Generative AI and the Future of Information Access

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ABSTRACT

The prominent model of retrieving, evaluating, and using relevant information from databases, collections, and the web is going through a significant transformation. This is largely due to wide-scale availability of various generative AI systems that can take in natural language inputs and generate highly customized natural language text, images, audio, and videos. This transformation in how people seek and access information will have profound impacts on users, developers, and policymakers. It is already changing many sectors including education, health, and commerce. But the hopes and hypes of generative AI are often not clear as we get swept up by either the current capabilities and limitations of this technology in the short term or fear from speculative future in the long term. Instead, I believe we need to approach this area pragmatically and with scientific curiosity, scholarly rigor, and societal responsibility. In this talk, I will highlight some of the opportunities and challenges for information access stemming from recent advancements in generative AI. For instance, there are new possibilities now for addressing accessibility, low-resource domains, and bias in training data using generative AI tools. On the other hand, there are new challenges concerning hallucination, toxicity, and information provenance. It is clear that we want to benefit from what AI systems are capable of, but how do we do that while curbing some of these problems? I will argue that the solution is multifaceted and complex – some will require technical advancements and others will call for policy changes. We will need to not only build information systems with fairness, transparency, and accountability in mind, but also train a new generation of developers, policymakers, and of course the users. The goal here is to cut through both hype and fear and think pragmatically about the future of information access.

CCS CONCEPTS

• **Computing methodologies** → **Artificial intelligence**; • **Information systems** → **Users and interactive retrieval**.

KEYWORDS

Generative AI, Information Access

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BIOGRAPHY

Chirag Shah is Professor of Information and Computer Science at University of Washington (UW) in Seattle. He is the Founding Director for InfoSeeking Lab and Founding Co-Director of Center for Responsibility in AI Systems & Experiences (RAISE). He works in the area of intelligent information access systems, focusing on task-oriented search, proactive recommendations, and conversational systems. He is also engaged in work with generative AI, specifically in information access using large language models (LLMs). In addition to creating AI-driven information access systems that provide more personalized reactive and proactive recommendations, he is also focusing on making such systems transparent, fair, and free of biases.

Shah is a Distinguished Member of Association of Computing Machinery (ACM) as well as Association for Information Science & Technology (ASIS&T). He is the recipient of 2019 Microsoft BCS/IRSG Karen Spärck Jones Award. He has published nearly 200 peer-reviewed articles and authored seven books, including text books on data science and machine learning. He also works closely with industrial research labs on cutting-edge problems, typically as a visiting researcher. The most recent engagements included Amazon, Getty Images, Microsoft Research, and Spotify.