

Textual inference for eligibility criteria resolution in clinical trials.

Chaitanya Shivade, Courtney Hebert, Marcelo Lopetegui, Marie-Catherine de Marneffe, Eric Fosler-Lussier, Albert M. Lai

Abstract

Clinical trials are essential for determining whether new interventions are effective. In order to determine the eligibility of patients to enroll into these trials, clinical trial coordinators often perform a manual review of clinical notes in the electronic health record of patients. This is a very time-consuming and exhausting task. Efforts in this process can be expedited if these coordinators are directed toward specific parts of the text that are relevant for eligibility determination. In this study, we describe the creation of a dataset that can be used to evaluate automated methods capable of identifying sentences in a note that are relevant for screening a patient's eligibility in clinical trials. Using this dataset, we also present results for four simple methods in natural language processing that can be used to automate this task. We found that this is a challenging task (maximum F-score=26.25), but it is a promising direction for further research.