Urban Tapestry: Weaving Geospatial Data with Social Sentiment to Understand Crime Patterns

The intricate interplay between urban landscapes and societal dynamics is nowhere more profound than in the study of crime trends. This research navigates the demesne of urban criminology through a novel lens by integrating geospatial analysis of land use with sentiment analysis from social media. This work examines how the fabric of urban design influences crime occurrence and public perception. The geospatial component utilizes a comprehensive set of urban data, to map crime hotspots and investigate correlations with urban form. Complementing this, sentiment analysis of social media content offers a pulse on community sentiments towards crime and safety. Despite limitations in geotagged data, innovative natural language processing techniques, aim to approximate spatial sentiment distributions. This bifocal approach not only highlights areas of concern but also elucidates public response to crime, potentially serving as a guide for policy impact. The combination of different types of data are crucial in achieving a multidimensional understanding of crime trends. Geospatial data provides the 'when' and 'where' of crime incidents, allowing you to explore the environmental factors that may influence crime rates. Social media data, on the other hand, offers insights into the 'how' and 'why'—perceptions, public sentiments, and community reactions that isn’t always a priority in crime analysis. Together, they create a holistic picture, revealing not only the quantitative distribution of crime but also the qualitative human experiences associated with it. The presentation undertakes a deep dive into how data-driven insights can empower data and geospatial professionals within research, libraries and archives to craft narratives that blend numbers with nuance, aiding in the design of safer, more resilient urban spaces.