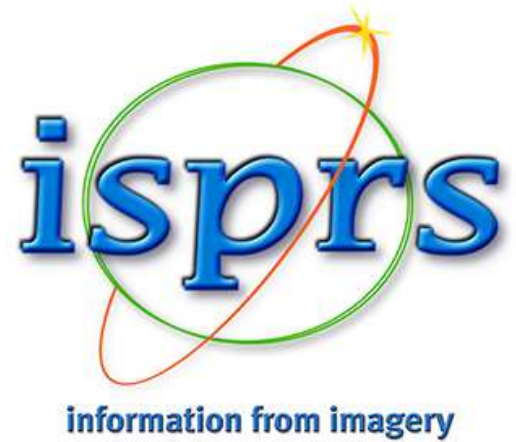


Geotechnology and innovation course IN the METAVERSE

Università degli Studi di Udine



UNIVERSITY OF CALGARY





University of Udine

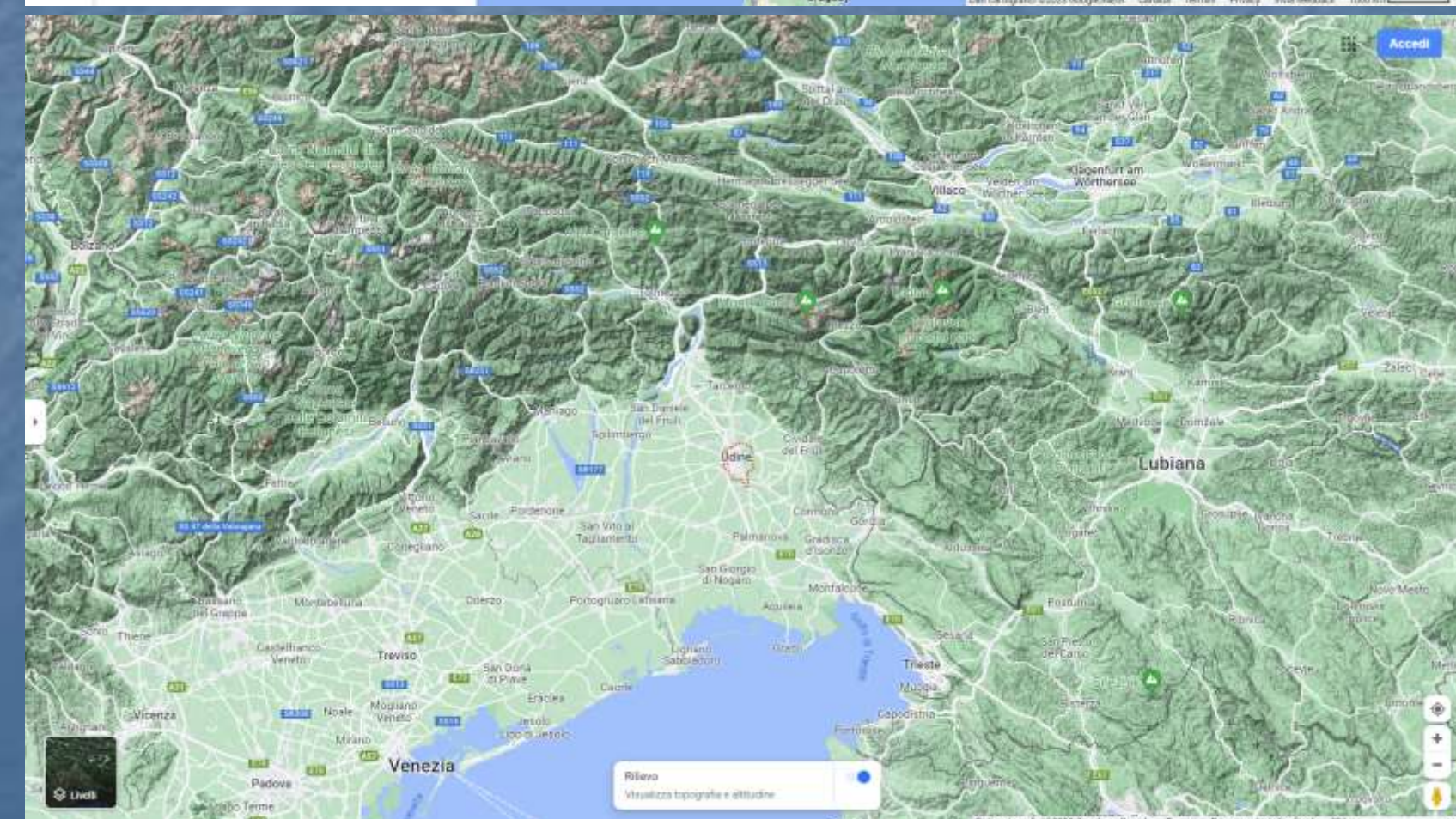
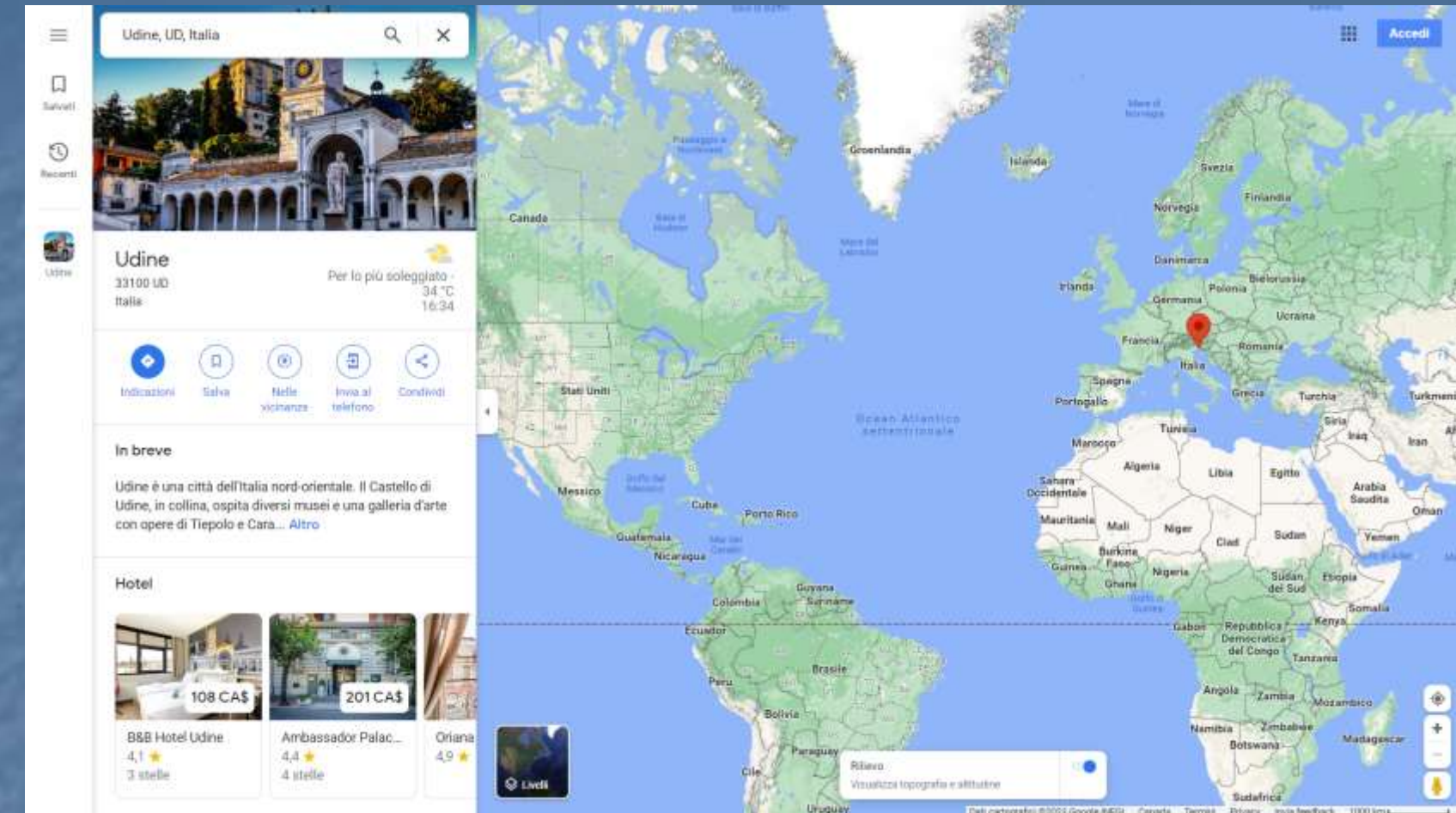
Degree in Mathematical Science of and information an in Computer Science (late 80's)

1997 founded the first Italian GIS company (Geomarketing, Fleet Tracking, Route Optimization, Remote Sensing, land use changes, ...)

Associate Professor of GEOtechnology and Innovation at the University of Udine

Delegate of the Rector for Sustainability

Shareholder of AiperTech, a SPINOFF of the **GEOmatic LAB** and the **Artificial Intelligence LAB** of the University of Udine

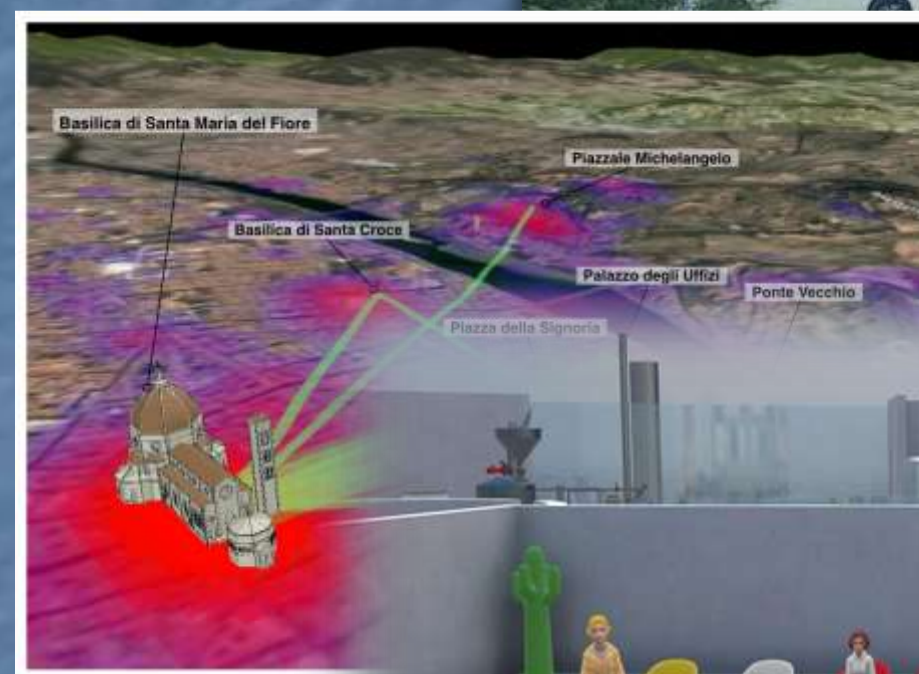




GEOtechnology and Innovation Course

Apart from GEOtechnology topics
emerging technological trends in the last 10 years:

- Drones
- Lidar
- VR/AR and Field Service
- Artificial Intelligence
- CellPhone GEOBigData
- And last year Metaverse



Virtual Reality



What's METAVERSE

“You can think of the Metaverse as an immersive Internet: instead of just viewing content, you're inside it”

To be defined METAVERSE a platform:

- 3D virtual environments
- Immersive
- Interactive
- Persistent
- Interoperable

To ENTER the METAVERSE

- Avatar
- Device





Metaverse and Training in UDINE

- Last year a lesson ON the METAVERSE technology, use cases, new professions
- This year
 - a lesson ON the METAVERSE technology, use cases, new professions
 - a lesson IN the METAVERSE on one of the topics of the course (GPS technology and applications)
 - A 7 lessons course ON the METAVERSE IN the METAVERSE
 - Students of any year and any faculty
 - 50 places booked in 2 hours
 - 95% presences at the lessons



Metaverse Course

To organize a course in the METAVERSE you need

- a METAVERSE platform
- MetaSpaces and MetaRooms for the lessons
- the digital twins
- the AVATAR management tool



<https://youtu.be/YmZZpnWak1M>

<https://youtu.be/DsPiNqL36dM>

We found TechStar a, Metaverse enabler company, with their MetaPresence platform

- they configured MetaRooms and Metaspaces for the different lessons (fornitures, screens, digital twins, animations,)

I searched and tested many platforms but must say that, for training purposes, I haven't found anything with such performances





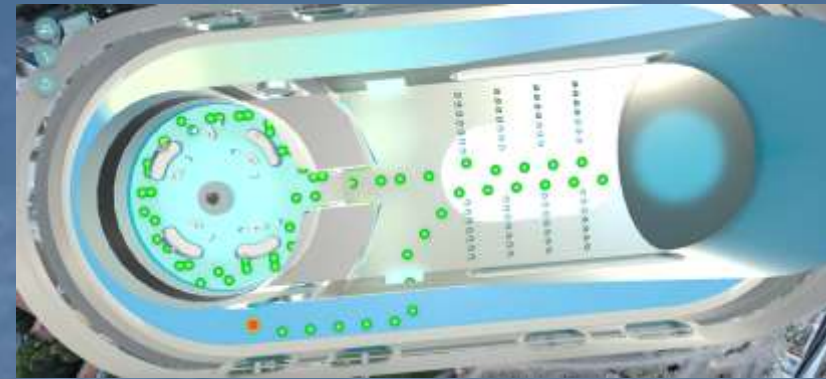
Metaverse effects on STUDENTS

- Huge increase in the average presences during the lessons (60%→95%)
- Increase of interaction during the lessons probably because "you don't show our face" and you are represented by our own avatar
- AVATARS depending on the mood of the day
- in the last year more than 50% of my thesis are METAVERSE related
- interesting proposals of METAVERSE applications for the end of course group projects



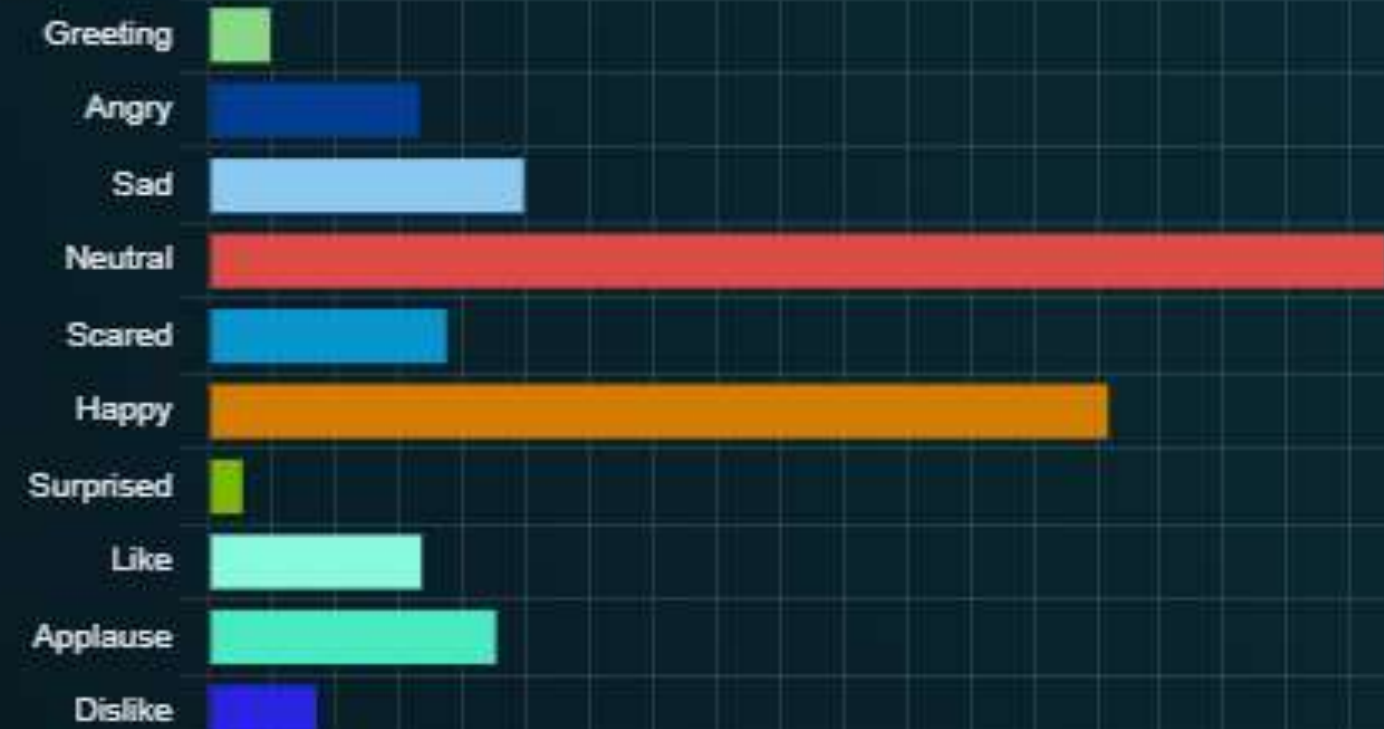
Dashboard

- Users timeline
- Actions/Reactions
- HeatMap
- Item Focus (video, digitaltwin, dress, ...)



Reactions

The Reactions chart shows the total number of reactions, made by users during a MetaMeeting, breaking them down by type.

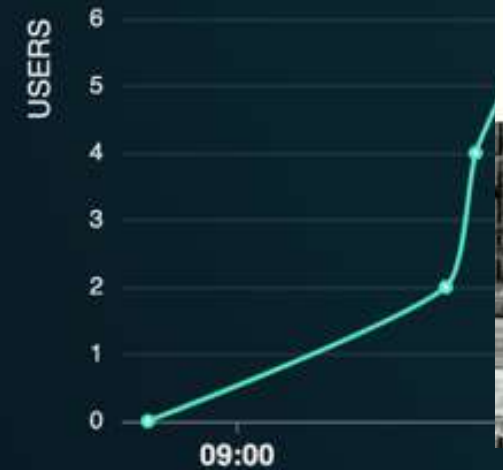


Items Focus

In the information tracked, the time in

User

Screen_logo Whiteboa



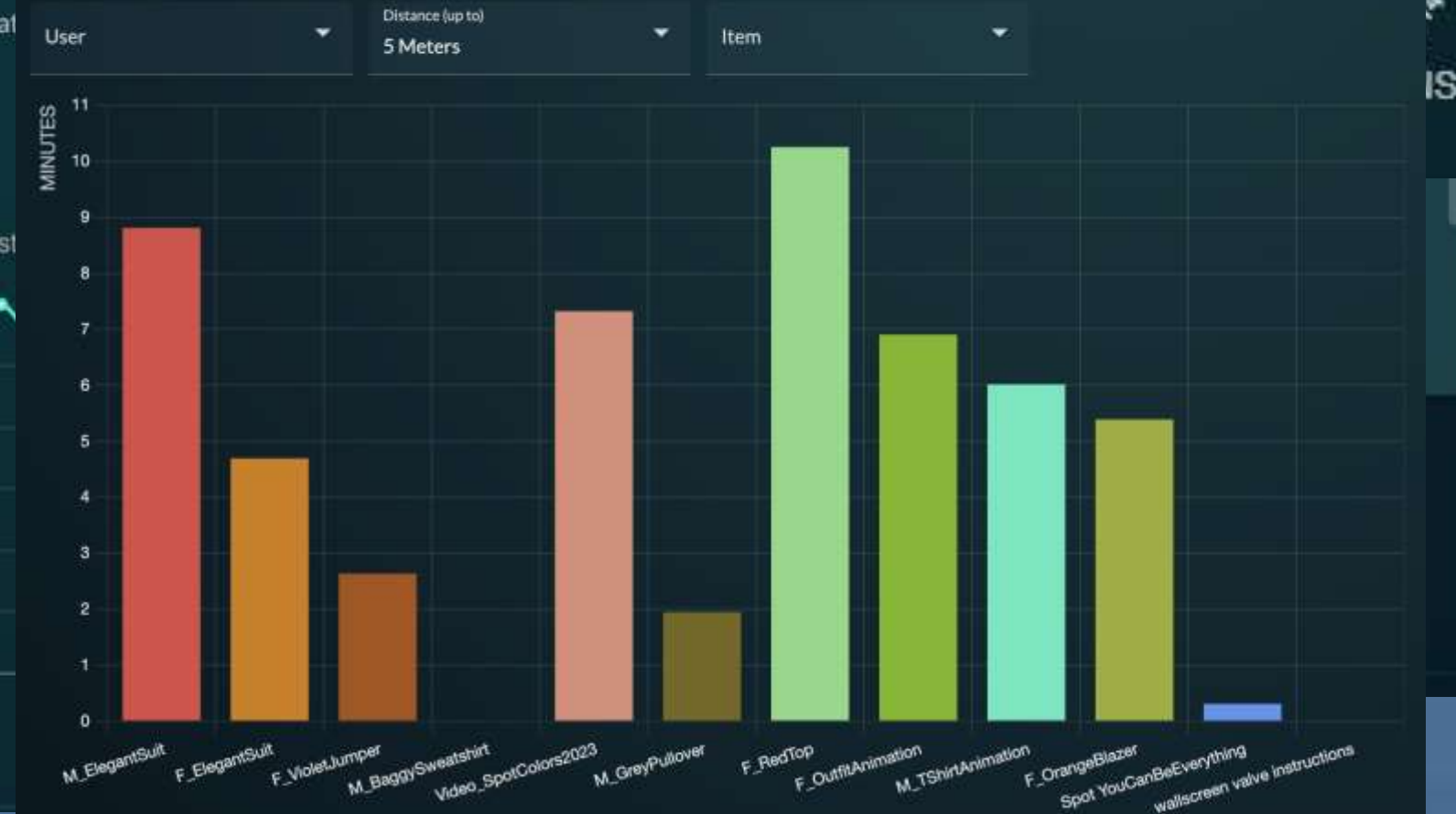
ficant informat

Christ

10:00

Items Focus

In the information tracked, the time interval in which there was focus, the distance between user and object in focus, and the object in focus emerge as significant information.





Dashboard

- Interaction among users
- Attention

Percentage Time Spent Talking By User



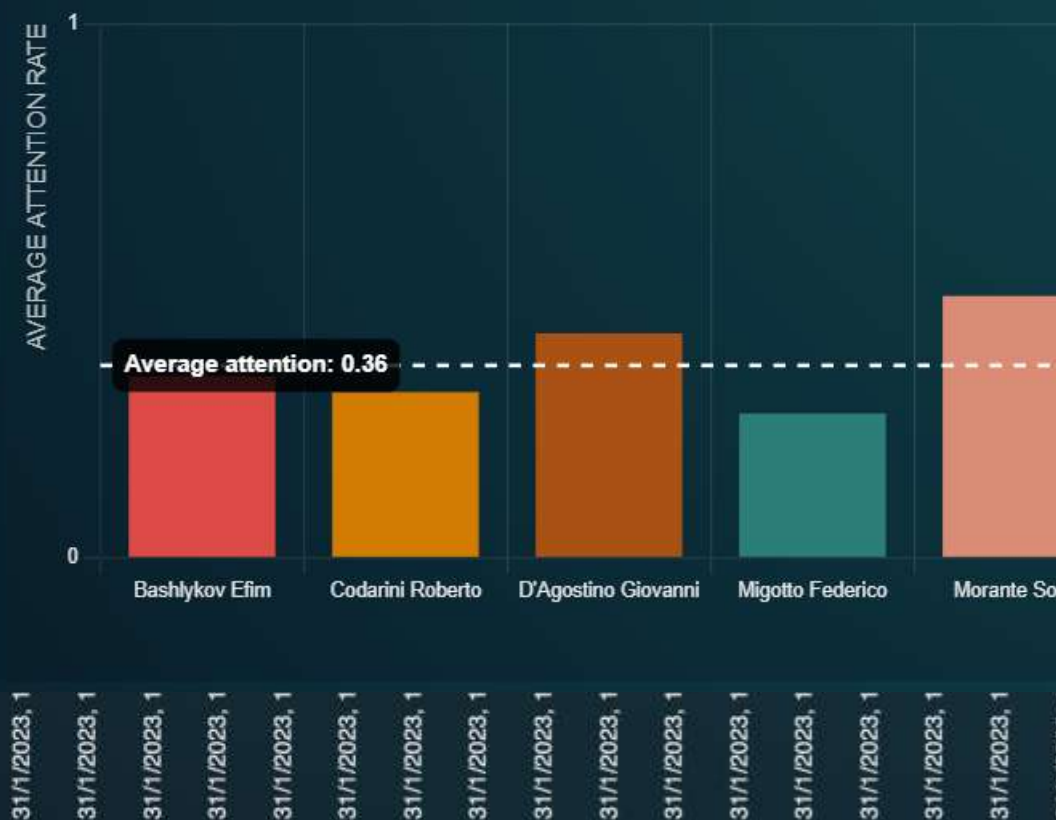
Private area usage

(Press "SHIFT" key to zoom).

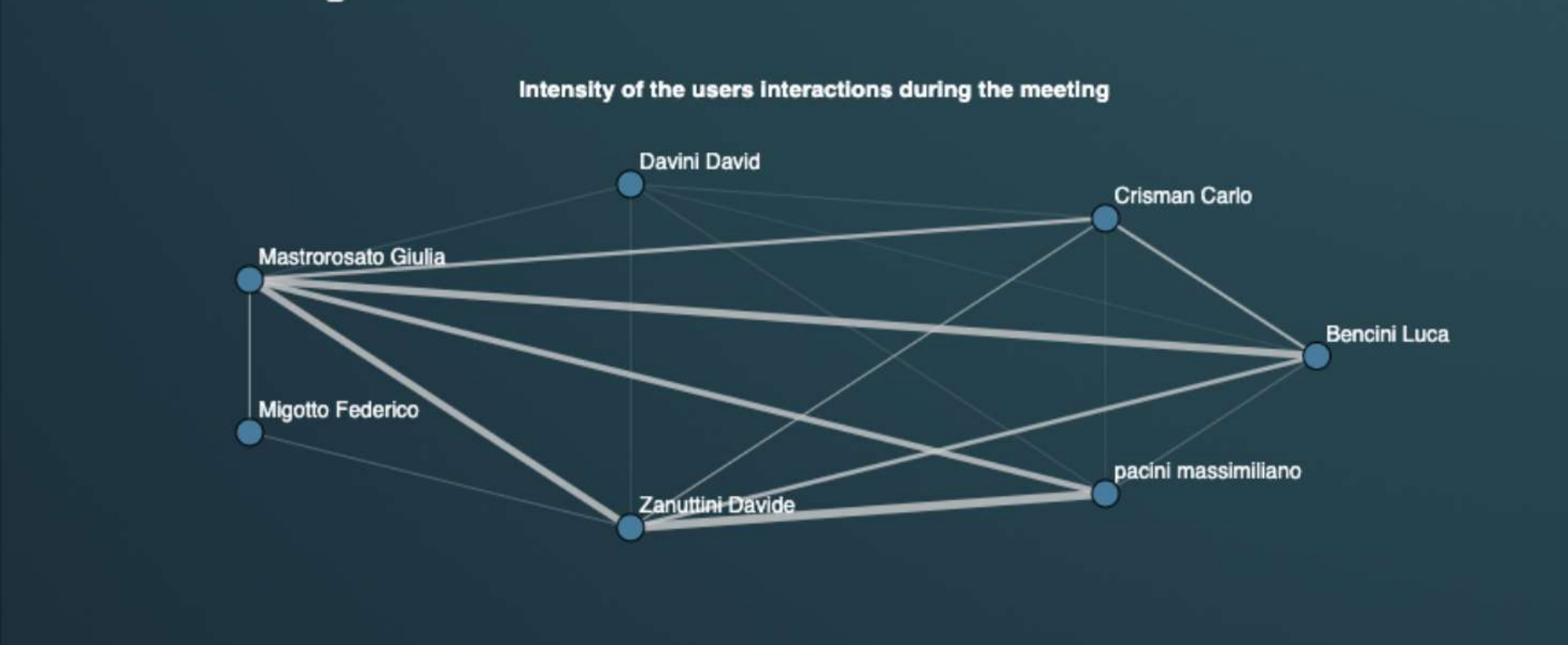
Users Centrality During The Meeting



Average attention rate per User



Interactions Among Users



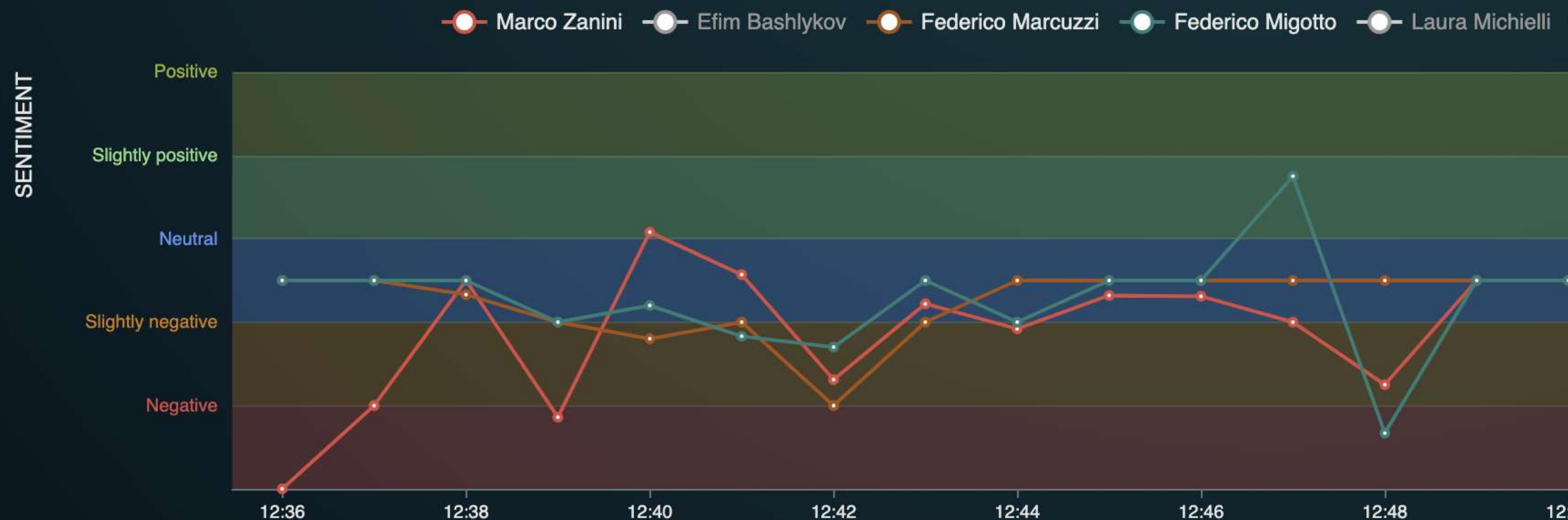


Dashboard

- User attention trend
- Sentiment distribution
- Real time survey

Sentiment distribution

(Press "SHIFT" key to zoom).



User's attention trend

(Press "SHIFT" key to zoom).



<p>Engaged participants</p> <p>9 out of 9 Slido participants engaged with polls or Q&A.</p> <p>Participants asking in Q&A: 7</p> <p>Participants up or down voting in Q&A: 1</p> <p>Participants voting in polls: 9</p> <p>Engaged participants score: 100%</p>	<p>Q&A engagement</p> <p>7 out of 9 participants asked a question or voted in Q&A.</p> <p>Anonymous / all questions: 1 / 16</p> <p>Answered / unanswered questions: 3 / 13</p> <p>Upvotes / downvotes: 1 / 0</p> <p>Q&A engagement score: 78%</p>	<p>Poll engagement</p> <p>9 out of 9 Slido participants voted in a poll.</p> <p>Total poll votes: 65</p> <p>Polls with responses: 9</p> <p>Average votes per poll: 7</p> <p>Poll engagement score: 100%</p>
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TIME



Metaverse and teacher

This dashboard is giving very interesting feed backs on

- how to improve educational material (slides, videos, ...)
- How to choose the 3D virtual environment depending on the topic of the lesson
- How to improve the organization/sequence of topics and modules
- How to manage the pace of lessons (intervals, voice, gesture, ...)

In EUROPA the first call to finance research projects to build **CITIVERSE CLOUD EU** which is expecting GEOtechnology + METAVERSE experts to collaborate (25 million USD per 8-10 projects)

Focus on:

- smart communities
- sustainable mobility
- climate resilience
- energy flows
- zero-pollution



UNIVERSITY OF
CALGARY



THANK YOU

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