

Inferring Mental States from Language Text

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People communicate more than just semantic content in their messages – they also transmit subtle information about their mental states, which can include the emotions they’re experiencing, the intentions they have, and the attitudes they hold. Importantly, this information appears to be present even when only the language text is available, as shown by human ability to automatically extract this information from text data. However, machine learning extraction approaches and our understanding of the psychological processes behind the transmission of this information have lagged behind, often because sufficient annotated data are not available.

I will describe a methodology for creating databases of messages annotated with mental state data, based on online interactive games between humans trying to generate and interpret messages for a number of different mental states. I will then present some classification results achieved by using a selection of supervised machine learning algorithms on a small-scale database created with this methodology. In addition, I will describe a way to use these data to examine a fundamental assumption behind many generative models in both machine learning and cognitive process models, called analysis by synthesis.