



THE UNIVERSITY OF
CHICAGO

Department of Statistics

MASTER'S THESIS PRESENTATION

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Conditional Permutation Test and Its Applications
in Testing Conditional Independence

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ABSTRACT

In this paper, we introduce Conditional Randomization Test (CRT) as a method to test conditional independence between the response and the covariate of interest given other covariates. Specifically, based on previous work, we propose a new way to generate "knockoff" variables through permutations and provide proof to show that our new "knockoff" variables work. In the end, we give simulations results that show CRT tends to be more robust than previous cases under certain circumstances when our knowledge is not correct.