

Optimal treatment decision by a combined moderator

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Abstract: To practice personalized medicine, one may look for all possible qualitative interactions with treatment and prescribe different treatment options based on patients' individual characteristics. Existing trial data and observational studies are often utilized to search for qualitative moderators. However, such exploratory analyses may lead to spurious interactions, especially when a long list of variables are tested for interaction. In this talk, we will discuss an "optimal" moderator that is a weighted combination of promising treatment modifiers, where the weights depend on the strengths of interaction in individual contributors. A stabilizing procedure will be used to make weights less dependent on a particular dataset. We will illustrate the methods by searching for personalized optimal treatment option in a smoking cessation study.