AI SANDBOX REPORT

Xploro

ARTIFICIAL INTELLIGENCE
IN TRAVEL GUIDE SOLUTIONS

Inovačné centrum
Košického kraja

ABOUT US

The Innovation Centre of the Košice Region (ICKK) is a key pillar for the development of innovation and entrepreneurship in our region. As an interest association of legal entities, the ICKK was established on 4 August 2021. Its founders are the Košice Self-Governing Region, the City of Košice, the University of Pavol Jozef Šafárik, the Technical University in Košice and the University of Veterinary Medicine and Pharmacy in Košice.

Our main goal is to support and develop the innovation ecosystem in the Košice Region. We are implementing the regional innovation strategy adopted by the KSC Council in June 2021 and focus on talent development, accelerating startups and supporting SMEs in their international development.

Our cooperation with international investors enables scaling startups and increasing their competitiveness. We are a bridge between entrepreneurs and innovation, connecting innovation actors and creating new business opportunities.

Our ambition is to reduce the exodus of talented individuals from the region and to support the sustainable growth of new businesses. ICKK strives to turn innovative ideas into real business successes and contribute to positive change in our region.

CURRENT STATUS

With the rise of technology and digital solutions, the demand for modernisation of tourism services is increasing. Travellers today expect information about destinations and attractions to be provided quickly, easily and directly in real time. Given this need, the use of artificial intelligence in tourism is becoming a key trend that can significantly improve the tourist experience and make the rich historical and cultural heritage of sites more accessible to tourists.

ANALYSIS OF GUIDE ACTIVITY

At present, guiding and providing information about tourism in the Košice Region is mainly carried out by traditional methods, such as tourist information centres, physical maps and classic tourist guides. However, these forms of information provision are limited by the availability of guides, localisation and time constraints.

The Xploro solution, which uses artificial intelligence as a guide, represents a revolutionary approach that could help modernise the provision of guiding services in the Košice region. This solution would not only increase the accessibility of guide services, but also make travel more interactive and experiential.

DATA PROTECTION IMPACT ASSESMENT

DPIA is a process that assesses the risks associated with the processing of personal data. It aims to identify potential threats to privacy and ensure compliance with regulations such as the GDPR.

However, in the case of the Xploro solution, there is currently no direct obligation to address the GDPR, which means that it is to some extent exempt from some of the legislative requirements relating to data protection. This fact allows them to spend more time on product development and features, without the unnecessary administrative burden of complying with regulations. However, in the future it may be important to consider the introduction of DPIA processes, especially if the scope of the data being processed or the legislative requirements change.

DESCRIPTION OF THE SOLUTION

Xploro is an innovative solution that uses artificial intelligence to provide tourist guide services. The app recommends places of interest and can provide guiding services in the form of audio or text. It is designed to simplify travel and enrich tourists' experiences by providing them with information about the sites they visit.

MAIN FUNCTIONS

Location services

Xploro uses GPS-based location services, allowing the app to identify the user's location and automatically search for the nearest hiking and recreational locations. Based on the user's geographic location, the app recommends relevant attractions, landmarks, natural beauty and cultural sites that might be of interest to the user. This personalised approach ensures that each user discovers the best of the region.

Multilingualism

Xploro provides guide services in three languages - English, Slovak and German, allowing a wide range of users from different countries to access information about tourist sites in their native or preferred language. This multilingual support increases the accessibility of the app and ensures that users can comfortably use its services regardless of the language barrier. Future plans are underway to extend the language support to other world languages.

AI texts with audio guide

Xploro uses advanced AI algorithms to generate text-based guide information about tourist sites based on the user's location and data obtained from Google. This information is then used in an audio guide that pre-reads it to users, allowing for comfortable listening during tours or walks. This hands-free feature enhances the comfort and interactivity of the experience, especially when visiting places where users don't want to be disturbed by screen viewing.

TECHNICAL IMPLICATIONS

As part of the evaluation of the Xploro solution, detailed analyses were carried out which included peer-to-peer meetings and in-depth system analysis. This approach allowed for a comprehensive assessment of the technical aspects of the solution as well as its compatibility with stakeholder systems and requirements.

ANALYSIS PROCEDURE

Peer-to-peer meetings

Early in the process, online calls were held with stakeholders to evaluate the solution and Xploro's CEO. The goal was to discuss the main aspects of the implemented solution, provide space for questions and clarify all technical and functional details.

In-depth system analysis

The in-depth system analysis evaluated key technical aspects of the solution such as integration, security, data protection, performance and optimization. We examined how the solution fits into the infrastructure, what security measures protect personal data, and identified opportunities to improve the performance and speed of the solution.

TECHNICAL FEEDBACK

After performing an in-depth system analysis and testing of the Xploro solution, we found that no performance or integration issues were identified.

From a technical perspective, the following recommendation was made:

- **Building and updating the information base**

It is recommended that a distributed system be developed to efficiently manage and update information on tourist sites so that users always have access to accurate and up-to-date data during their journeys.

- **Navigation and route planning function**

It is also recommended to include a navigation function directly to the selected monument, including recommendations on modes of transport, which would simplify travel and route planning for tourists.

- **Adding social features and community support**

At the same time, adding social features where users could share their experiences and recommendations could also be considered, which could further strengthen the community aspect of the app, depending on Xploro's future development visions.

DATA PROTECTION

Data protection is one of the most important aspects when implementing any AI solution, including Xploro. Since Xploro works with user data, which may include location data, it is important that the solution implements adequate security measures to protect this data.

The aim is to ensure confidentiality, integrity and availability of data as well as its protection against unauthorised access or cyber attacks. Ensuring compliance with legislation such as GDPR and minimising the risk of data misuse is also part of a well-configured data protection strategy.

Data protection implication

For AI solutions like Xploro, it is important to put in place mechanisms to anonymise data, encrypt data and ensure that users' personal data is not processed without their consent. These steps are essential to reduce the risk of data misuse and to increase user trust in the application.

AI implications in data protection

Xploro should consider implementing a robust data protection system that includes regular audits, encryption and protection against unauthorised access. Although Xploro is not currently subject to GDPR obligations, it is important that it prepares for future legislative changes that may affect the processing and protection of data within digital solutions.

EVALUATION OF THE QUESTIONNAIRE ON THE USABILITY OF AI FUNCTIONS

The questionnaire, which focused on evaluating the usability of the AI features of the Xploro solution, brought valuable feedback from stakeholders IT experts, a lawyer, the regional tourism organisation Košice Region Tourism and the Innovation Centre of the Košice Region. The responses received revealed both the technical advantages and shortcomings of the current solution, with several recommendations pointing to opportunities for improvement that could significantly increase the usability of the application.

Technical advantages of the solution

- **Versatility**

The app is designed to be used anywhere in the world, which means its use is not limited by geography. Users can use the app regardless of the destination they are in.

- **AI model Claude.ai**

Xploro uses an advanced model from Claude.ai, which, according to feedback, shows better results compared to competing AI models. This model ensures higher accuracy and relevance in generating textual information.

- **Reading and audio guide**

The app facilitates information retrieval by generating textual descriptions of tourist attractions that visitors would otherwise have to manually look up. In addition, the audio guide allows users to focus on exploring the surroundings without having to constantly monitor the screen.

Possibilities for technical improvements

- **Dependence on local data**

The app draws information from the Google Places API, but if no data is available in the database for a specific location, the AI generates a description of the landmark or point of interest. This can lead to unreliable information, as generative models can sometimes provide inaccurate or misleading data, which can discourage tourists who expect accuracy.

- **Misleading information**

Generated content may not always be up-to-date or completely correct. AI-generated text can lead to misrepresentation of real information.

- **Limited functionality**

The app does not offer the option of 360-degree images or an overview of nearby attractions, which would greatly improve the user experience.

Recommendations for improvement

Based on user feedback and technical analysis, several areas where the app could improve its functionality were identified. The aim is to make Xploro a fully-fledged tool for tourists, providing them with accurate, personalised and easily accessible information, thereby increasing the overall value of the user experience. The following recommendations offer solutions to address gaps and strengthen features that will enable wider use of the application at a regional and global level.

- **Social functions**

Consider adding social features that would allow tourists to share their experiences and recommendations with other users, creating a community of Xploro users.

- **Content extension**

More attractions, restaurants and other points of interest within each region need to be included, ensuring that the user has access to a wider range of options in the surrounding area.

- **Navigation and transportation**

The app should include the ability to navigate to the selected monument, including different modes of transport, which would make it easier for tourists to travel.

- **Personalisation**

It is recommended to add the possibility to create user profiles where tourists could record their visits and receive personalised recommendations for other places. This personalised approach would greatly improve the user experience and motivate travellers to use the app for longer.

- **Local data management system**

It is recommended to create a system for building and updating a database of information on tourist sites. This system would ensure that the information is relevant and verified, which will improve the credibility of the application.

- **Improving the quality of texts**

Care must be taken to ensure the quality of AI-generated texts is accurate and up-to-date. Implementing mechanisms to check the veracity of the data is essential to avoid misleading information.

- **Possibility of offline use**

For hikers in areas without internet coverage, the app should allow routes and information to be stored for offline use.
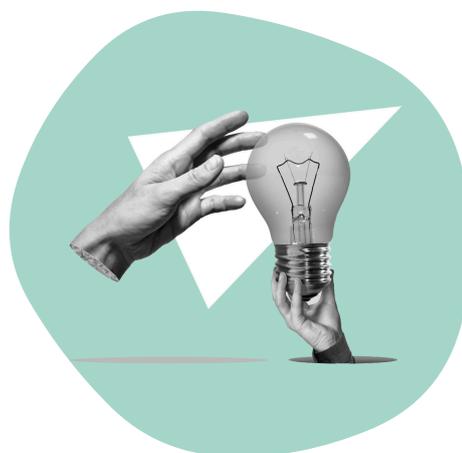
CONCLUSION

The Xploro solution brings a modern approach to tourist guide services using artificial intelligence. The app provides AI-generated text and audio information about tourist attractions and offers multilingual support, allowing it to be used anywhere in the world. With these features, Xploro aims to make travel easier and improve access to information for a wide range of users.

Despite its many advantages, the application has room for improvement, especially in the area of reliability of generated texts and limited amount of validated data. Some information may be inaccurate or misleading, which may affect the credibility of the application. In addition, the quality and range of the points of interest offered should be improved, especially in regions with a lack of up-to-date data.

Recommendations for improvement include adding navigation features, improving the quality of the generated texts and introducing the possibility of offline use. A system for verifying and updating the data is also needed to ensure that the information provided is reliable and accurate.

Xploro has strong potential, but further development and optimisation are necessary to make it a fully-fledged tool for tourists and to be able to compete in the global market of tourism applications.

PARTICIPATING PARTNERS

Marián Čuprík, at SKALLARS, specializes in corporate, technology and intellectual property law, with an emphasis on new technologies.

Marián Čuprík

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Stefan Nitkulinec is a passionate business software and game developer who, as a technical leader at Cassovia Code, motivates his team to deliver digital solutions that exceed customer expectations.

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Miriama Hučková is the Executive Director of Košice IT Valley, which is currently the only certified gold cluster in Slovakia and the first of its kind in Central Europe.

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