

Social Impact of Text Information Systems

Will Hennessy

Stephen Herring

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Abstract

Text search engines like Google and Bing respond to billions of queries a day and this power has made a significant impact on society. We propose two main areas of research in which we study the effects of search engines: business and politics.

Business has benefitted immensely from the advent of Text Information Systems. Google and Bing contain complex components such as indexers and ranking functions, but the most complicated constraints for these search engines are those pertaining to the business strategy. The search engine must return relevant advertisements and sponsored pages, ranked within a list of relevant documents. Furthermore, these search engines have reinvented the marketing industry. How does the architecture incorporate ever-changing needs from the millions of advertising clients? How does the system return relevant advertisements based on query terms and user profiles? Less obviously, every company on earth employs a text system internally to assist employees in their work. How are text systems designed to support these business needs?

Politics has been both positively and negatively impacted by text retrieval systems. Information is now readily available to a democratic constituency which aids in the election process. It has also generated a more informed citizenship to the betterment of society. However, search engines are also precariously perched as a monopolistic source of information and have come under scrutiny for their results. Google and Bing have been accused of (intentionally or not) returning polarized political articles for queries such as "Barack Obama news". How does one design a search engine to mitigate these problems?

In order to design a successful text information system, it is critical to understand the impact this technology has on the world. Business and politics are the two most critical social constructs and together, they lay the foundation for a first-world society.

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