

# Case Study

## Scenegraph Studios Ltd

Delivery Partner

**VEC**

### Background

Scenegraph Studios Ltd specialise in developing virtual and augmented reality applications. They concentrate on crafting immersive and interactive experiences by utilising state-of-the-art technology. Their services typically encompass custom software solutions tailored for diverse industries, including gaming, education, and training, designed to boost user engagement and deliver innovative digital experiences.

These digital tools can support individuals dealing with mental health issues and offer practice for job interviews, helping to reduce stress and pressure while improving chances of success. Scenegraph also utilises large language models to enhance the diversity and realism of avatar characters by collaborating with various communities, including individuals facing mental health challenges, those seeking to develop soft skills for employment, and even nurses who can use these digital tools for training.

### Challenge

The company's mission is to revolutionise how audiences experience digital content by creating immersive and unforgettable virtual reality experiences. They strive to push the boundaries of the XR industry, using cutting-edge technology to transport users to new worlds and offer unique perspectives and insights.

Their goal is to make XR accessible and enjoyable for everyone, whether for entertainment or education, as the company is committed to continuous innovation, delivering high-quality,

innovative products that exceed client expectations and create a lasting impact on the XR landscape.

Although Scenegraph has established highly scalable operations, it remains a small team with limited resources. Therefore, they were eager to engage in a creative collaboration with like-minded innovators to exchange ideas, refine business plans, and enhance knowledge transfer.

### Solution

Following an ongoing working relationship, Scenegraph approached the Horizons team at the VEC (Virtual Engineering Centre) to further explore and enhance the existing metahumans they have been developing. Initially, the collaboration was to explore how to further develop the virtual humans as Scenegraph aims to drive forward within this space, even going as far as developing individual personalities for each of the metahumans they create, making each model unique, more realistic and bespoke to the needs and purpose of the model.

Concluding a more in-depth investigation, the VEC digital engineers concluded that they could provide greater value by exploring alternative options for Scenegraph's Graphics Processing Unit (GPU). Extensive research helped the VEC to identify alternative systems to the current solution with the recommended option offering similar processing power whilst running the same AI capabilities, however proving to be significantly more cost-effective and utilising half the power, all without compromising on speed.

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The VEC placed the findings into a comparison table to demonstrate and highlight recommendations for alternative solutions, enabling Scenegraph to gain additional awareness in addition to introducing a new research tool for further in-house research and development of differing language configurations and models, being able to effectively test and validate their appropriateness.

## Impact

The research conducted by the VEC has provided the Scenegraph team with enhanced awareness of their options and introduced a new research tool for informed decision-making, ensuring long-term value from this collaboration.

Moreover, the VEC supported Scenegraph in securing capital grant funding through the Horizons project, which they have utilised to invest in significantly larger servers for their office. These servers will allow Scenegraph to optimise power in their operations, streamlining development and processing tasks in mere seconds, granting the company a substantial competitive edge in an increasingly crowded marketplace.

While other organisations may take weeks to create a new avatar, considering various factors like aesthetics, voice, and backend development, Scenegraph has the capability of designing and producing custom avatars in just one hour.

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This partnership exemplifies how Scenegraph embodies continuous innovation as they aim to develop qualitative and specific feedback from avatars for their users, thus providing enhanced learning opportunities.

Following this collaboration, the VEC secured Scenegraph with an exhibition space at the AI Showcase event hosted by the Liverpool City Region Combined Authority. This event saw over 300 people from organisations and sectors come together to establish the region as a national exemplar in the application of 'AI for Good'.

Business owners Dave Tully and Nicola Honey also attended the series of Novel events hosted by the Horizons team at the VEC. These events brought thought and innovation leaders from across the public and private sectors of the Liverpool City Region to bring together new conversations for driving tangible innovation forward.

During the Novel sessions, the VEC team successfully created engaging peer networks, facilitating introductions between businesses to enhance collaboration. Scenegraph Studios connected with dot-art and have recently partnered to introduce additional digital tools for the Art Bytes Artwork initiative, which helps local children showcase their artwork in an accessible virtual environment. Since then, the Scenegraph team has launched AR applications, enabling students to experience their remarkable artworks in augmented reality, making the experience more immersive and captivating than ever.