Web technology

What is this package about?

In Web Analytics course we focus on the utility of different technologies for understanding the Web as a whole, for modeling the behavior of the individual Web users and user groups, for using Web as an experimentation platform. We will cover the topics of OLAP style data exploration, data mining, and social network analysis. We will give a special attention to understanding search, recommendations and advertisements on the Web. During this course the students are expected to learn the basics of intelligent data analysis, and obtain practical skills of being a data analyst, data miner, business analyst and experimenter by participating in the instructions and tutorial sessions and doing mandatory homeworks.

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<thead>
<tr>
<th>Courserename</th>
<th>Scheduled</th>
<th>Level</th>
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<tbody>
<tr>
<td>1. 2ID40 Human-technology* interaction or 2IS70 DBL app development**</td>
<td>Q4/C</td>
<td>1</td>
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<tr>
<td>2. 2ID60 Web technology****</td>
<td>Q2/C</td>
<td>2</td>
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<td>3. 2IID0 Web analytics</td>
<td>Q2/B</td>
<td>3</td>
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* HTI is offered regularly for the last time in 2016/2017 (it will be replaced by a new course from 2018/2019 onwards). To facilitate the last examination opportunity in 2017/2018, the course will be offered again, as an extra service, in 2017/18 in Q1, slot C. Enrollment required!
** students in Data Science should take DBL app development, all other students take HTI
*** From 2018/19 on, App development is offered in time slot D
**** Web technology is offered regularly for the last time in 2017/2018. To facilitate the last examination opportunity in 2018/2019, the course will be offered again, as an extra service, in 2018/19 in Q2. Enrollment required!

Course descriptions

Human-Technology Interaction

User-interfaces constitute the connection between the virtual and physical world. Designing and implementing a usable and user-friendly interface is by no means a trivial task. This course deals with the design, implementation and evaluation of the interaction of users and devices. In project work it teaches how high-level concepts stemming from behavioral
sciences can be made concrete in the setting of computer systems. The course covers general principles of ergonomically sound graphical user interfaces, methods for the design of user interfaces and their prototypes, the evaluation of user interfaces (with and without user involvement) and the implementation of user interfaces that are pleasant, effective and efficient.

**DBL app development**

In small groups students will bring their proficiency to develop apps to the next level by developing a larger app in a supervised project setting. The group members will be matched to provide complementary skills regarding the design of the user interface, the design of the algorithm, programming, etc. The interface and functionality of the app are to be specified, the app is to be developed, implemented and tested, and a user guide is to be supplied. Options to choose from or/and descriptions that may serve as inspiration will be provided. However, imaginative proposals from student groups themselves are encouraged.

**Web Technology**

The web has become the major source of information retrieval and is playing an increasing role in interpersonal interaction. Over the past years the web has been the principal driver for innovation, for a large part related to content. Web technology that supports this is a rapidly expanding field though. This course provides an overview of technologies that are relevant to the design and construction of web services, including scripting languages, XML, the Semantic Web, and dynamic web applications.

**Web Analytics**

Based on various sources, but in particular based on the book Mining of Massive Datasets by Rajaraman, Ullman, Leskovec (CUP 2011), this course focuses on the analysis of very large amounts of data, that is, data so large it does not fit in main memory. Because of the emphasis on size, many of the examples are about the Web or data derived from the Web. An algorithmic point of view taking: data mining is about applying algorithms to data, rather than using data to train a machine-learning engine of some sort. The principal topics include distributed file systems and map-reduce, hash-based similarity search, data-stream processing and the technology of search engines as used by Google.