2nd International Conference on Applications of Virtual Reality in Performing Arts
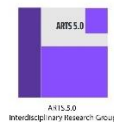
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Program

Thursday, 23 May 2024

10⁰⁰–   **Registration**

11⁰⁰–   **Opening**

Morning Session   **Chair: Anna Mária Bólya**

11³⁰–11⁵⁰ **Ildikó Horváth**
From Traditional to Technological: Exploring the Shift to VR and AI in Performing Arts

11⁵⁵–12¹⁵ **Anna Sudár**
The Rhythm of Virtual Reality: Dance History Presentation in a Desktop VR Environment

12²⁰–14⁰⁰ **Lunch**

1st Afternoon Session   **Chair: Erzsébet Bujdosóné Dani**

14⁰⁰–14²⁰ **Ahmed Alyousify, Attila Gilányi**
Avatars and Applause: Exploring the New Rules of Comedic Engagement in VR

14²⁵–14⁴⁵ **Borbála Berki**
Embodied Avatars in Virtual Reality Enhancing Learning in Dance Education

14⁵⁰–15¹⁰ **Ildikó Papp**
Interpreting and Applying Spatial Shapes – How Can We Make the Learning Process Easier?

15¹⁵–15³⁵ **Abdallah Alhamad, Attila Gilányi**
Simulating Performing Arts in the Metaverse: Utilizing Computer Vision and Motion Capture

15⁴⁰–16⁰⁰ **Coffee Break**

2nd Afternoon Session   **Chair: Ildikó Horváth**

16⁰⁰–16²⁰ **Attila Gilányi**
On Virtual Models of the First National Theater of Hungary and Their Applications Related to Performing Arts

16²⁵–16⁴⁵ **Péter Baranyi**
Workflows in 3D Digital Environments

16⁵⁰–17²⁰ Virtual, Augmented and Mixed Reality Presentation

Friday, 24 May 2024

	1st Morning Session	**Chair: László Koppány Csáji**

9⁰⁰–9²⁰ **Mihály Timár**
Importance of Motion Pictures and Video Recordings in Dance Pedagogical Method of Sándor Timár

9²⁵–9⁴⁵ **Anna Mária Bólya**
Pilot – Measuring Perception of Traditional Dances Different Type of Meters Using Motion Capture

9⁵⁰–10¹⁰ **Ferenc Tamás Adamovich**
The Correlation System and Purpose of Use of Affective Movement Pedagogy and Virtual Space

10¹⁵–10³⁵ **Faris Al-Fayyadh, Attila Gilányi, Péter Gemza**
Exploring the Impact of Virtual Reality on Theater Exhibition

10⁴⁰–11⁰⁰ **Coffee Break**

2nd Morning Session   **Chair: Ádám B. Csapó**

11⁰⁰–11²⁰ **Vessela Statkova**
Reimagining Space: Virtual Reality in Scenography Education

11²⁵–11⁴⁵ **Lilla Dalma Dominek, Erzsébet Bujdosóné Dani, Nóra Barnucz**
Flow Measurement Results of Applying Augmented Reality and Multimedia in Higher Education

11⁵⁰–12¹⁰ **Thawra Alyusef**
Using Virtual Reality Tools to Help Football Players

12¹⁵–14⁰⁰ **Lunch**

1st Afternoon Session   **Chair: Péter Baranyi**

14⁰⁰–14²⁰ **Marianna Zichar**
The Potential of 3D Scanning in Virtual Reality Applications

14²⁵–14⁴⁵ **Ádám B. Csapó**
VR and Digital Reality: Transitioning from Topical to Workspace-Centered Environments

14⁵⁰–15¹⁰ **Barbara Haines**
Mapping Motion: Motion-capture Through the Visualization of Benesh Movement Notation System

15¹⁵–15⁴⁰ **Coffee Break**

2nd Afternoon Session   **Chair: Attila Gilányi**

15⁴⁰–16⁴⁰ Discussion on Challenges and New Directions Connected to the Future of Applications of Virtual Reality in Performing Arts

16⁴⁰ **Closing**

List of Talks

Ferenc Tamás Adamovich, *The Correlation System and Purpose of Use of Affective Movement Pedagogy and Virtual Space*

Abdallah Alhamad, Attila Gilányi, *Simulating Performing Arts in the Metaverse: Utilizing Computer Vision and Motion Capture*

Ahmed Alyousify, Attila Gilányi, *Avatars and Applause: Exploring the New Rules of Comedic Engagement in VR*

Thawra Alyusef, *Using Virtual Reality Tools to Help Football Players*

Péter Baranyi, *Workflows in 3D Digital Environments*

Borbála Berki, *Embodied Avatars in Virtual Reality — Enhancing Learning in Dance Education*

Anna Mária Bólya, *Pilot — Measuring Perception of Traditional Dances Different Type of Meters Using Motion Capture*

Ádám B. Csapó, *VR and Digital Reality: Transitioning from Topical to Workspace-Centered Environments*

Lilla Dalma Dominek, Erzsébet Bujdosóné Dani, Nóra Barnucz, *Flow Measurement Results of Applying Augmented Reality and Multimedia in Higher Education*

Faris Al-Fayyadh, Attila Gilányi, Péter Gemza, *Exploring the Impact of Virtual Reality on Theater Exhibition*

Attila Gilányi, *On virtual models of the first National Theater of Hungary and their applications related to performing arts*

Barbara Haines, *Mapping Motion: Motion-capture Through the Visualization of Benesh Movement Notation System.*

Ildikó Horváth, *From Traditional to Technological: Exploring the Shift to VR and AI in Performing Arts Pedagogy*

Ildikó Papp, *Interpreting and Applying Spatial Shapes — How Can We Make the Learning Process Easier?*

Anna Sudár, *The Rhythm of Virtual Reality: Dance History Presentation in a Desktop VR Environment*

Vessela Statkova, *Reimagining Space: Virtual Reality in Scenography Education*

Mihály Timár, *Importance of Motion Pictures and Video Recordings in Dance Pedagogical Method of Sándor Timár*

Marianna Zichar, *The Potential of 3D Scanning in Virtual Reality Applications*

Abstracts

The Correlation System and Purpose of Use of Affective Movement Pedagogy and Virtual Space

Ferenc Tamás Adamovich

Research Institute of Art Theory and Methodology, Hungarian Academy of Arts

In my presentation, I present studies that support the fact that our emotions influence our movements. Then I will present the affective movement pedagogy system I created in 2016 and the purpose of its use in dance and theater higher education systems. With the help of the system, we can pre-tune emotions, which affect not only our movement, but also our diction. Affective movement pedagogy works with conscious movement, so our attention is constantly guided. The traditional use of virtual reality prioritizes skill-level movements, since according to its most common use, it does not give a detailed picture of the body, but of our environment. It helps to create emotional atmospheres with the interaction of the avatar and the constructed environment, which can further tune our mind with the help of visual information, thus affecting our movement in real time. Of course, the character of the avatar also affects our movement, when our avatar is large and appears in the virtual space, we will move more slowly.

Affective movement pedagogy and working with virtual reality therefore require a different kind of attention activity, so a movement-related improvisation is realized with a different procedure. With the motion capture system, we can record movement patterns, and then we can classify the movements with the LSTM neural system network. The two types of movement execution require different muscle activity, brain activity and form of movement. With the help of affective movement pedagogy, we can practice the two types of movement execution and with the motion capture technique we can classify the two types of movement execution by creating an evaluation model.

Simulating Performing Arts in the Metaverse: Utilizing Computer Vision and Motion Capture

Abdallah Alhamad[1], Attila Gilányi[2]
[1]Doctoral School of Informatics, University of Debrecen
[2]Faculty of Informatics, University of Debrecen

Metaverse is a new training tool that simulates real-world animation to provide an innovative performing arts platform. Animation data was extracted from real-performance videos through motion capture and computer vision technologies so that it could be shown in virtual reality (VR) environments. This method delivers simulated performance. For the trainees, enhanced training content increased psychological and cognitive effects. Extracting animation data from performance videos is the function of a computer vision algorithm like OpenCV. OpenCV analyzes video frames and extracts motion features to track a performer's movements and joint positions. Consequently, the visualization features of OpenCV enable the creation of graphic representations in the joints of virtual avatars. Later, using Blender as a 3D animation editor and the Unity game engine.

Virtual reality training offers a cost-effective substitute for a secure simulated environment in which to practice different types of skills. There are still challenges that need to be addressed, mainly with accurately translating human movement into virtual avatars, extracting exceptional animation data from complex performances, and creating a seamless and engaging virtual reality experience. Computer vision and motion capture combined provide a new perspective on performing arts in the metaverse. This will ultimately improve training efficacy, foster collaboration, and increase access to artistic expression.

Keywords: Metaverse, Performing Arts, Computer Vision, Motion Capture, Animation, Virtual Reality, OpenCV, Training, Education, Artistic Expression

Avatars and Applause: Exploring the New Rules of Comedic Engagement in VR

Ahmed Alyousify[1], Attila Gilányi[2]
[1]Doctoral School of Informatics, University of Debrecen
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Stand-up comedy has traditionally relied on direct interaction between a comedian and a live audience, with physical presence crucial to establishing a bond. Virtual Reality platforms like VRChat and AltspaceVR as an example, are disrupting this dynamic. In the metaverse, performers embody fantastical avatars, while audiences react through virtual emotes, gestures, and unique environmental interactions. This talk examines how these novel forms of expression redefine traditional comedic engagement and open up fascinating avenues for humor in virtual worlds. It explores the evolving landscape of stand-up comedy in the metaverse and its exciting potential for the future of performing arts.

Keywords: Virtual Reality, VR, Comedy, Avatars, Art, Performing Arts.

Using Virtual Reality Tools to Help Football Players

Thawra Alyusef

Doctoral School of Informatics, University of Debrecen

The popularity of virtual reality has increased dramatically. Previous research has proven a strong relationship between training with virtual reality and improving performance in traditional physical competitions, which improves the quality of practice in sports. Thus, enabling the development of a successful training system for student-athletes.

Our research aims to improve professional football players' anticipating skills by creating VR training sessions and utilizing VR tools in a complementary manner to traditional training techniques. The fundamental idea is to effectively address interlocking difficulties by combining complementing specialist talents from biomechanics, computer science, motor control and learning, psychology, and physiology.

First, utilizing virtual reality equipment like a rococo suit or XR, the movements of professional players will be captured. Second, the foundation of the research is the creation of VR training techniques that, since they provide players with customized feedback whenever they need it, are more likely to enhance cognitive functions and sound decision-making. It is anticipated that combining virtual reality training methods with conventional training sessions will produce remarkable results in terms of selecting a group of players, recognizing their errors with ease, and instructing them fast, all while saving time and energy. Motion capture technology also assists us in identifying the physical conditions that some athletes have, such as ACL accumulation, which lowers risk and aids in the development of a clear plan of attack for the individual.

Tools: Unity, Rokoko suits, Oculus.

Keywords: Virtual reality, sports, XR, ACL.

Workflows in 3D Digital Environments

Péter Baranyi
CIAS, Corvinus University of Budapest

The study explores that which 2D digital workflows can be conveyed to 3D digital environments in order to improve user effectiveness. Our focus is predominantly on the content and digital resources utilized in e-learning and corporate management environment. The lecture propounds novel approaches and a fresh set of principles for the purpose of evaluating digital functionalities and user efficiency within 3D digital environments. The lecture concludes that individuals were able to carry out the designated workflow at a minimum of 50% faster pace in the 3D environment compared to all other scenarios. Furthermore, the study demonstrates that 3D environments possess the ability to offer users a significantly enhanced understanding when it comes to exchanging and interpreting digital workflows.

Embodied Avatars in Virtual Reality — Enhancing Learning in Dance Education

Berki Borbála

CIAS, Corvinus University of Budapest

In virtual reality environments, embodied avatars could deepen the sense of presence for learners in dance and performing arts education. Avatar representation is imperative for creating a holistic and captivating virtual experience. Specifically, personalized avatars that mirror learners contribute to the process of acquiring dance skills and understanding movement. These virtual embodiments extend the scope of non-verbal communication, foster greater possibilities for collaboration, and promote interactive experiences that could surpass traditional methods of performing arts training. Moreover, avatars play a key part in deconstructing complex dance movements, offering an intuitive visual guide and immediate feedback, thereby amplifying the efficiency and effectiveness of dance instruction.

Pilot — Measuring Perception of Traditional Dances Different Type of Meters Using Motion Capture

Anna Maria Bólya
Arts and Research Ltd

The use of motion capture technology in preserving and documenting traditional dance forms has been proved in various studies. These are e.g. documentation (Hegarini et al. 2016) or exploration of inheritance methods (Shi 2019). Technology has advancements in safeguarding cultural heritage. As second motion capture systems can be instrumental in analyzing and teaching dance movements. (Rao 2022). In reforming today's dance education and training systems the application of motion capture technology, mixed reality can be essential (Shi 2022). As third the relationship between music and dance, particularly in terms of rhythm and meter, has been investigated using motion capture technology. Studies have analysed the co-evolution of rhythm in music and dance, measuring the phenotype of individuals dancing through motion capture technology (Dean et al. 2009, Aristidou et al. 2023). The paper introduces a research plan, in which we realise an investigation of Hungarian and Macedonian traditional dance material with use of motion capture. The aims of the investigation: piloting preservation function, measuring isochronous and non-isochronous music and dance material, analyzing music-dance relationship and perception in three metric types, isochronous, defined isochronous and non-defined isochronous meters (Ullal-Gupta et al. 2014, Bólya 2024).

VR and Digital Reality: Transitioning from Topical to Workspace-Centered Environments

Ádám B. Csapó

Corvinus Institute for Advanced Studies, Corvinus University of Budapest

In the evolving landscape of digital work environments, traditional methods characterized by topical, folder-file structures are giving way to more dynamic, workspace-centered approaches. This talk explores the practical value of immersive "digital reality environments" facilitated by Web 3.0 technologies and virtual reality (VR). It contrasts these modern methodologies with classical organization systems, highlighting how VR and Digital Reality are reshaping the way we conceptualize and interact within digital workspaces. This shift not only enhances spatial and contextual awareness but also optimizes operational efficiencies and engagement in digital realms. The talk will begin by providing a definition and overview of key emerging concepts within this area, including "Digital Reality" and "Internet of Digital Reality". This will be followed by an overview of Web 3.0 and 3D interfaces (including VR, AR and MR). These technologies will be examined within a unified framework, emphasizing practical strategies for implementing collaborative digital work environments.

Flow Measurement Results of Applying Augmented Reality and Multimedia in Higher Education

Lilla Dalma Dominek[1], Erzsébet Bujdosóné Dani[2], Nóra Barnucz[3]
[1]Department of Social Communication, Ludovika University of Public Service
[2]Department of LIS, University of Debrecen
[3]Faculty of Law Enforcement, Ludovika University of Public Service

The main objective of the presentation is to introduce how students in higher education react to the integration of ICT tools in the classroom activities, and to make recommendations on what pedagogical elements are needed to make the flow experience accessible to students in higher education, and as a conclusion, to implement the flow-based pedagogical model (Dominek 2020, 2021a, 2022). This research was implemented by the „TKP2021-NKTA-51 with the support provided by the Ministry of Culture and Innovation of Hungary from the National Research, Development and Innovation Fund, financed under the TKP2021-NKTA funding scheme." In order to improve the flow status and knowledge of students, a pilot research has been being conducted at the Ludovika University of Public Service (hereinafter: LUPS), where the use of Augmented Reality (Czékmán 2017), the HY-DE model (Dani 2014) and other ICT tools are being tested in a classroom experiment. The research has been carried out in three of the university's four faculties; the research was carried out with the students of the Faculty of Law Enforcement and Faculty of Military Science and Officer Training in ESP classes, and with students of the Faculty of Public Governance and International Studies in the academic year of 2022/2023. This term, digital technologies (AR, HY-DE model and other ICT tools) were used several times in different groups of students, where they were asked to complete the Flow State Questionnaire. The aim of the digitally based teaching with creative learning materials is to give students access to the flow experience, they can experience flow. As a result, their communication becomes more confident, their vocabulary knowledge improves statistically proven. According to our hypothesis, the impact of the digital learning environment on students' access to flow state leads to high student motivation during the course, and has a positive influence on the acquisition of professional vocabulary and the development of their digital competences and communication skill (Barnucz 2019a; 2019b). Students' answers may reveal an intensified need to develop a situated and constructive approach to learning (Dede 2008, 2009), but also how to achieve the state of flow (Nahalka 1997; Sharma & Gupta 2016).

Exploring the Impact of Virtual Reality on Theater Exhibition

Faris Al-Fayyadh[1], Attila Gilányi[2], Peter Gemza[3]
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Modern technology, particularly virtual reality (VR) technology, opens new horizons for enhancing learning processes across a wide range of subject areas. This research aims to evaluate how a virtual reality experience affects students' interest in historical theaters. Data was collected and analyzed to evaluate the extent to which this immersive experience increased motivation and deepened historical learning by distributing questionnaires to a sample of students after their exposure to the virtual reality of historical theater. The outcomes demonstrated that students had a favorable reaction to the virtual world, demonstrating both its visual appeal and its simplicity of use. Students also expressed a strong desire to study more of the exhibition's content, proving how beneficial this experience was for improving their comprehension of historical subjects. Furthermore, students expressed feeling completely present and immersed in the virtual environment, demonstrating its capacity to surpass both time and spatial limitations and enhancing the educational process. The study also explains the procedures used in the analysis of the information gathered from the surveys, outlining the primary conclusions drawn from the process. These results highlight how crucial it is to use virtual reality (VR) technology to create engaging and interactive learning environments. By doing so, educators and instructional designers can more effectively incorporate technology into classrooms, improving student engagement and learning outcomes.

Keywords: Virtual Reality Technology, Virtual Environment, Exhibition, Immersion, Educational Technology, Learning History, Engagement

On virtual models of the first National Theater of Hungary and their applications related to performing arts

Attila Gilányi
Faculty of Informatics, University of Debrecen

Nowadays, applications of virtual reality play an increasing role related to performing arts. In this talk, we overview the results of some recent investigations connected to this area.

In the first part of the talk, we give some hints about the virtual reconstruction and the three-dimensional visualization of the building of the first National Theater of Hungary, which was opened in 1837, and obviously played a crucial role connected to Hungarian performing arts.

In the second part, we discuss the advantages of the application of virtual reality technologies (in particular the use of the virtual models of the Theater above) in presenting and teaching dance history. We also point out some important similarities and differences between so-called fully immersive and desktop virtual reality tools and methods related to this field.

Keywords: Virtual reality, 3D visualization, virtual reconstruction, National Theater of Hungary, dance history, history of ballet, presentation of data and information in virtual spaces.

Mapping Motion: Motion-capture Through the Visualization of Benesh Movement Notation System

Barbara Haines
Musical Theatre Department, Dance Faculty, University of Mobile

Dance is a particularly ephemeral art form, created on a human body and presented for a moment to an audience. Documentation is complex, but necessary for the work to survive. Cunningham once said, "Only when dance notation is truly visual will it become a truly useful tool for dancers and choreographers. The history of dance is in many ways a study of how such efforts fail. The impermanence of the work that embodies dance, which disappears as soon as it is created, and the lack of a comprehensive encoding system have necessitated the functional oral transmission of dance repertoires for centuries. The repertory that falls out of history constitutes a sort of dark matter: choreographed gestures that are invisible and can be sensed only indirectly. While motion capture technologies transform physical movement into data through an algorithmic apparatus, and animation software now comes with preloaded skeletal, muscular, facial, and movement models, it still only shapes the physics and aesthetics. Looking at the early famous works like *Ghostcatching* by Cunningham/Kaiser/Eshkar, the designers created the duet between body and movement, space and frame. We cannot see the *invisible* information. For example how a jump is being performed, with an early, middle or with late turn, or how the applied dynamic forces give texture to a dance that allows us to see the choreographic intention. The choreographic intention behind each movement, or and the various fundamental principles that distinguish Vaganova's technique from Cecchetti's or Bournoville's, still exist only in the didactic language of dance, dance notation: Choreology. The questions we must ask:

- What is the current relationship between dance and motion-capture technology?
- Where do we stand in relation to dance didactics and motion-capture technology?
- How do we envision motion-capture technology in dance education?

Today's generation, Generation Z, is recognized as the first true digital natives. Born into the Internet age, they will soon make up one-third of the world's population. They expect information to be obtained easily, seamlessly, and quickly via AI assistant and omni channel support tools such as self-service apps and portals. It is crucial to understand, or at least become familiar with their habitat. As new technologies have emerged, the way of everyday life has changed forever, including educational needs.

From Traditional to Technological: Exploring the Shift to VR and AI in Performing Arts Pedagogy

Ildikó Horváth
Corvinus Institute of Advanced Study, Corvinus University of Budapest

The rapid evolution of virtual reality (VR) and Artificial Intelligence (AI) technologies presents significant potential to transform educational methodologies by centering on learner-focused and personalized environments. These advancements facilitate the adoption of innovative teaching strategies and introduce diverse teaching modalities into the learning experience. Despite these benefits, the integration of such technologies demands substantial preparation from educators, necessitating enhanced digital literacy to effectively harness these tools.

This paper explores an experimental comparison between conventional teaching methods and the incorporation of VR and AI technologies in performing arts education. The study assesses the preparatory efforts involved in traditional paper-based and 2D digital materials versus those supported by VR and AI. By implementing a consistent workflow across different teaching scenarios, the research examines how these technologies affect the efficiency of various educational processes and tasks.

The experiments evaluated in terms of a newly proposed framework point to the conclusion that when using innovative AI and VR technologies the active preparation time decreases drastically. This reduction not only streamlines workflow but also potentially enhances the overall teaching effectiveness. The findings underscore the transformative potential of VR and AI in reshaping educational paradigms within the performing arts sector.

Interpreting and Applying Spatial Shapes — How Can We Make the Learning Process Easier?

Ildikó Papp
Department of Data Science and Visualization, Faculty of Informatics

In order for 3D objects to appear in a virtual environment or in a real production process, it is necessary to create a digital model that meets the requirements. Nowadays, there are many different 3D modelling applications available that meet a wide variety of needs and expectations. In education, priority is given to those that are freely available. To use an application practically and routinely, it is necessary to have the appropriate geometrical knowledge and practice in the modelling tools of the design application being used.

In my presentation, I will share my experiences and some good practices, such as how a design task can be linked to a museum pedagogic session or how to achieve artistic effects through algorithmic modelling.

Keywords*: 3D modelling, geometrical knowledge, learning process, good practices

The Rhythm of Virtual Reality: Dance History Presentation in a Desktop VR Environment

Anna Sudár Réka
CIAS, Corvinus University of Budapest

Three-dimensional virtual reality (VR) environments have gained recognition for their ability to facilitate innovative and highly captivating ways of engaging with digital content in diverse domains. Whether utilized on desktop platforms or immersive screens, these VR environments offer unique opportunities for interaction across a wide range of applications. Over the past few years, numerous studies have consistently indicated that employing three-dimensional (3D) interfaces, as opposed to two-dimensional (2D) interfaces, can result in improvements across multiple performance dimensions. The advantages of virtual spaces are noteworthy in certain educational and work scenarios, where an increase in efficiency has been proven in terms of task completion and understanding, as well as the recall of information acquired in those environments, and in certain cases, they are capable of reducing the cognitive load on the users. Properly designed and furnished VR spaces can assist in understanding the presented content and comprehending the conveyed information. Based on these characteristics and the findings of many scientific research, in an international art project, a virtual space has been created that showcases the major milestones of the collaborating nations' dance history. Within this desktop VR space, the dance artistry roots of each country were presented through multiple channels.

Reimagining Space: Virtual Reality in Scenography Education

Vessela Statkova

Fine Arts Faculty, Department of Applied Arts, Academy of Music, Dance and Fine Arts "Prof. Assen Diamandiev" Plovdiv

In the dynamic realm of performing arts, the concept of space holds immense significance, serving as a canvas upon which stories unfold. Scenography, as the art of shaping theatrical space, continually seeks innovative methods to enhance expressive possibilities. This paper examines the integration of virtual reality (VR) technology into scenography education and presents examples from pedagogical practice. Through the use of VR, educators can work interdisciplinary, offering students immersive experiences that bridge the gap between theoretical knowledge and practical application. Various aspects of VR in scenography education are explored, including its ability to develop spatial awareness, foster creativity, and facilitate collaborative learning. Additionally, the challenges and questions associated with the introduction of VR technology in educational contexts are discussed, along with its implications for shaping the next generation of scenographers.

Importance of Motion Pictures and Video Recordings in Dance Pedagogical Method of Sándor Timár

Mihály Timár
Children's Dance Ensemble

We had the opportunity to make some recordings of the legényes dance processes of Kalotaszeg region in the studio of CYENC - Centre of Excellence in collaboration with Annamária Bólya PhD on behalf Research Institute of Art Theory and Methodology of the Hungarian Academy of Arts and with Andreas Aristidou PhD on behalf of the University of Cyprus on May 9, 2024. The legényes dance of Kalotaszeg is one of the most significant and virtuoso traditional Hungarian men's dances, which survived as a living tradition until the end of the 20th century in the villages of the Kalotaszeg in Transylvania (now Romania). Since 1941, countless motion pictures have been taken of this type of dance. For the 3D recordings, we chose examples relying on the recordings of Sándor Timár, from the dance processions of informators of two different villages, Béla Árus (Méra - today: Mera, Romania) and István Gergely (Inaktelke - today: Inucu, Romania), which were learned and danced with great precision based on archival films by dancer, dance teacher Gergely Timár. His movement was recorded by Andreas Aristidou in the CYENS studio. In the coming weeks and months, with Gergely Timár and the dancers of the Timár Ensemble, our mission is to observe the extent of the 3D animation made in this way can help to understand such complex movement processes for advanced dance learners.

In the second part of my presentation, I would like to present the background of this research. One of the central elements of the pedagogical system of Sándor Timár (1930, Kossuth Prize-winning choreographer, dance folklorist and dance teacher, honorary university professor), is to direct the students towards the examination of the original, collected dance material, giving them the key to understand that, instead of his own personal style. Personal encounters with village informators are the best way to do this, but the possibility of this has been minimized nowadays, as few of the village informators, who has learnt folk dance in traditional forms of community, are still alive. Considering this, the various motion picture recordings are highly valuable and important, of which Hungarian folkdance research has accumulated an incredible amount even regarding global standards. Sándor Timár maintained a close professional relationship with the excellence of folkdance research, primarily with György Martin PhD, to whom he also had a personal friendship. Sándor Timár intended to base his dance pedagogy on the scientific results of the dance folkloristics, and he himself joined the folkdance research. His motion picture recordings, photos and sound recordings are preserved in the archives of the Institute for Musicology of the Research Institute for Humanities and the House of Traditions in Budapest. In folk dance education, he considered the presentation of archival recordings to be important from the beginner level and the analysis of them at an advanced level. Keeping up with the development of technology (film screening, video monitor, use of video projector), he strived to bring the archive dance recordings closer to his students. Following the heritage of this approach, we are moving forward and attempt to apply the 3D technique in folk dance pedagogy.

The Potential of 3D Scanning in Virtual Reality Applications

Marianna Zichar
Faculty of Informatics, University of Debrecen

3D scanners can capture the shape of physical objects, and the collected data can be transformed into a 3D model that unbelievably similar to the original one. The very popular virtual reality applications exclude the physical world around the user and put him into an artificial digital one using special electronic equipment. The possible collaboration of these two fields seems trivial since 3D scanning generates digital contents a VR application needs. Is this process so simple? What objects have already been 3D scanned and used or planned to be used in a VR application? The presentation tries to answer these questions and give an insight into the possible cooperation of these two emerging technologies.

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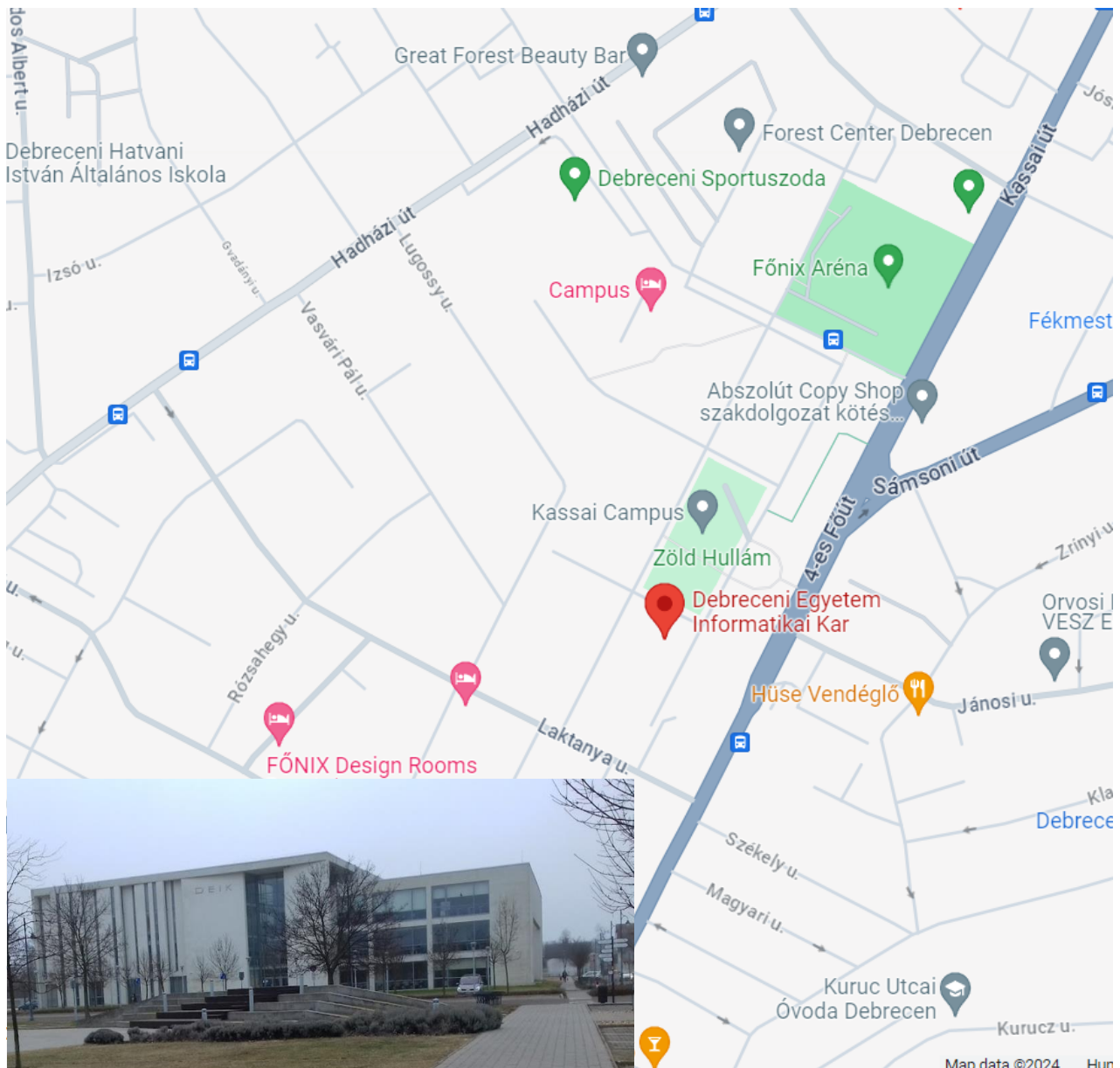
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Locations

* Conference Venue

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Address: Kassai út 26, 4028 Debrecen.

Locations

* Restaurant

Forest Center Debrecen

Address: Debrecen, Tüzér u. 4, 4028