The Inevitable Cycle: Graphical Tools and Programming Paradigms
pp. 24-30
Jiri Soukup and Martin Soukup

Programmers keep writing programs that grow more complex until their own authors can’t safely debug or modify them. At that point, those in the industry invent and use various graphical tools, and programmers resurrect the idea of programming in pictures. Then someone proposes a new paradigm or language that makes programs more manageable. With the new technology, they begin to handle more complex problems, programs grow bigger—and another cycle begins.

Three cases demonstrate this cycle: Structured programming eliminated flowcharts, pointers and structures eliminated Fortran table diagrams, and object-oriented programming with class libraries eliminated the pointer diagrams popular in the 1980s.

Search Engines that Learn from Implicit Feedback
pp. 34-40
Thorsten Joachims and Filip Radlinski

Unlike surveys or other types of explicit feedback, implicit feedback is essentially free, reflects the search engine’s natural use, and is specific to a particular user and collection. A smart search engine could use this implicit feedback to learn personalized ranking functions. But while it seems intuitive that implicit feedback can provide the information for personalization and domain adaptation, it isn’t clear how a search engine can operationalize this information.

The authors show how, through proper interpretation and experiment design, implicit feedback can provide cheap and accurate training data in the form of pairwise preferences. They provide a machine-learning algorithm that can use these preferences and demonstrate how to integrate everything in an operational search engine that learns.

A Community-Based Approach to Personalizing Web Search
pp. 42-50
Barry Smyth

Some researchers solved the problem of how documents should be ranked and ordered when they realized that ranking could be improved by evaluating the importance or authoritiveness of a particular document. By analyzing document links it became possible to evaluate the relative importance within the wider Web.

Ideally, the notion that searchers themselves could influence the ranking of results by virtue of their search activities will lead to an improved personalized search experience that delivers more relevant result pages that reflect the experiences of a community of users.

Sponsored Search: Is Money a Motivator for Providing Relevant Results?
pp. 52-57
Bernard J. Jansen and Amanda Spink

In today’s competitive search-engine market, rivals continually strive to improve their information-retrieval capabilities and increase their financial returns. One innovation, sponsored search, is an “economics meets search” model in which content providers pay search engines for user traffic going from the search engine to their Web site.

Yet research indicates that people have a negative bias against sponsored links. Are Web search engines doing users a disservice by highlighting sponsored results so prominently? Would combining sponsored and nonsponsored results in a single listing benefit searchers as well as result in an increase in clicks on sponsored links? To explore these questions, the authors analyzed the transaction log of more than 7 million records from a major metasearch engine that combines sponsored and nonsponsored links in a single listing.

Deciphering Trends in Mobile Search,
pp. 58-62
Maryam Kamvar and Shumeet Baluja

With 76 percent of the US population subscribing to cell-phone service in 2006, the potential impact of wireless applications is enormous. Understanding the unique needs of mobile search will help improve the user experience and increase the service’s usage.

The authors analyzed data from more than 1 million page-view requests randomly sampled from Google logs during a one-month period earlier this year. The requests were anonymous. To eliminate confounding factors between different carriers, the examination was restricted to a single US carrier. At the time of this study, the Google mobile interface presented users with the option of searching four information repositories: Web, local, image, and mobile Web. To allow accurate comparisons with wired searches, the authors concentrated their study on Web queries.

Toward a PeopleWeb
pp. 63-72
Raghu Ramakrishnan and Andrew Tomkins

Two emerging capabilities will significantly impact online activity. The first involves data and will let users create, reference, annotate, and interact with important objects to produce semantically rich content. The second capability involves people and will let users create portable social environments that follow them as they interact online.

The emergence of a global object model that enables creation of richer structured content and a portable social environment that facilitates user-centric rather than site-centric communities will radically transform the way people interact online and discover information. This PeopleWeb presents numerous challenges and opportunities from both a technical and commercial perspective.