Geographical Information Systems as a Function of Time

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POSTER

The results of an ongoing historical survey of the Edmonton river valley are to be presented through the creation of novel visualizing techniques for Geographic Information Systems (GIS) as a function of time. One of the major challenges of this endeavor is the presentation of information in a way that conveys geospatial and temporal contexts. We are proposing the use of Gaussian distribution applied to a traditional slider interface as a solution. The Gaussian curve will be centered on the slider, *i.e.* the mean will be set to the center of the slider. The standard deviation of the Gaussian curve is set by the distance from the center of the edges. All geospatial elements are associated with a temporal value. The alpha value for any given element will be assigned using the curve allowing for dynamic control over the opacity of an element. A cut-off threshold of 0.05 prevents an element from being drawn when it is unnecessary, i.e. it is too far into the past or future. This presents a smooth transition between past, present and future elements following the Gaussian curve. We have found that a sigma value of one is desirable. This means that the edges of the slider are one standard deviation away from the center. The Gaussian curve applied to a slider provides a versatile way to plot geospatial information as a function of time.