Analyzing the performance of Chicago Public Schools with a Bipartite graph model and Community Detection

Introduction:

- Project Background: Started with freedom to explore data.
- Transition: Moved from energy dataset to education dataset.
- Objective: Identify patterns in school performance.

Key Points:

- Dataset Overview: 566 schools, 79 metrics.
- Data Preparation: Identified relevant columns, normalized scores.
- Network Model: Chose Bipartite model for mapping schools to scores.
- Insight Derivation: Community detection based on zip codes, degree centrality analysis, geographic distribution examination.
- Findings: Uneven school distribution, some communities seemed to fare better than others.

Future Directions:

- Explore additional variables and patterns.
- Investigate network manager contributions.
- Further, investigate the possible socio-economic factors that could be causing the distribution of schools and improve the scoring mechanism.
- The availability of more data might help see year-on-year growth.

References:

- ChatGPT and NetworkX documentation.