

The Search for Emotions, Creativity, and Fairness in Language

Saif M. Mohammad

National Research Council, Canada

Saif.Mohammad@nrc-cnrc.gc.ca

Emotions are central to human experience, creativity, and behavior. They are crucial for organizing meaning and reasoning about the world we live in. They are ubiquitous and everyday, yet complex and nuanced. In this talk, I will describe our work on the search for emotions in language – by humans (through data annotation projects) and by machines (in automatic emotion detection systems).

I will outline ways in which emotions can be represented, challenges in obtaining reliable annotations, and approaches that lead to high-quality annotations. The lexicons thus created have entries for tens of thousands of terms. They provide fine-grained scores for basic emotions as well as for valence, arousal, and dominance (argued by some to be the core dimensions of meaning). They have wide-ranging applications in natural language processing, psychology, social sciences, digital humanities, and computational creativity. I will highlight some of the applications we have explored in literary analysis and automatic text-based music generation. I will also discuss new sentiment analysis tasks such as inferring fine-grained emotion intensity and stance from tweets, as well as detecting emotions evoked by art. I will conclude with work on quantifying biases in the way language is used and the impact of such biases on automatic emotion detection systems. From social media to home assistants, from privacy concerns to neuro-cognitive persuasion, never has natural language processing been more influential, more fraught with controversy, and more entrenched in everyday life. Thus as a community, we are uniquely positioned to make substantial impact by building applications that are not only compelling and creative but also facilitators of social equity and fairness.