

FoRESEE: Future Search Engines 2014*

Abstract: The workshop 'FoRESEE 2014: Big Data and Semantic Technologies in Backend and Frontend of Search Engines' aims at analyzing and integrating vast amounts of data and semantic technologies in search engines. This workshop will discuss state-of-the-art approaches and methodologies regarding industrial as well as research interests.

1 Focus: Big Data and Search (Backend)

Search Engines are a prime example of Big Data technology. In addition to processing huge amounts of data, their storage, analysis and management are central issues of Big Data.

Various crawling, mining, linking and integration methods form the basis of every modern search technology. Nowadays, search engines exceed classic keyword-based document retrieval by leveraging semantic technologies such as question answering, user context inception and conversational interaction. Furthermore, semantic datasets such as the Linked Open Data Cloud are freely available, supporting knowledge acquisition at scale.

Within this workshop we will explore ontologies as novel way to structure search. Furthermore, we will discuss architectures of semantic search engines dealing with large amounts of domain-specific data.

2 Focus: Human-Semantic Interaction and Human-Computer Interaction (Frontend)

Visually well represented search results are an important factor for the success of a search engine. Next to presenting large amount of data to the user, we focus on the integration of semantic technologies in Web-Interfaces. Traditional non-semantic search engines demand different interfaces.

Data from knowledge bases, such as the Google Knowledge Graph, needs special representation. In particular, the semantic component of the query needs to be explicitly depicted. Semantic entities have to be conveyed in an adequate way by a smart interaction design. Resulting user data generated inside the browser can be intercepted and be

*<https://foresee.unister.de/>

further utilized to optimize the search interaction. Client-side data comprises mouse cursor movement, page visits and clicks on certain results. For instance, this data enables improving ranking results iteratively. Additionally, the increasing vast amount of data requires stream-based technologies to handle resulting information efficiently.

This branch of research is represented by two submissions in our workshop. Haag et al. present *Aspect Grid*, which is a novel visualization technique for results based on important aspects of the search domain. Both the aspects (e.g., “price” for restaurants) and the recognized sentiments (e.g., cheap, medium, expensive) are represented within a grid. The user can then filter results based on the presented information (e.g., only cheap restaurants). Keck et al. discuss novel visual representations of search results for specific domains such as travel and financial product search. Among others, they present an inspiration-based search interface that incorporates semantics through expressive images (e.g., “sunny” travel destinations); and an interface based on parallel coordinates for faceted product search within multi-dimensional data sets.

Head of Workshop: Dr. Andreas Both (Unister GmbH), Prof. Dr.-Ing. Martin Gaedke (Technische Universität Chemnitz), Prof. Dr.-Ing. habil. Rainer Groh (Technische Universität Dresden), Junior-Prof. Dr. Matthias Hagen (Bauhaus-Universität Weimar)

Organizer: Michael Röder, MSc (Universität Leipzig), Maximilian Speicher, MSc ETH Inf.-Ing. (Technische Universität Chemnitz), Ricardo Usbeck, MSc (Universität Leipzig)

Programme Committee: Prof. Dr. Sören Auer (Universität Bonn & Fraunhofer IAIS), Dr. Bernd Eickmann (Unister GmbH), Dr. Christiane Lemke (Unister GmbH), Dipl.-Bioinform. Martin Nettling (Martin-Luther-Universität Halle-Wittenberg), Dipl.-Wirt.-Inf. Mathias Priebe (Unister GmbH), Prof. Dr. Benno Stein (Bauhaus-Universität Weimar), Dipl.-Medieninf. Martin Voigt (Technische Universität Dresden), Dr. Matthias Wauer (Unister GmbH), Prof. Dr. Abraham Bernstein (Universität Zürich)