

**Moving Boundaries Inside Honolulu Chinatown:  
Changing Geosemoiotic Boundaries in the  
Linguistic Landscape of Honolulu Chinatown**

With the advent of artificial intelligence (AI) technology, the study of linguistic landscape (LL) has become an increasingly relevant area of research under sociolinguistics. AI has enabled efficient processing and analysis of a large quantity of data that is commonly observed in LL research. In the past decades, LL research has gradually moved from a generally qualitative approach to a more quantitative approach, often incorporating knowledge from geographic information systems (GIS). Ethnic enclaves where multiple languages are present are commonly chosen for LL analysis. This study focused on analyzing LL at the neighborhood level in the Honolulu Chinatown in Hawai'i, incorporating AI for preliminary data treatment, followed by a join count analysis (JCA) to find clustering of signage. This study follows the GIS approach of treating boundaries as peripherals of clusters, and by examining clusters' geographical locations, and how they move between day and night. This study observes that the LL changes in terms of language as well as geographic location within Honolulu Chinatown when transitioning from daytime to nighttime. Specifically, this study observed approximately 53% decrease in Chinese signage in the nighttime, and that daytime and nighttime activity are concentrated at the two opposite sides of Chinatown. The quantitative analysis in this study supports earlier descriptive-based research on the LL nightscape by providing geosemotic analysis using GIS methodologies. GIS-based, AI-incorporated quantitative methods can supplement qualitative and descriptive analysis in LL by providing additional information, such as the movements of LL boundaries, and allow for further investigation into the social interaction aspect of sociolinguistics.