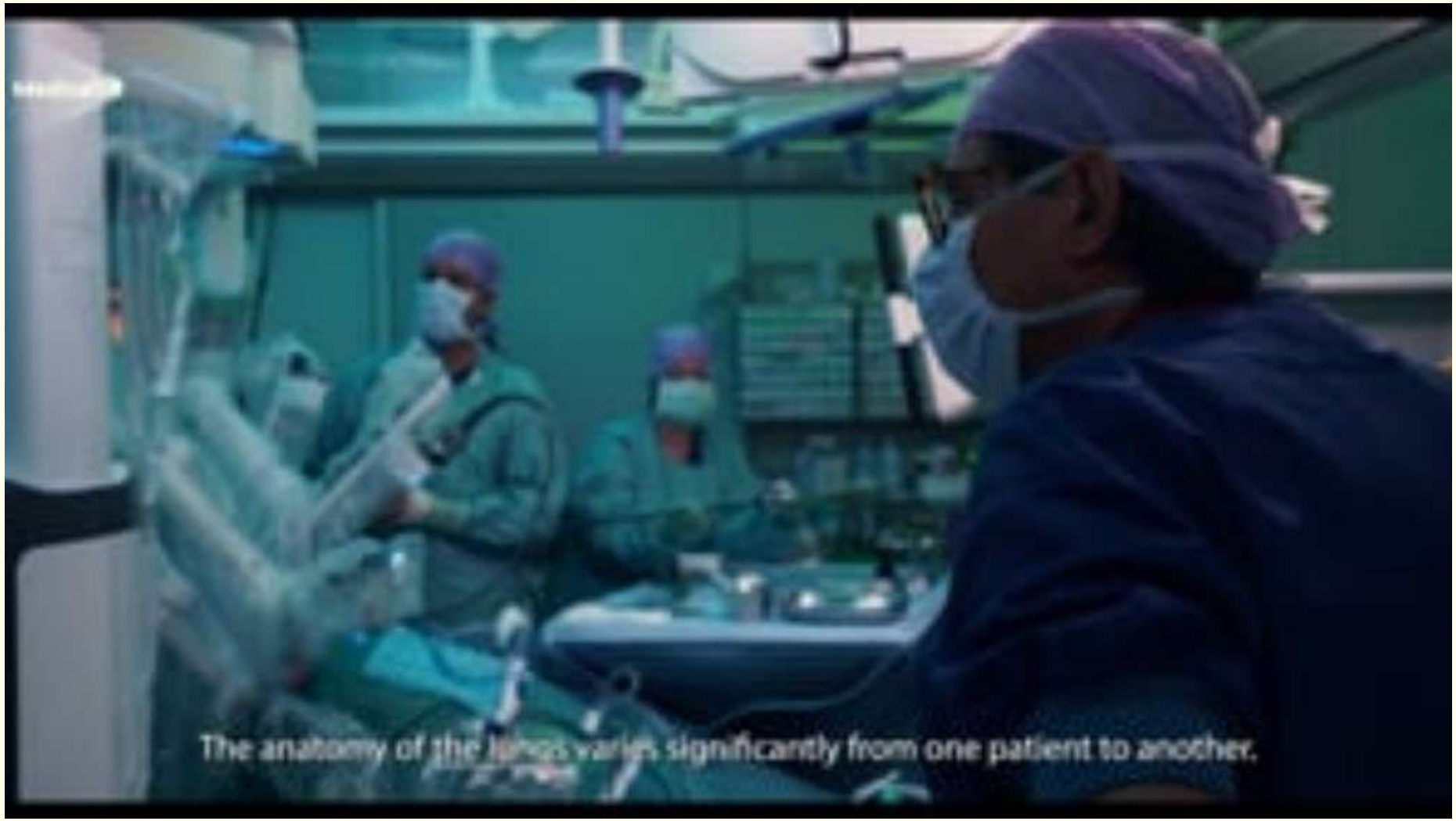
User Experience Designer (1FTE)

To date, the team has mainly been focusing on the backend and less on User Flow and experience. Updated designs and experience will boost usability and a unified brand experience.

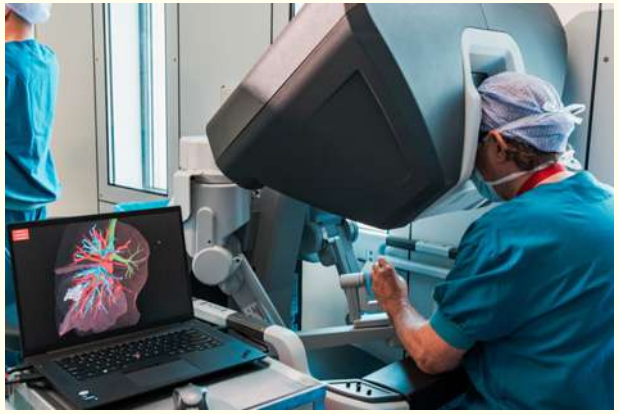
Computer vision and AI engineers (3.0 FTE)

By effectively doubling the size of our Engineering team, we can push our developments to be top notch, compliant and innovate faster.

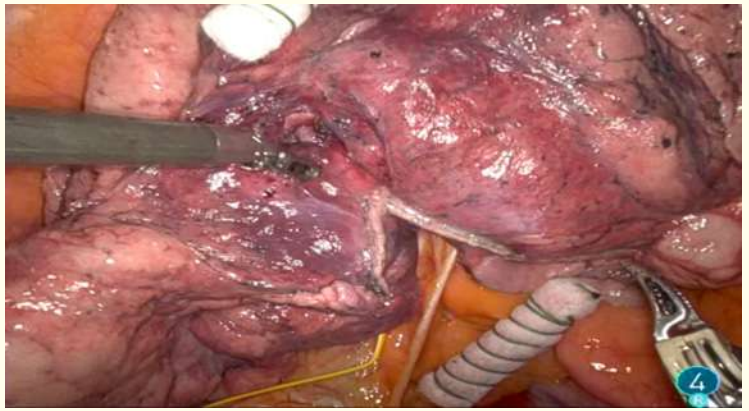
What we do


The anatomy of the knee varies significantly from one patient to another.

World’s first Augmented Reality guided robotic lung cancer surgery performed October 2023 – background information in appendix

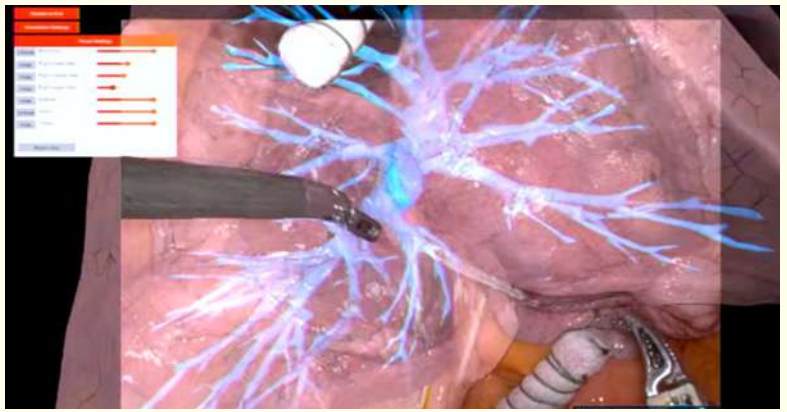


Current dynamic model connected to robot



Surgical view without AR overlay

Team alignment of surgical plan and steps



Surgeon’s view with real-time Augmented view enabled by MedicalVR’s deformable technology

Erasmus MC
Universitair Medisch Centrum Rotterdam

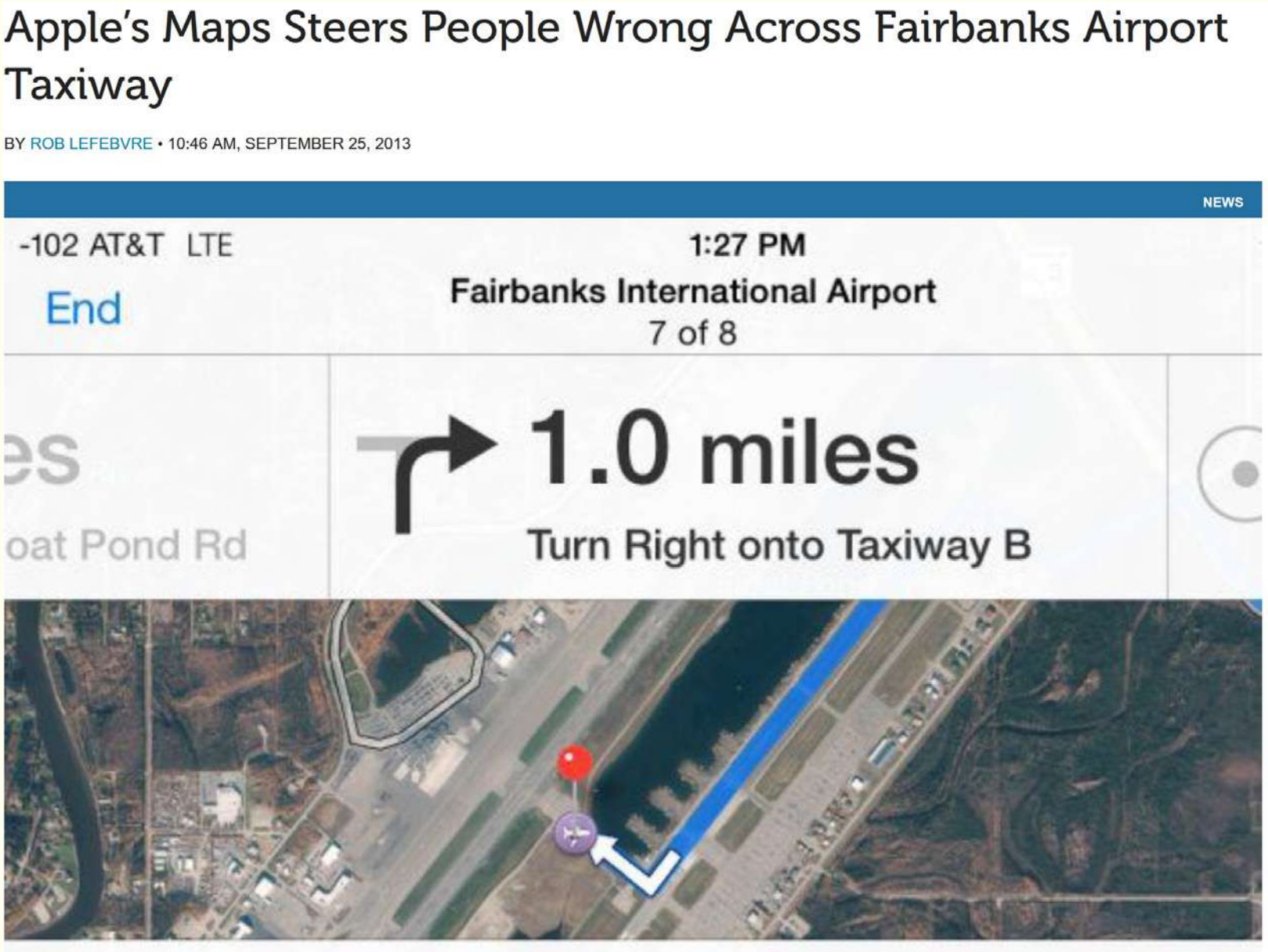
NVIDIA

ORSI ACADEMY

MedicalVR

Surgical navigation

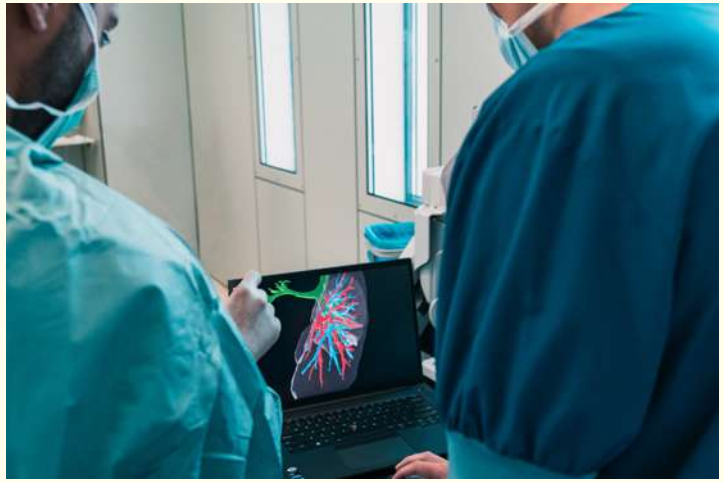
- Remember Apple Maps launch?
- It’s all about data
- Who’s in the driver’s seat?



Solution

MedicalVR: AI Driven 3D Surgery Platform

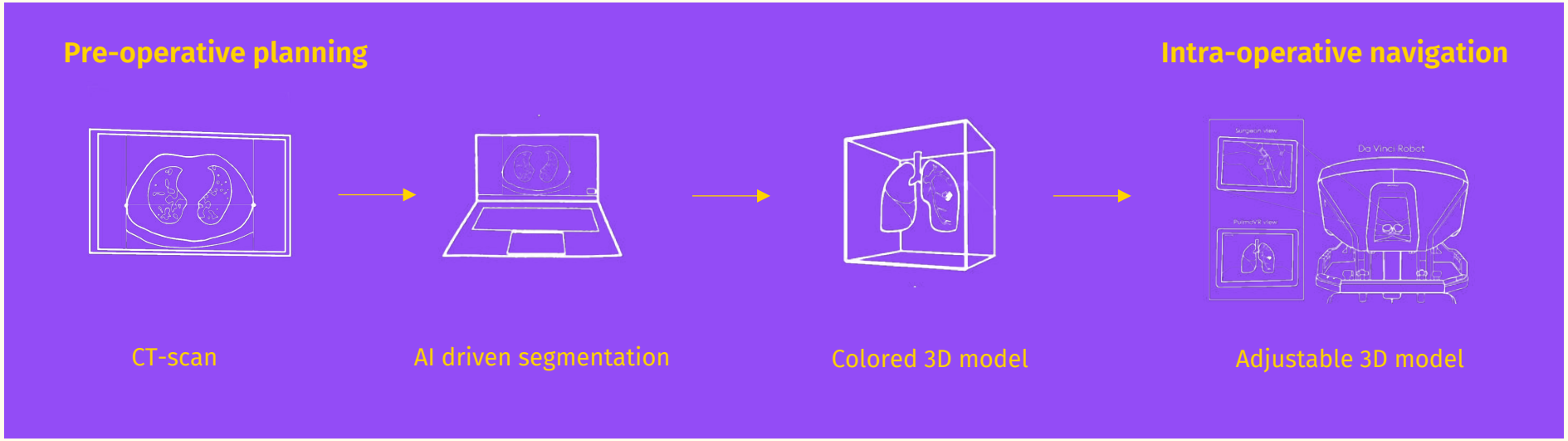
Pre-operative planning



Intra-operative navigation

1. **One dedicated software suite:** transforming patient-specific CT-scans into realistic 3D-models on the fly
2. **Aiding surgeons:** by providing 3D-models for planning and executing complex surgeries or informing patients
3. **3D-models:** available pre-operatively in VR, online or on a workstation, and intra-operatively in 3D
4. **Integrated throughout the entire workflow:** accessible through PACS, visualized in the different imaging modalities

Uploading, downloading, visualizing and adjusting CT scans and 3D models is now a smooth and easily accessible process



Surgeon exports CT scan from PACS (imaging system)

Initial focus on lung surgery, urology and bariatric surgery will be added to the product pipeline as new surgical domains

Surgeon logs in to MedicalVR ISO27001 certified cloud environment

Uploads CT scan, AI driven algorithm creates 90% accurate segmentations of arteries, veins and airways within 7 minutes

Surgeon reviews 3D output of segmentation in the cloud

3D models can be downloaded to a workstation or other technology that supports MedicalVR Viewer

3D-models can be connected to robot surgery system.

3D models are adjustable to the patient anatomy in form and shape. Providing exact anatomic insights throughout the whole surgery

+200 complex lung surgeries, have successfully been planned, guided and performed, leveraging MedicalVR's proprietary surgical planning platform

Clinical multicenter study at nine Dutch leading hospitals proving benefits of 3D technology in pre-operative planning (N= >100).

12 publications and case studies in renowned journals like **Annals of Thoracic Surgery**, **JTCVS Techniques** and the **European Heart Journal**. The publications highlight the added value of MedicalVR through significant changes in surgical planning (>50%) compared to conventional surgical planning leading to improved surgical planning and safer surgery

"Selected for animated video abstract in the Annals of Thoracic Surgery"

"Mentioned as the most cited (previous 3 years) article in JTCVS Techniques"

Questions?

mike@medicalvr.eu

Erasmus University Rotterdam

Official Opening of the Immersive Tech Space

Ed Brinksma

President of the Executive Board
of the Erasmus University Rotterdam

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Time to immerse yourself in tech!

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