

*Coming straight from education and being able to support projects I enjoy has been fantastic. I have been able to apply my existing skills to industrial projects whilst being placed on a truly unique and innovative project which has huge potential to transform cities of the future.*

## PROJECTS

### > **Developing The Metaverse: A Distinctive Urban Model for Reshaping Policy and Decision-Making Towards a Greater Sustainability**

Laurence joined the VEC as a Summer Intern, later becoming the Centre's first Metaverse Developer, eager to apply his skills to real business applications and gain industrial work experience. Here, Laurence was tasked to learn more about the methods for importing large data sets for a unique city model of the Liverpool City Region.


Making use of software and programs, like Unreal Engine 5 for game development, it holds the potential to integrate extensive city-wide datasets. This becomes evident as Laurence delves into refining these details within the Metaverse. This included iconic buildings and landscapes such as the Albert Dock, as well as variables that increased realism and testing of conditions like time of day and weather. These conditions could be linked to real-time data, making it possible to predict hazardous weather and storms, enabling communities to better prepare against flooding and damage. Additionally, Laurence implemented the sun's position into the Metaverse, highlighting which buildings and homes would benefit the most from solar panels for greater use of recyclable energy, lowering energy costs and reliance on a central grid.


Using open-source data, Laurence added colour-coordinated pins to buildings to identify the types of businesses that occupy them by postcode or address. Energy Performance Certificate ratings also highlight the substantial uses of energy throughout the city. This data could be visually communicated to decision-makers to plan for more effective and sustainable energy use.

Similarly, air quality data was introduced to the model, enabling users to benchmark changes over time and identify the variables causing lower quality air health.

In the future, the Liverpool Metaverse model can be deployed to support policymakers, government organisations, and emergency services for enhanced route selection and quicker responses. It can also provide solutions for social housing and immersive learning experiences.



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## BACKGROUND

Bachelor of Science -BS, Computer Games Development with Honours, Class I at Liverpool John Moores University



## SKILLS

- Machine Learning
- Artificial Intelligence (AI)
- Unreal Engine
- Microsoft Visual Studio C++



## INTERESTS

- Metaverse
- Gaming
- Virtual Reality (VR)