On the Relation Between Products' Relevance and Customers' Satisfaction in Voice Shopping

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ABSTRACT

In this talk we consider the domain of voice shopping in Alexa, Amazon's voice assistant. In this domain, search scenarios are integral part of the shopping sessions, where users seek for a product to buy, or for some information about a product. The fact that in voice search, both the input and output are spoken, involves many challenges in automatic speech recognition, natural language understanding, question answering, and new user experiences. We will elaborate on customers' behavior in voice shopping, where we have observed an interesting and surprising phenomenon that many customers purchase or engage with irrelevant search results. The term "irrelevance" may mislead, since a relevant item is typically interpreted as "anything that satisfies the user needs". Thus, the title of this work may look as an oxymoron – the purchase of a product is a strong signal of relevance to the customer. In the context of this work we take a simplified approach. We mark product items as relevant or irrelevant to the user query based on the relevance judgments of several human annotators. However, even in the context of objective relevance judgments, it is still surprising that so many customers engage with irrelevant results. We will analyze this phenomenon and demonstrate its significance. We will offer several hypotheses as to the reasons behind customers' purchase and engagement with irrelevant results, including customers' personal preferences, trendiness of the products and their relatedness to the query, the query intent and the product price.

CCS CONCEPTS

• **Information systems → Users and interactive retrieval**; *Information retrieval*;

KEYWORDS

Voice shopping, user satisfaction, product relevance

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1 BIOGRAPHY

David is a Principal Applied Scientist at Amazon Research, and an ACM Distinguished Engineer. David's research is focused on search, question answering, query performance prediction, and text mining. For several years David taught the Introduction to IR course at the CS department at Haifa University. David has published more than 100 papers in IR and Web journals and conferences, and serves on the editorial board of the IR journal and as a senior PC member or as Area Chair of many ACM conferences (SIGIR, WWW, WSDM. CIKM). He organized a number of workshops and taught several tutorials at SIGIR, and WWW. David is co-author of the book "Estimating the Query Difficulty for Information Retrieval", published in 2010. David earned his PhD in Computer Science from the Technion, Israel Institute of Technology in 1997.