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Graduiertenkolloquium Angewandte Informatik

Adaptive and Reactive Rich Internet Applications

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Rich Internet Applications significantly raise the user experience compared to conventional web applications by providing highly responsive user interfaces. Although, this is already a tremendous advance in usability, it does not solve the usability issues of one-size-fits-all web user interfaces. So far, research on adaptive hypermedia came up with server-side solutions for adapting web applications to the individual user. However, these approaches do not take into account the new opportunities Rich Internet Applications offer for personalization.

In this talk the client-side approach of Adaptive and Reactive Rich Internet Applications is presented, as the main result of my research into how to bring real-time adaptivity to Rich Internet Applications. A holistic framework covering the design-time as well as the run-time aspects of Adaptive and Reactive Rich Internet Applications is presented, focusing especially on the run-time aspects. As part of the design-time framework I propose the application of semantic web usage mining to semantically enriched web server access log files in order to discover behavioral patterns common to a group of users. These patters serve as a basis for modeling adaptation rules.

At run-time the adaptation rules are processed by an Adaptation Engine directly on the client. I detail the basic principles of the Adaptation Engine, and show how it facilitates the personalization of Rich Internet Applications. Instructed by declarative adaptation rules the Adaptation Engine tracks the browsing behavior of an individual user and reacts to predefined behavioral patterns by adapting the user interface of a web application. The Adaptation Engine combines a graph-based algorithm for the detection of complex events with an efficient pattern matching algorithm for executing declarative production rules.

The universal applicability of Adaptive and Reactive Rich Internet Applications is demonstrated on a use case specific scenario: personalized e-Government. The results of a comprehensive user-driven usability test are discussed in which the user experience of an adaptive versus a non-adaptive e-Government portal is analyzed. Finally, a number of promising areas for future research are identified.

The talk is held in German.

Termin: Freitag, 11. Dezember 2009, 14:00 Uhr

Ort: Englerstraße 11, 76131 Karlsruhe
              Kollegiengebäude am Ehrenhof (Geb. 11.40), 2. OG, Raum 231
              (Hinweise für Besucher: www.aifb.uni-karlsruhe.de/Allgemeines/Besucher)

Veranstalter: Institut AIFB, Forschungsgruppe Wissensmanagement

Zu diesem Vortrag lädt das Institut für Angewandte Informatik und Formale Beschreibungsverfahren alle Interessierten herzlich ein.

Andreas Oberweis, Hartmut Schmeck, Detlef Seese, Wolffried Stucky, Rudi Studer (Org.), Stefan Tai