CACM Reports: Reading News with Maps

October 2014 Issue Reports on How Certificate Transparency Prevents Security Breaches; Adapting to New Technologies in Higher Education; and Rethinking How We Compute

Researchers from the University of Maryland have developed an application called NewsStand that enables users to search data when they are not sure what they are seeking. NewsStand, based on a map-query interface, monitors the output of more than 10,000 RSS news sources within minutes of publication. It also associates articles with the locations they mention. This approach harnesses the power of spatial synonyms which facilitate approximate searches, providing inherent granularity to the search process. Check out the video for this cover story, which illustrates the process. http://vimeo.com/106352925

- Software engineer Ben Laurie of Google cites recent incidents of compromised certificate authority (CA) that have resulted in security breaches around the globe. After analyzing alternatives to the CA, he proposes a solution known as certificate transparency. This approach, which is under active development at Google, relies on public, verifiable, append-only logs that are cryptographically verifiable and make it impossible to mis-issue a certificate without detection.

- Technology is enabling many new ideas for higher education, observes Henry Lucas of the University of Maryland. He cites examples of the transformation in higher education that reflect blended courses, online learning, and MOOCs (massive, open online courses), to highlight the opportunities and threats of these alternatives, and urges these institutions to modify their business models in response to these disruptions.

- ACM Past President Vint Cerf surveys recent developments in unconventional computing methods, which are presenting serious opportunities for rethinking how we may compute. He says these new technologies—quantum computers, neural chips, brain-inspired chips—present challenges to academic, research, and practitioner communities to abandon or adapt past practices and consider ways to leverage these changes.

- Many novel applications have been implemented with software-defined networking (SDN), according to researchers from VMWare, Cornell University, and the University of Massachusetts. The role of SDN makes it possible to evolve functionality of a network without having to change the underlying hardware. The resulting abstractions, which exploit the ability to write network control software, are critical for achieving SDN’s goals and may become its most lasting legacy.

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