

Report on the outcomes of a Short-Term Scientific Mission¹

Action number: CA22145

Grantee name: Dr Daniel J. Finnegan

Details of the STSM

Title: Digitally Augmenting Historically Significant Lithuanian Board Games

Start and end date: 09/08/2024 to 12/08/2024

Description of the work carried out during the STSM

Description of the activities carried out during the STSM. Any deviations from the initial working plan shall also be described in this section.

(max. 500 words)

This STSM facilitated Dr Daniel J. Finnegan's (DJF) visiting the ŽAISLŲ MUZIEJUS (Toy Museum) in Vilnius, Lithuania to discuss how one may facilitate digitally augmented interactions with games and toys at the museum. DJF was hosted by Indrė Jovaišaitė-Blaževičienė (IJ-B) who granted a tour of the museum and the surrounding city, helping to contextualise the toys on display within the history of the capital city, and Lithuania more generally.

The STSM work involved a personalized tour of the museum. This presented the opportunity to interact with the toys and games on display, inspiring candidates for digital augmentation. Upon a thorough discussion with IJ-B, we elected to explore how the game of Alquerque may be augmented to be played in the museum against an AI opponent. This game is considered a precursor to modern Draughts, and is played by two players, with the objective being to capture all your opponent's pieces. The board, carved on the lid of a barrel (Fig 1) is believed to be the first one found in Lithuania, during archaeological excavation of the Palace of the Grand Dukes of Lithuania. Understanding not just the rules of the game but also where in the museum the game is situated, and the visitor journey is necessary to develop a successful intervention.

Discussing how visitors journey through the museum, IJ-B described how the space can get cramped, particularly as the board is situated by a window and walkway from the main reception into the museum's second room. Though there is enough space for two people to play comfortably, the board may be overlooked by visitors passing through in large groups. From their own observations, IJ-B described how

¹ This report is submitted by the grantee to the Action MC for approval and for claiming payment of the awarded grant. The Grant Awarding Coordinator coordinates the evaluation of this report on behalf of the Action MC and instructs the GH for payment of the Grant.

the board is frequently approached by people visiting the museum alone, where they will approach the board to inspect it, it's pieces, yet rarely engaging with the written contextual signage accompanying the board itself. We decided to investigate an intervention involving an AI software program with which solo visitors could play the game. Beyond the rules of the game, this program would leverage advances in large language models (LLMs)² to create an avatar – a virtual 'person' – with which players could converse about the game, the museum more generally, and the wider context of games and play as an important part of Lithuanian culture while playing.

Key to this is the **lack** of screen-based technology. Discussions between DJF and IJ-B concluded that screens are isolating and will detract from the physicality of the board game. Thus, our PoC will be audio-only based initially, requiring simple off-the-shelf components (e.g., microphone, speaker/headphones, Raspberry PI/embedded computational device) which are cheap and robust. This will facilitate a unique experience for visitors, augmenting not just the game on display but their journey through the museum and encouraging reflection and engagement with the museum's offerings. **(476 words)**



Figure 1: The game of Alquerque in the museum

Description of the STSM main achievements and planned follow-up activities

Description and assessment of whether the STSM achieved its planned goals and expected outcomes, including specific contribution to Action objective and deliverables, or publications resulting from the STSM. Agreed plans for future follow-up collaborations shall also be described in this section.

(max. 500 words)

The STSM has successfully kickstarted collaboration between two COST Action members whom for it would otherwise have been unlikely. Our goals of exploring Lithuanian history around games and play, knowledge exchange across disciplines (DJF is a computer scientist; IJ-B an ECR in Arts and Humanities) and a conceptual design for a digitally augmented board game have been met. We have agreed to develop a proof-of-concept (PoC) going forward, with plans to apply for future STSMs to facilitate a) further trips to ŽAISLŲ MUZIEJUS to install and test a PoC, and b) to monitor visitor engagement with the system and perform qualitative evaluation of the intervention. We have agreed to present our work to the COST Action community as part of the organized series of seminars in Summer 2025.

DJF will lead development of the PoC, with IJ-B providing contextual input to drive the LLM's knowledge base of key historical information. We aim to complete a PoC by Autumn 2025, with installation and testing happening throughout Winter and into Spring 2026.

² The popular chat bot ChatGPT is an example of an LLM.

