

Tackling the Velocity of Big Data: Optimal Policy for Refreshing Knowledge Discovered from Data

Knowledge extracted using a broad variety of data mining techniques from massive amounts of consumer behavioral, social networking, business transaction, law enforcement or clinical data has increased the value of behavior targeting marketing campaigns, improved the quality of health, customer and government services, and facilitated supply chain and other day-to-day management decision making. To sustain these data driven values, Google and IBM, for example, have indicated that one of the main issues is to maintain the currency of knowledge over evolving customer and transaction data. In “When Is the Right Time to Refresh Knowledge Discovered from Data?”, X. Fang, O. R. Liu Sheng, and P. Goes address this issue from the perspective of deciding on when to re-discover knowledge – namely the problem of knowledge refreshing. The paper has two main managerial implications. First, the in-depth analysis of knowledge loss provides knowledge-driven organizations the understanding of the need and the foundation for managing knowledge loss. Second, the paper presents a practical, automated knowledge management tool to decide on when to refresh discovered knowledge by simultaneously minimizing knowledge loss and knowledge refreshing cost. The tool will greatly sustain the value of fast growing data mining applications.