**Title:** Immersive Data Visualization in Virtual Environments

**Abstract:** Effective data visualization is critical for the discovery of patterns during data mining and the ability to identify relationships between multiple independent variables. In the era of big data, the high complexity and high dimensionality of modern datasets presents a critical obstacle for current data visualization techniques. How do we visualize patterns that exist in hyper-dimensional data spaces? To approach this problem, we must consider how we perceive and interact with multi-dimensional information and how to most effectively present these data through human-computer interactions. To this end, I will explore the critical factors in the interpretation of shape and space in three-dimensional environments and how the use of immersive data visualization in virtual reality platforms aid in the scientific visualization of complex data structures. Virtual reality is a powerful and innovative tool for multi-dimensional data visualization that has the potential to create immersive and interactive visual spaces for data scientists. Immersion in virtual environments can also allow for a unique perception of scale that would otherwise be nearly impossible in traditional desktop visualization tools. Immersive data visualization can lead to an enhanced perception of complex data spaces, more intuitive interaction with data structures, and better retention of perceived relationships in multi-dimensional data spaces.