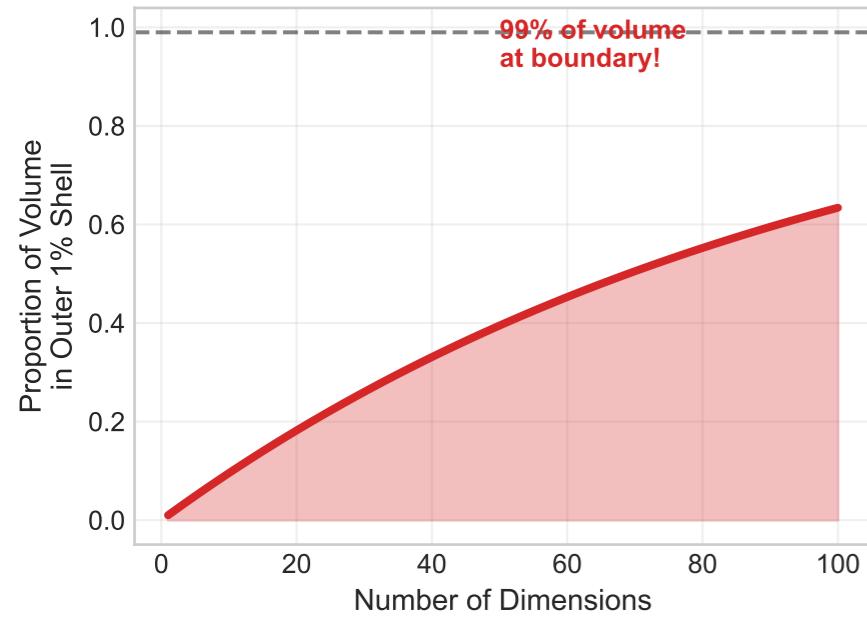
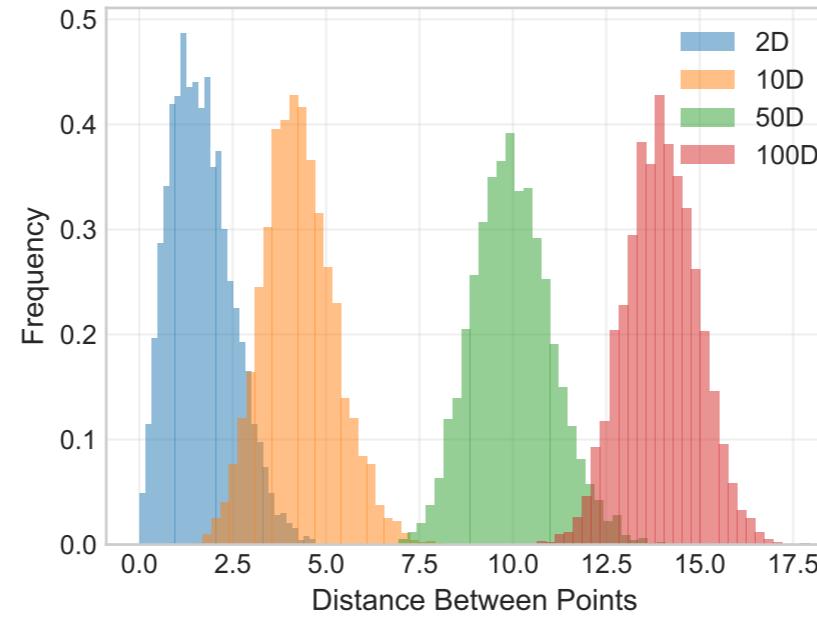


# The Curse of Dimensionality: Why High-Dimensional Spaces Are Strange

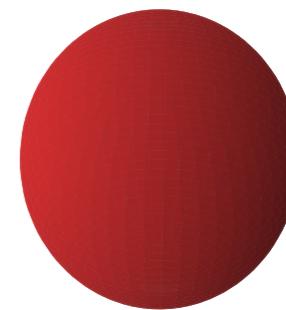
Volume Concentrates at Boundaries



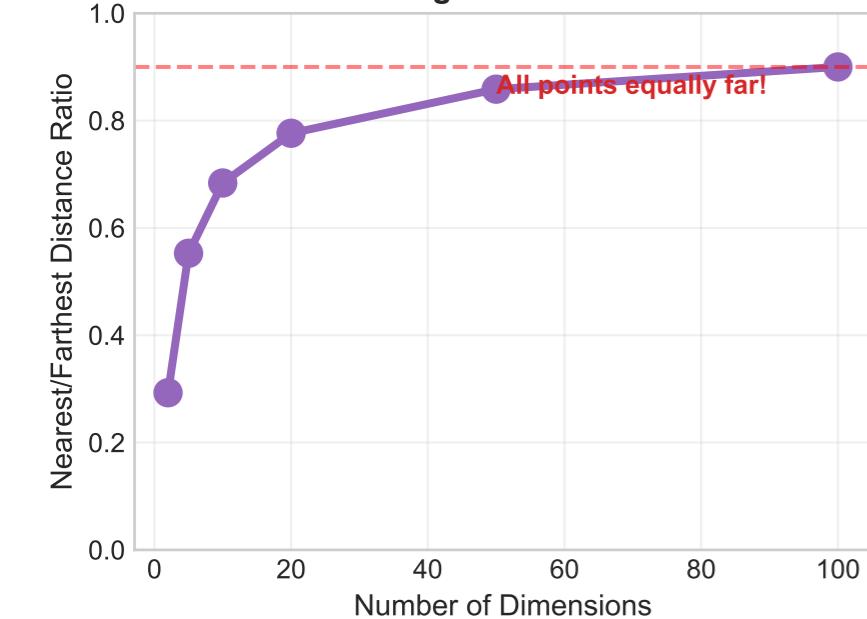
All Points Become Equally Distant



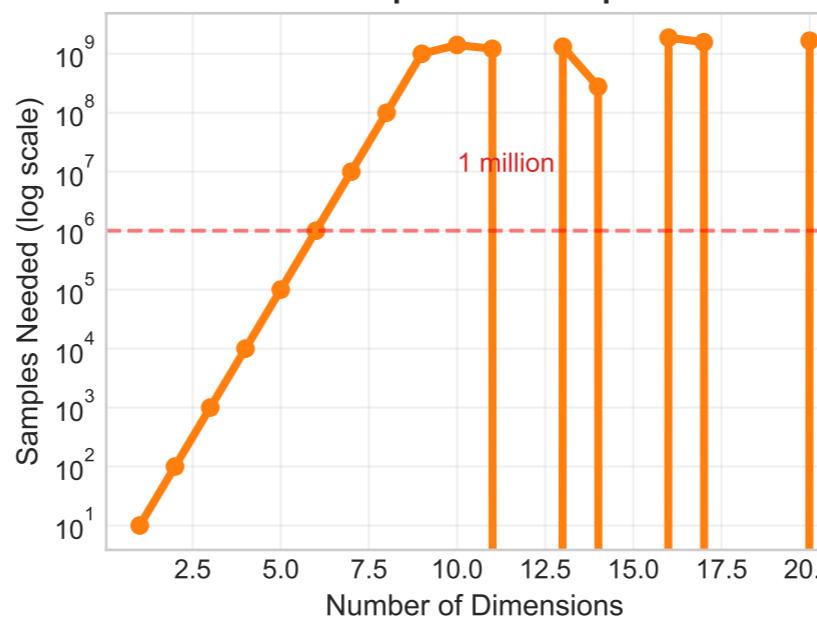
In High Dimensions:  
Everything is on the Surface



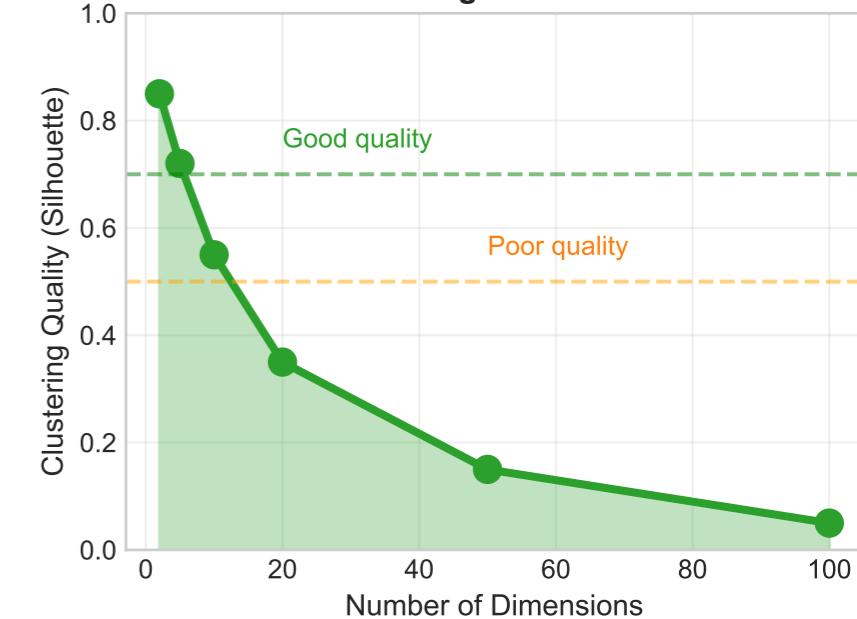
Nearest Neighbors Aren't "Near"



Data Requirements Explode



Clustering Gets Harder



Innovation data has 100+ dimensions - that's why we need specialized ML algorithms!