Decision Processes Colloquia

Monday, October 22, 2018

Where: 350 JMHH

When: 12:00 – 1:15 pm

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Extracting More Wisdom from the Crowd

ABSTRACT:

In many situations, from economists predicting unemployment rates to chemists estimating fuel safety, individuals have differing opinions or predictions. We consider the wisdom-of-the-crowd problem of aggregating the judgments of multiple individuals on a single question, when no outside information about their competence is available. Many standard methods select the most popular answer, after correcting for variations in confidence. Using a formal model, we prove that any such method can fail even if based on perfect Bayesian estimates of individual confidence, or, more generally, on Bayesian posterior probabilities. Our model suggests a new method for aggregating opinions: select the answer that is more popular than people predict. We derive theoretical conditions under which this new method is guaranteed to work, and generalize it to questions with more than two possible answers. We conduct empirical tests in which respondents are asked for both their own answer to some question and their prediction about the distribution of answers given by other people, and show that our new method outperforms majority and confidence-weighted voting in a range of domains including geography and trivia questions, laypeople and professionals judging art prices, and dermatologists evaluating skin lesions.

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