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Elicitation and Assessment of Emotion in Computational Rationality

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Abstract

Computational modelling of human emotion has a promising outlook within the approach of computational rationality, which formalises adaptive behaviour as a bounded optimisation problem. However, testing different hypothetical emotion models under this approach is hindered by lack of structured data, that have been collected in experimentation coherent with the underlying formal assumptions. Here, we design an interactive task that is used to elicit and assess emotion, and aligns with the problem solving formalism of a partially observable Markov decision problem. From the literature on emotion modelling, we derive hypotheses about what affects emotional responses, and use the collected data to test the hypotheses. We demonstrate how emotion can be assessed in a semi-continuous manner throughout the trials of the experiment, and in a way that can be used to test computational rationality models of emotion.