Emotional A.I. research: The importance of data-philosophizing to account for cultural differences

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The discourse on emotional A.I., i.e., technologies that read, classify, identify human emotions, is currently dominated by Western ideas[1]. Yet, even A.I. researchers in the West acknowledge there are cultural differences if neglected could magnify and affect A.I.'s accuracy.

For example, many emotional surveillance technologies use the framework of eight basic emotions of Paul Ekman to record, classify, and store their data[1,2]. However, just a brief look at comparative psychology literature, one can find many subtle differences in the way people express and interpret emotions. For instance, there are apparent differences between the way Japanese and American subjects read and infer emotions.[3] The feeling of losing one's face seems to be entirely unaccounted for in Ekman's framework.[4]

In the age of A.I., when more decisions are being delegated to smart algorithms, and there is a growing population of consumers and businesses in these non-dominant cultures, academics and engineers need to explore how newly-developed algorithms can account for these subtle differences in emotional displays and inferences worldwide.

I believe that researchers should always take a step back and carefully philosophize about data to account for these differences. I think there are four categories of philosophizing:

1. Data unit: What counts as valid data for emotional recording? How should the data be structured?
2. Data storage and management: How should the data be cleaned and processed?
3. Data analysis: What statistical techniques are appropriate in mining these datasets?

4. Social structures beyond individual data: How should researchers account for the broader social hierarchies/framework that might affect emotional display? For example, people in Confucian cultures are susceptible to social harmony and hierarchy[5,6], and this should have clear implications for emotional display and expressions. Thus, how should emotional A.I. engineers capture such nuances in their technologies?

Then another essential discussion point is that in the age of open science,[7] open data[8] should be a guiding principle for researchers in the emerging field of emotional A.I. By publicly sharing data and as well as the philosophies behind them, academia can quickly close the research gap mentioned above.

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