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Measuring the Generative Information Retrieval Universe

Maarten de Rijke
University of Amsterdam

ABSTRACT

Generative information retrieval is a promising neural retrieval paradigm that integrates all information in a corpus into a single, consolidated model. It formulates document retrieval as a document identifier (docid) generation task, allowing for end-to-end optimization toward a unified global retrieval objective. The generative information retrieval paradigm comes with a range of interesting evaluation questions. How can we gain insights in the inner workings of such end-to-end learnable pipelines? How do we know whether the retrieval model has "indexed" a corpus correctly? A generative retrieval model's interconnected nature means that even small errors or changes in one component can lead to outsized impacts on overall performance, making the debugging process more complex and time-consuming. How do we establish some level of trustworthiness, in terms of reliability, resilience, and reproducibility? Typically formulated as a sequence-to-sequence learning problem, generative information retrieval lends naturally itself to combinations with a range of long-term optimization goals that go beyond short-term accuracy-based retrieval success. What are meaningful ways of probing and assessing generative information retrieval models that are being trained for long-term beyond-accuracy goals? In the talk I will present a range of evaluation challenges related generative information retrieval, mostly questions, with some early and partial answers.

BIOGRAPHY

Maarten de Rijke is a Distinguished University Professor of Artificial Intelligence and Information Retrieval at the University of Amsterdam. His research is focused on designing and evaluating trustworthy technology to connect people to information, particularly search engines, recommender systems, and conversational assistants. He is also co-founder and the scientific director of the Innovation Center for Artificial Intelligence (ICAI), a national collaboration between academic, industrial, governmental, and societal stakeholders aimed at talent development, research, and impact in AI.