More Efficient Data Analysis for Web Shops

KIT Students Win International Competition on Data Analysis for the Development of an Algorithm for Product Recommendation in E-Commerce Systems

Searching for the needle in the haystack? "Data mining" helps to handle the gigantic data volumes on the internet. (Photo: photocase.de)

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Students of informatics from Karlsruhe Institute of Technology (KIT) reached one of the two first places in the international DATA MINING Cup 2011. They developed an algorithm for recommendations in web shops. Compared to the other solutions, this algorithm most frequently suggested those products that were then looked at and purchased by the customers. With their idea, the KIT students won over 103 other teams from 83 universities in 20 countries.

Whoever goes shopping on the internet, knows the inserted recommendations. But how does the web shop know, which products are of interest to the customers? Recommender systems offer orientation in the jungle of offers. And also for suppliers, these recommendations are worth a lot of money, as they frequently stimulate the customers to buy things that were not even considered before. This year's DATA MINING Cup was therefore aimed at developing an algorithm for recommender systems.

In a world determined by information, data mining is of high relevance to science and industry: Newly developed analysis methods allow for the extraction of knowledge from large and complex data

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inventories. These data analysis techniques are also essential for the development of recommender systems.

However, the large data volumes to be processed in real time represent big challenges. A product recommendation has to be calculated as quickly as possible, and this not only for one customer, but for thousands of different customers at the same time. This task was solved best by the 22 students of informatics from KIT at the 2011 Data Mining Cup: Their solution of a real-time analysis of data flows convinced the jury most. The students developed an efficient algorithm that, compared to the solutions of the other teams, most frequently suggested those products that were then looked at and purchased by the customers of the web shop.

Professor Klemens Böhm, who supervises the practical exercise "Data Warehousing und Mining" at the Institute for Program Structures and Data Organization, is proud of the performance of his team: "The students successfully applied basic theory of data analysis to develop product recommendations relevant to everyday life. Consequently, we are very pleased with their success." For several years now, students of informatics from KIT have been participating successfully in the Data Mining Cup within the framework of a practical exercise at the Chair for Systems of Information Administration.

Karlsruhe Institute of Technology (KIT) is a public corporation according to the legislation of the state of Baden-Württemberg. It fulfills the mission of a university and the mission of a national research center of the Helmholtz Association. KIT focuses on a knowledge triangle that links the tasks of research, teaching, and innovation.

This press release is available on the internet at www.kit.edu.