



CASE STUDY

Mixed Reality Darts Application

AVRspot



AVR SPOT
AR & VR experts



The Story Behind

Mixed Reality Darts Application has been created by the AVRspot team as a showcase solution to demonstrate our expertise in the domain of augmented and mixed reality. The product is designed to provide an enjoyable visual experience to Microsoft HoloLens users.

Challenge

Investigation

As it was the first time AVRspot have worked with mixed reality and Microsoft HoloLens, and one of our main objectives was to explore new technology horizons and all gimmicks of MR development process to ensure that we will deliver the best services in the future.

Challenge

Development

Granted a power of Microsoft holographic device, our highly experienced developers, and 3D artists have managed to create a striking product that would introduce HoloLens users to an exciting mixed reality game, eliminating the need for equipment or physical presence of players in particular place.

Marketing Opportunities

Mixed Reality Darts Application was a test project to help AVRspot enter new emerging markets of custom mixed reality development and demonstrate our skills and expertise.



Challenge

Business Potential

Mixed reality creates an immersive experience which is the competitive advantage of various brands. Beside analyzing MR's technical side, AVRspot have discovered its market potential and which industries might benefit the most from mixed reality.



Scope of Service

- 3D models creation;
- Unity configuration;
- Algorithms development;
- Quality Assurance.

Tools and Technologies:

- Unity 3D;
- C#;
- Vuforia.

Platform:

- HoloLens

Solution

AVRspot have developed an application that could be an engaging contest for darts professionals as well as a casual game for amateurs and, at the same time, reflect the potential of mixed reality in various industries. We are convinced that augmented and mixed reality continuously changes the business landscape, and many market leaders are ready to take advantage of it.

The app has been accurately developed according to the rules of darts. Yet, with HoloLence app it is possible to diversify the game by adding special effects such as fireworks if the user wins.



How we did it

Unity Engine was an obvious choice for our team, as it provides high-quality graphics and smooth performance. Initially, our proficient artists have created 3D models that match dartboard and arrows' real size.

To start the development process, our specialists have combined C# and Vuforia with HoloLens. By using Unity Engine we have managed to implement major HoloLens features, such as voice recognition, spatial mapping, and spatial sound.

To implement the key app functions and make the game experience as realistic as possible, we developed several algorithms:

- defining and tracking a hand position;
- power and direction of the throw;
- arrow position regarding dartboard;
- counting scores according to the darts rules.

A combination of HoloLens and Unity allowed us to achieve flawless gaze and gesture recognition. HoloLens Darts Application allows the app to determine where the user's attention is, target gestures based on the user's gaze, let the user select, activate, grab or scroll their holograms. It also enables users to place holograms on real-world surfaces, by crossing their looking ray with the spatial mapping mesh.

Given a high priority products' performance, our QA has gone through an accurate testing, deleting all issues to render a sleek interactive experience for each user.



Benefits

- ✓ Such apps have can be used in media, entertainment, education and advertising.
- ✓ HoloLence applications allow users to interact with 3D content.
- ✓ Beyond the application we developed, HoloLence features can be used by designers, architects and to interact with 3D renderings of their schematics and designs, allowing them to manipulate the object in real time and make alterations.
- ✓ HoloLence applications can be used for live or programmed training and provide interactive tutorials.



Results

After a complex development stage and internal testing, AVRspot has delivered a reliable product that could match all the initial goals it had to achieve.

Going through the development stages our team have gained a new technology expertise, updated our knowledge base, and trained our developers.

We obtained several new clients for augmented and virtual reality projects, as we had broadened our expertise;

We studied the mixed reality market potential and are ready to create an effective marketing strategy for this business direction.





About AVRspot

AVRspot helps clients transform their businesses by providing virtual and augmented technology solutions.

We solve sophisticated issues with creative strategy and large-scale engineering. By applying design-driven prototyping approach in combination with proven project management techniques our highly qualified team delivers outstanding digital solutions and content to our clients.

Our team of experts provide AR/VR Consulting, Product Design & Implementation, and Usability Testing. Moreover, we have experience in cross-border collaboration and virtual teams.