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Distilling the Wisdom of Crowds: Combining Probability Distributions by Averaging Quantiles

In seeking to capture the essence of the wisdom of a crowd, simple averages of point forecasts are often used. To combine probability distributions, the ease of simple averaging is extended to probabilities. Averaging quantiles is another way to use simple averaging in the spirit of the wisdom of crowds to combine probability distributions. I will discuss the results of a study with Casey Lichtendahl and Yael Grushka-Cockayne comparing average probability forecasts with average quantile forecasts. We develop theoretical results and also generate empirical results using data from the Survey of Professional Forecasters. Both the theoretical and empirical results show promising advantages for averaging quantiles instead of averaging probabilities.