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Second-Party Data Acquisition for Business Analytics

Completed Research Paper

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ABSTRACT

The emerging second-party data marketplace opens up unrivaled opportunities for organizations to perform individual-level customer analytics. The second-party data market enables an organization to acquire customer data, including the customers' individual transaction records or online behavior data, from the data owner that originally collects the data directly from its customers. This paper concerns individual-level second-party data acquisition under a budget constraint. Specifically, we focus on the problem of how to determine a set of customers whose data add most values to the organization for business analytics. We model customer purchase behaviors using a hierarchical Bayesian modeling approach. We propose a novel data selection method for organizations to acquire individual-level data such that the acquired data are most useful for business analytics problems. We evaluate the proposed method in an experimental study using real-world data. The results of the experimental evaluation demonstrate the effectiveness of our approach.

Keywords

Second-party data acquisition, data quality, data science, predictive analytics.