ForRest: Leveraging Forest For Rest in VR

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Background
VR Technology and Neurodiversity

In recent years, digitalization has been utilized for a variety of purposes globally, particularly to support neurodiverse individuals. The term **'neurodiversity'** refers to the variation in neural systems among people, highlighting both the strengths and challenges experienced by individuals with neurological differences [1]. **Virtual Reality** leverages computer technologies to create simulated 3D environments that are highly visual, immersive, and interactive [2].

Storyline

Joie is a vibrant and creative individual known for her unique ability to think outside the box and tackle challenges with an innovative mindset. As she prepares for an important exam, Joie recognizes the need to channel her strengths to stay focused and calm.

Feeling slightly overwhelmed, she turns to the *Muse* headband, a trusted tool that helps her to manage the personal energy effectively. *Joie* pairs this with her favorite music, which naturally enhances her concentration. The *Muse* headband provides real-time biofeedback through EEG technology, offering her insight into her mental state. Whenever her mind starts to wander or her anxiety begins to rise, the music subtly adjusts, guiding her back to a state of calm and focus.

Joie finds herself immersed in the *ForRest* virtual environment, a serene and soothing digital space crafted to support her creativity and resilience. In this virtual forest, Joie feels at ease, reconnected with her inner calm and able to sharpen her focus, allowing her to approach her exam with renewed clarity and confidence.

Methodology & Project Implementation
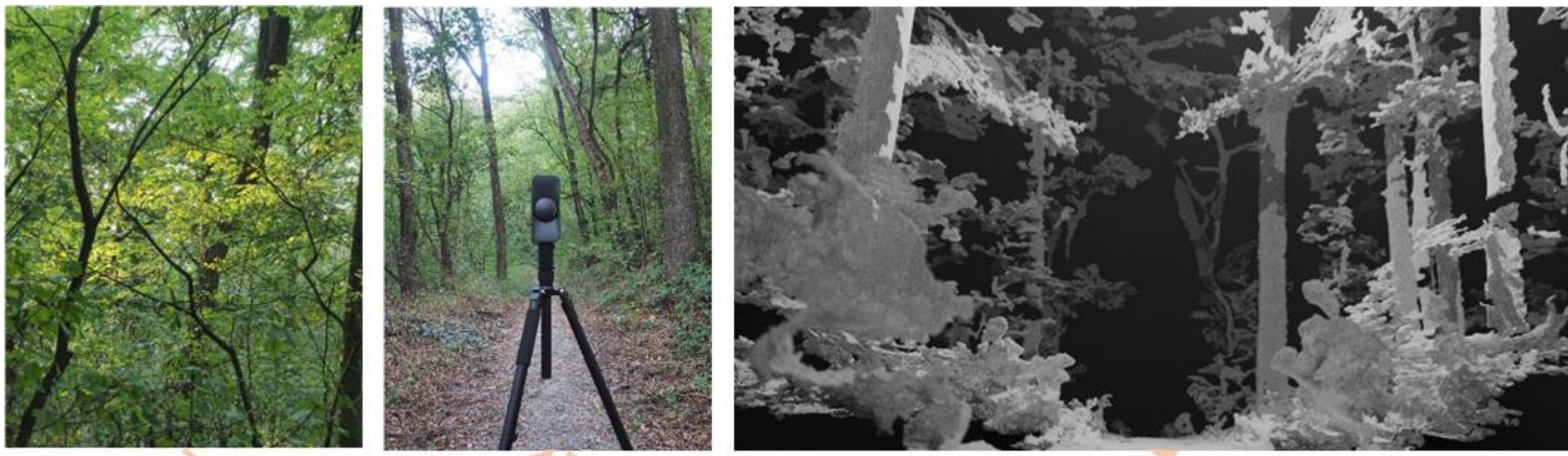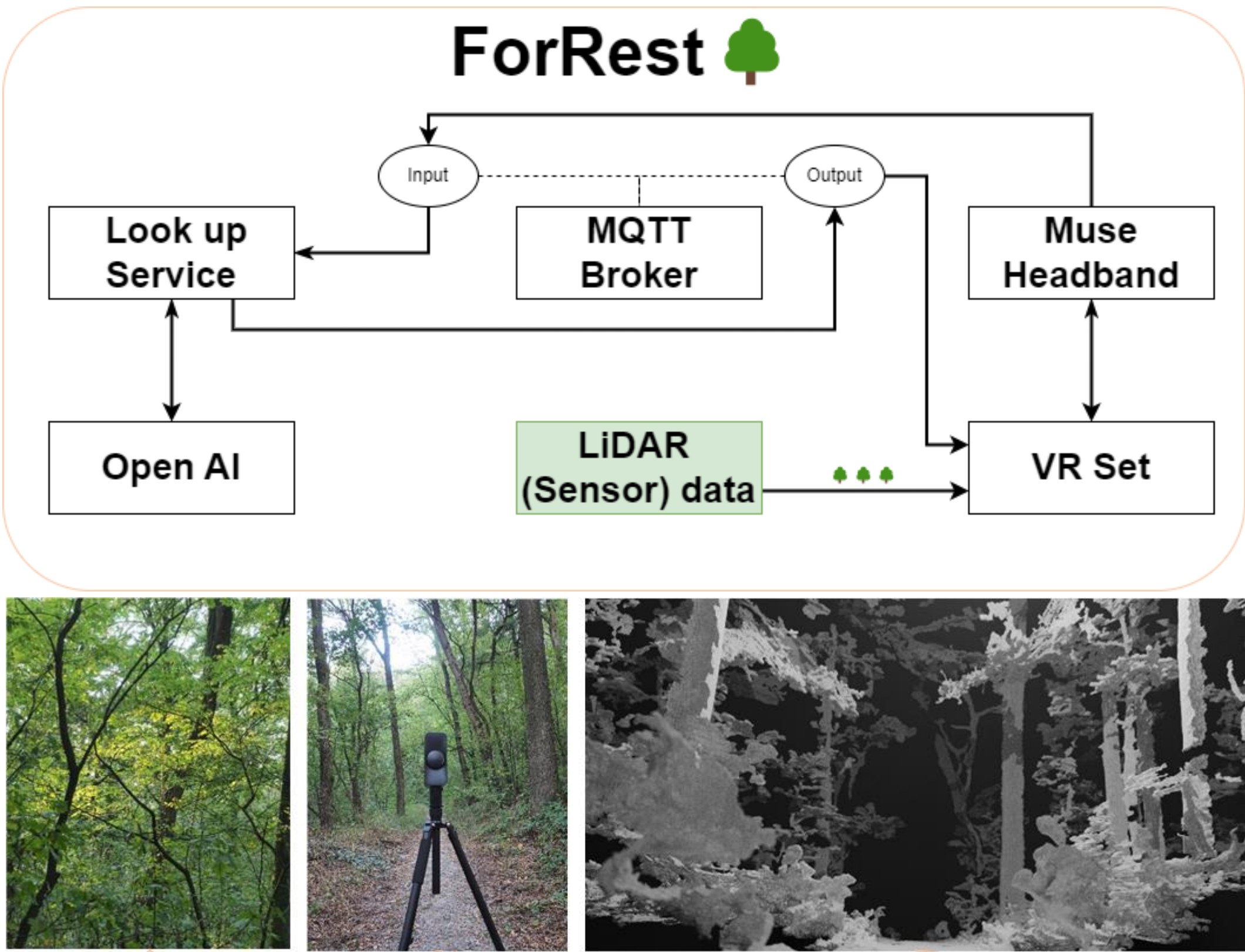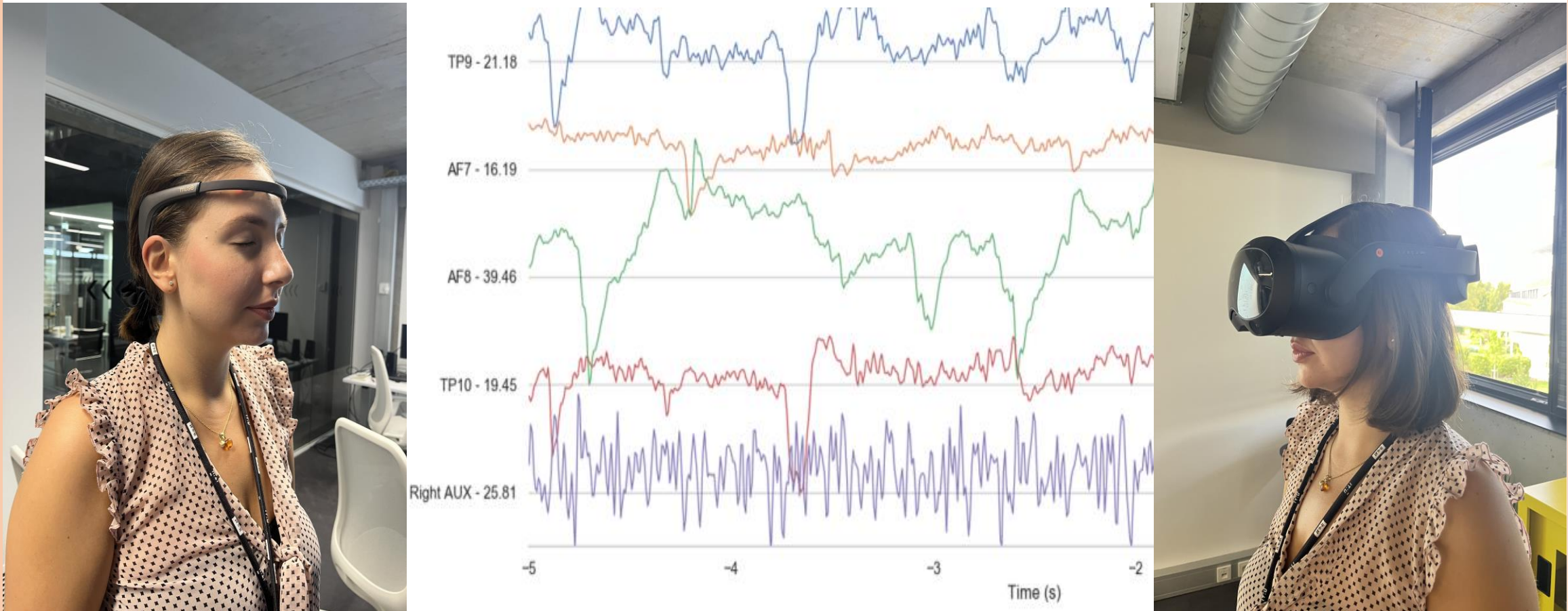
Interdisciplinary Contributions
of Each Team Member

Angela Lombardo Pontillo PhD in Teaching and Learning Sciences, University of Macerata – **Theoretical Framework & Sound Setup**

Maryam Khoshkhooy Titkanlou PhD in Computer Science and Engineering, University of West Bohemia - **Muse Headband Biofeedback Processing**

Saqib Rasool Research Fellow in Electrical and Computer Engineering, Aarhus University - **AI Look-up Service Development and Interaction with AI and Website**

Sonia Litwin MEng Biomedical Engineering, Royal College of Art Engineer, RCA - **VR Environment Setup with Point Clouds**

Reference

[1] Emmanuelle Walkowiak. 2021. Neurodiversity of the workforce and digital transformation: The case of inclusion of autistic workers at the workplace. *Technological Forecasting and Social Change* 168 (2021), 120739.
[2] Slater, M. and Sanchez-Vives, M.V. (2016), "Enhancing our lives with immersive virtual reality", *Frontiers in Robotics and AI*, Vol. 3, p. 74.