

# **A Reinforcement Learning Framework for Eliciting High Quality Information**

**Paper ID: 2420**

## **Abstract**

Improper task assignment will significantly degrade label accuracy in crowd labeling. In this paper, we formulate a framework to improve task assignment with online variational inference. One distinct advantage is that it can incorporate different worker models. Another is its novel prediction-based task assignment strategy to select the assignment with the maximum accuracy increment. To improve accuracy, we keep the prediction optimistic but modulate the scope of task assignment according to the uncertainty measurement of online inference. To improve efficiency, we develop an approximation algorithm for variational inference. The extensive experiments on two popular worker models and four MTurk datasets show that our framework not only achieves the highest label accuracy but also the best computation efficiency.

## **Introduction**