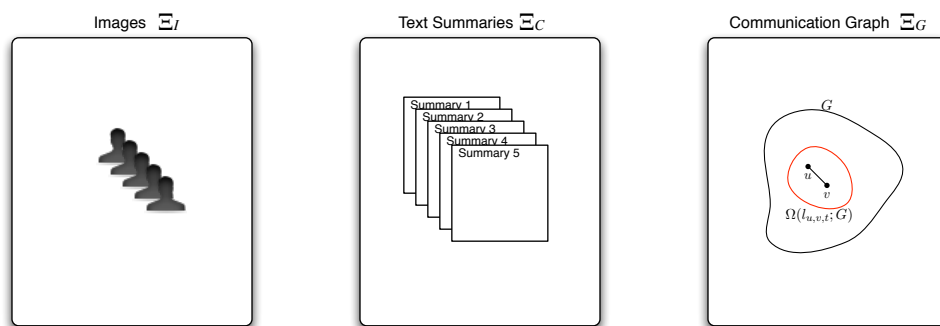


Fusion and Inference from Multiple and Massive Disparate Data Sources

Carey E. Priebe
Johns Hopkins University

National Security Science and Engineering Faculty Fellowship (NSSEFF)
Program

Abstract: This project considers the ubiquitous scenario in which many different types of data are available (e.g., images, text documents, communication records, etc.) and the task is to draw conclusions using computer-assisted statistical pattern recognition techniques. Current approaches process these multiple data sets individually and combine the inferences post facto. This research project aims to develop methodologies for processing the disparate data sources jointly, thereby providing for superior inferential capabilities.



Conceptual depiction of a “disparate information” scenario; each observation may have associated with it images, text documents, and a (time-varying) graph representing its local social structure. Fusing information from these various data types for a given inferential task (e.g. classification) is necessary for successful performance in many modern data analysis applications.