Skylar Myers, Jayden Kisner, Miranda Egan, & Weidong Liao, Dept of Computer and Information Sciences, Shepherd University, Shepherdstown, WV 25443. Exploratory Data Analysis for the Local Housing Market in the Surrounding Area.

This study presents a modern workflow integrating traditional data engineering with generative artificial intelligence (GenAI) to analyze the local housing market in Shepherdstown, West Virginia, and the surrounding tri-state area. The primary objective was to evaluate real estate trends—such as median sale prices, inventory levels, and days on market—while designing a robust AI-assisted analytical pipeline. The methodology involved a multi-step process: first, acquiring localized housing datasets from the Redfin Data Center; second, cleaning and standardizing the data using Python and pandas to handle missing values and filter outliers; and third, employing prompt engineering techniques to utilize Large Language Models (LLMs) for automated trend interpretation and anomaly detection. Initial results demonstrate that, while raw data scraping poses significant challenges due to platform restrictions, structured CSV exports enable seamless integration with AI tools. We conclude that integrating GenAI into exploratory data analysis accelerates the derivation of insights but requires rigorous traditional data cleaning and chained prompting to prevent AI hallucinations. This framework provides a scalable model for applying AI to localized economic data.