Class Reading Assignment 3: Bridging Offline and Online
Course: CS 6474 / CS 4803 Social Computing

Grade: 4% of overall course grade (40 points total)

Due Date: the last class of instructional period on April 27 | *Earlier submissions encouraged | Earlier submissions will be graded sooner and feedback provided*
What to hand in: Submit as a single PDF on Canvas

Formatting Guidelines:
• Length: approximately 3 pages single-spaced, 1-inch margins
• Font: at least 11pt, readable serif or sans-serif

Grading Emphasis:
- Accurate understanding of methods and evidence.
- Clear interpretation of figures, tables, and analyses in the assigned readings.
- Strong integration of lecture concepts with readings.
- Critical, well-structured, and specific analytical reasoning.

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 Week 5 lectures and discussions on bridging offline and online aspects via language and viewed through the lens of social movements.

Question 1: Circadian Mood and the Limits of Self-Report

This question asks you to evaluate large-scale computational mood measurement as an alternative to laboratory psychology.

(a) WEIRD Critique and Ecological Validity (6 points)
Using the lecture discussion of WEIRD (Western, Educated, Industrialized, Rich, and Democratic) sampling (Week 5, Feb 9 slides) and Golder & Macy's methods:

    i.   Explain how Twitter-based mood measurement addresses the "science of undergraduates" problem.
    ii.   What methodological shift does social media enable that traditional lab studies could not?

(b) Remaining Limitations (5 points)
Despite scale, this approach, by Golder & Macy, still has constraints, as noted during the class. Analyze any one methodological limitation, choosing from (but not limited to):

- Expression versus experience gap
- Cultural display rules
- Platform filtering effects
- Linguistic measurement constraints

For the chosen limitation, describe how it could distort findings.

Question 2: Stress, Crisis, and Linguistic Signatures

This question evaluates whether and how computational models can detect crisis-induced psychological disruption.

(a) Identifying Acute versus Chronic Stress (4 points)
The Saha & De Choudhury argue that gun violence produces acute disruption beyond baseline campus stress. How does the study distinguishes baseline chronic stress from acute disruption?

(b) Platform Bias and Ethical Risk (5 points)
The study relies on Reddit data. Critically evaluate, connecting to the lecture discussion of platform bias:

    i.   How can platform affordances (anonymity, subreddit structure, moderation) shape the stress signal?
    ii.   Identify one ethical risk of deploying such models in real time.

Question 3: Designing a Study: Authentic Emotion versus Display

One core challenge in social computing research is distinguishing expressed emotion from experienced emotion – a topic raised during the discussion of Golder & Macy. Design a rigorous empirical study to evaluate whether social media emotion reflects internal emotional states. Your proposal must include the following four components:

(a) Ground Truth Measurement (4 points)
Propose a method to measure "true" emotion, explaining why this method captures internal state. Options might include:

- Daily surveys/self-reports
- Wearable physiological sensors
- Smartphone prompts
- Sleep or cortisol tracking

(b) Computational Operationalization (4 points)
Define how you would measure displayed emotion from social media, also explaining why your choice fits the problem. Example methods could be (but not limited to):

- Lexicon-based (LIWC? POMS?)
- Open vocabulary?
- Context-aware embeddings?
- Temporal smoothing?

(c) Hypothesis About Divergence Conditions (4 points)
Propose one theoretically grounded condition under which displayed emotion could diverge from experienced emotion and explain why. Example conditions could be (but not limited to):

- High audience visibility
- Political identity signaling
- Platform affordances (e.g., "Like" button)
- Algorithmic amplification
- Strong vs weak tie audiences

Question 4: Who Drives Information?
Drawing on Lotan et al.'s "The Revolutions Were Tweeted" and De Choudhury et al.'s "Social Media Participation in BLM",

(a) Compare how actor types function differently in the Egypt/Tunisia case versus BLM. Use at least one figure or table from Lotan et al. and at least one regression finding from De Choudhury et al. (4 points)

(b) In which case is mainstream media structurally central? In which case are individuals (bloggers/activists) more central? Why? (4 points)