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A game theoretic approach to value information in data mining. (English) [Zbl 1026.91029](#)

Gao, Hongwei (ed.) et al., ICM2002GTA proceedings volume. International congress of mathematicians. Game theory and applications, satellite conference, Qingdao, China, August 14-17, 2002. Qingdao: Qingdao Publishing House. 659-678 (2002).

Summary: This paper uses a game-theoretic framework to suggest a fair value for information extracted via data mining and shared between two retail market competitor firms. Neither firm has a dominant position in that market. Specifically, the two players each owning a privileged information set (a collection of data) may want to share or pool that information for mutual benefit. Assume that each player is equipped with a data mining technique which extracts information from the data. We first model the information sharing as a cooperative game. Then we use results from the cost sharing literature to provide information sharing methods when data can be quantified either as discrete or as continuous variables. In the latter case, we provide a means for obtaining decision rules for pricing shared information.

For the entire collection see [\[Zbl 0996.00055\]](#).

MSC:

[91A80](#) Applications of game theory

[91B26](#) Auctions, bargaining, bidding and selling, and other market models

[91A12](#) Cooperative games

Keywords:

[information](#); [data mining](#); [information sharing](#); [cooperative game](#); [cost sharing](#)