

# Ensemble Learning: Classification and Variable Selection

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In this talk, I will share some of our recent research in the area of ensemble learning. First, I will describe two algorithms that apply the ensemble approach to the problem of variable selection (rather than prediction). I will advocate that variable ranking may be a more useful objective in practice than variable selection, and that the ensemble approach is more naturally suited for such an objective.

Second, I will present a theory of synergy for combining two classifiers. Our theory has an interesting sociological aspect, implying that two decision-making entities (e.g., husband and wife, Democrats and Republicans) can work better together only if someone is sometimes willing to stay neutral. I will also mention some open questions. (Based on joint work with Hugh Chipman, Lu Xin, and Shangsi Wang, in chronological order.)