Class Reading Assignment 1: Sociological Foundations

Course: CS 6474 / CS 4803 Social Computing

Grade: 6% of overall course grade (60 points total)

Due Date: the last class of instructional period on April 27
What to hand in: Submit as a single PDF on Canvas

Formatting Guidelines:
- Length: approximately 4 pages single-spaced, 1-inch margins
- Font: at least 11pt, readable serif or sans-serif

Grading Emphasis:
- Explicit connection to lecture discussion points
- Correct use of conceptual vocabulary (tie strength, network constraint, brokerage)
- Reasoning about assumptions, limitations, and tensions noted in the readings and in class, not merely summarizing the readings

Collaboration Policy:
This is an individual assignment. You may discuss high-level ideas with classmates, but all submitted work must be your own. You may not share written responses.

AI Use Policy:
You may use AI-based tools only for proofreading or improving clarity. You may not use AI tools to generate ideas, arguments, or structure. Responses should reflect your own reasoning and engagement with the readings and lectures.

This assignment builds directly on Weeks 1-3 lectures and discussions on small worlds, tie strength, and structural holes.

Part I. Small Worlds and the Limits of Decentralized Search

Q1. Why are short paths abundant, but hard to realize? (20 points)
In class, we emphasized two seemingly contradictory findings from Milgram's chain-letter experiment: that short paths exist in the social network (average 5-6 hops), and yet only a small fraction of chains actually reached the target.

Choose *any one* of the following phenomena and analyze them:

- funneling through a small number of intermediaries ("sociometric stars")
- differences between geographic versus professional routing
- the surprisingly small number of completed chains

For the phenomenon you select:

1. Identify one assumption or constraint in Milgram's experimental design that likely shaped the outcome.
2. Explain how the absence of tie strength information limits what we can conclude.
3. Argue how incorporating tie strength (as later conceptualized by Granovetter or Gilbert & Karahalios) might have changed either the routing behavior or the interpretation of the results.

Part II. Structural Holes, Brokerage, and "Good Ideas"

Q2. Brokerage is not the same as popularity (12 points)

1. In class, we emphasized that brokerage is not equivalent to having many contacts, and that network constraint limits access to novel information. Pick one online platform (e.g., Reddit, TikTok, Discord, Instagram, Stack Overflow). Define what counts as a "good idea" or high-value contribution on this platform. Explain why that is the case.

Q3. Replicating Burt online: what breaks? (8 points)

- We asked in class: What would it mean to replicate Burt's work in online social platforms? Identify one assumption in Burt's study that may not hold online.

Part III. Tie Strength: From Theory to Measurement

Q4. Are "strong," "weak," and "absent" ties enough? (10 points)

- In class, we explicitly questioned whether Granovetter's categories are sufficient for modern social computing systems. Using Granovetter and Gilbert & Karahalios, identify two dimensions of tie strength that are theoretically important but difficult to measure online.

Q5. When should we not prefer weak ties? (10 points)

- Across Weeks 2 and 3, we repeatedly complicated Granovetter's finding that "weak ties are always better." Choose one context discussed in class (e.g., job seeking, emotional support, activism, knowledge work). Argue why strong ties, weak ties, or a combination is most appropriate in that context.