Meet the researcher

Immersive Technology Unlocks Genomic Insights

Dr Zhonglin Qu
Immersive Technology
Associate Lecturer
(early-career researcher)

Collaborating Institutions:

UTS (Sydney)
Children's Hospital Westmead
Western Sydney University

The challenge

Genomic data contains vast amounts of biological information that are difficult to interpret using traditional methods. Healthcare professionals often struggle to uncover meaningful insights, making diagnosis and treatment planning complex. There is a need for more intuitive ways to analyse and visualise these intricate datasets.

The solution

Immersive technologies such as virtual, augmented, and mixed reality allow users to interact with data in three dimensions. This creates a more natural and engaging way to explore large datasets. When combined with machine learning, these tools not only enhance visualisation but also improve the accuracy and speed of genomic analysis.

Why it matters

Immersive approaches open the door to more personalised medicine. By seeing and interacting with genomic data in 3D, clinicians can design treatment plans tailored to a patient's unique genetic profile. This has the potential to improve diagnostic accuracy, reduce errors, and lead to better patient outcomes.

Research contribution

Dr Zhonglin Qu has explored how immersive technologies and machine learning can be integrated to improve genomic data visualisation. Her work demonstrates how clinicians and researchers can use these tools to uncover patterns and relationships hidden in complex datasets.

The impact

By enabling real-time, interactive genomic data analysis, Zhonglin's research shows how immersive technology can transform healthcare. It supports more accurate, personalised treatment and represents a step toward redefining medical practice.