Web Dynamics

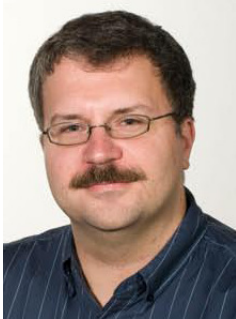*http://www.mpi-inf.mpg.de/departments/d5/teaching/ss10/dyn/*

Lecturers

PD Dr.-Ing. Ralf Schenkel

Group Leader, MMCI

Associated Senior Researcher, MPI-INF

Dr. Marc Spaniol

Postdoc, MPI-INF

Organization

- **Lecture**: Thursday 14-16 in E1.7/0.01
  first on April 15th, last probably on July 15th
  12 lectures

- **Assignments**:
  - only paper assignments, no project
  - Mon 14-16 in E1.7/0.01
  - starting approx. May 10th

- **Requirements for obtaining 6 credit points**:
  - You **must** successfully participate in an oral exam at the end of the semester (probably July 26/27)
  - You **must** present at least one convincing solution of an assignment
  - You **should** actively participate in the excercise group

Planned Outline

(1) Introduction (today) [RS]

- Dimensions of dynamics on the Web

- Application examples

(2) Modeling static and evolving graphs (2 lectures) [RS]

- The Web graph and its static properties

- Generative models for random graphs

- Measures of node importance

(3) Searching the dynamic Web (2 lectures) [RS]

- Crawling and recrawling policies

- Accessing the Hidden Web

Planned Outline (ctd.)

(4) Preserving the Past: Web Archiving (1 lecture) [MS]

- Architecture of a large-scale archive
- Archive consistency, coherence, coverage
- Challenges of long-term preservation

(5) Searching the Past (2 lectures) [RS]

- Time-travel Problems
- Efficient Time-Travel Search
- Temporal measures of page importance

(6) Web Spam (1 lecture) [MS]

- Definitions and Examples
- Countermeasures

(7) Human Behaviour on the Web (2 lectures) [RS]

- Recommendation
- Personalized Search
- Social Networks

Planned Outline (ctd.)

(7)   Knowledge Evolution (1 lecture) [MS]

   •   Recent results from current research

(8)   Summary and Outlook [RS/MS]

Selected Literature

- Pierre Baldi, Paolo Frasconi, Padhraic Smyth: **Modeling the Internet and the Web**, Wiley, 2003

- Julien Masanes (Ed.): **Web Archiving**, Springer, 2006

- Mark Levene, Alexandra Poulovassilis (Eds.): **Web Dynamics**, Springer, 2004

The lecture mostly relies on scientific papers

(a list of references will be provided in the slides)