UNDERSTANDING EMOTIONAL AI: THE COMPLEXITIES OF DATA MANAGEMENT AND USER-DEVELOPER PERCEPTION

RESEARCH PROPOSAL PRESENTATION

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INTRODUCTION

- Emotional AI: AI systems that can read, track, and even display human emotions (McStay, 2018).
- Picard (2000)'s "affective computing"
- The intelligence of current AI systems can be explained by three factors (Mitchell, 2019):
 - The rise of big HUMAN-LABELED data
 - The decline of computing power cost
 - *TUNING THE "hyperparameters"*

→ INACCURACY AND MISUSE

LITERATURE REVIEW

- A lack of discussion on the implications of the scientific theories of emotions for emotional AI (McStay, 2018; Barrett, 2017; Wilson, 2010; DeLancey, 2001)
- A lack of research on perception on emotional AI in the **workplace**
- A lack of **cross-cultural** research on non-conscious data collection (Sarwar, et al., 2019; Brougham & Haar, 2017; Shen et al., 2020; Pinto dos Santos, et al., 2019).

RESEARCH QUESTIONS

- The AI's social sciences deficit problem (Sloane and Moss, 2019)
 - What are the major assumptions about data on emotions among AI engineers?
 - Is there a disconnect between emotional AI engineer and humanities research about emotions?
- Lack of research on the perception of emotional AI in the **workplace**:
 - How do socio-demographic and political factors influence the perception of AI in the workplace?
 - How do socio-demographic and political factors influence the perception non-conscious data collection?

HYPOTHESES

Complexities of data management

- Most datasets on emotion used to train AI systems rely on *universality emotion hypothesis*.
- Emotion AI's social science deficit hypotheses:
 - The lack of awareness among emotional AI engineers about scientific theories of emotion
 - The lack of concerns about the ethics of emotion AI.

User perception

- Sex
- Higher income household
- Religions
- Religiosity
- Major/Industry
- Job position
- Higher income countries
- Democratic vs non democratic countries

Attitude
and
Perception

METHODOLOGY

- **Systematic Review**
- Web of science database from 2000 'til now
- Search key words: “affective computing,” “emotional artificial intelligence,” “artificial emotional intelligence,” “social robotics,” “sentiment analysis” “AI ethics”
- Random sampling of the query (N=200)
- Systematic categorization of the random sample:
 - Technical papers vs humanities papers
 - What datasets on emotions are used? (Facial expressions, biometrics, etc.)
 - Assumptions of emotion data: Essentialist vs constructionist
 - Mention Ethical concern about data?
 - Mention Limitations of data?
 - Public funding vs private funding

- **Survey**
 - Students
 - Professionals
 - AI engineers
- **Convenient sampling method**
- Bayesian regression analysis (Vuong et al., 2018; Vuong et al., 2020)

IMPLICATIONS AND LIMITATIONS

- Implications
 - AI ethics discourse
 - Workplace surveillance discourse
- Limitations
 - Sampling method
 - Search key words

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