Introduction to Web Science

http://west.uni-koblenz.de/teaching/ws1213/webscience

Prof. Dr. Steffen Staab
Welcome!

To the new semester!
To the Web Science Lecture!
To the first German university Master Programme in Web Science!
Web Science – beyond computer science

- The Web is about
  - Computers!
    - Networks
    - Browsers
    - Engineering
    - ...
  - Humans
    - What do they engineer?
    - What content do they produce?
    - What motivates them?
    - How do they react to content?
    - How do they socialize?
    - What regulations restrict them?
    - ...

Build!? Study!?
On the Web, we all

- ... surf
- chat,
- buy and sell,
- organize finances,
- book, play, research, publish, ...
- Ebay, amazon, facebook, wikipedia, itunes, youtube, twitter, google, leo ...
More to do?

- Yes!
- Understanding users and developing Web applications for them!
  - Sociology & Web Engineering

- Consulting corporations about social media activities
  - Economics & Web analytics
Politics on the Web!

Democracy &
Web engineering and analytics
Entrepreneurship & Web analytics

- ... realizing your ideas as Web service and starting your own company!
Master in Web Science

- Research

- Developing the next generation of the Web
  - New forms of collaboration
  - Linked data web
    - Fostering democracy
    - Saving energy
    - Improving security
    - Improving health care
  - ...

WeST
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Master in Web Science

- Studying
  - Technology of the Web
  - Sociological and economic foundations
  - Digital rights
  - Entrepreneurship
  - Marketing
  - E-Government
Locally: Who we are

Ext Advisor Board

Int Advisor Board

Semantic Web
Web Retrieval
Social Web
Multimedia Web
Software Web
GESIS

People and Knowledge Networks

Plus many student assistant (Hiwis) and some theses writers
Internationally: Who we are

Some commercial partners of the institute: Microsoft, IBM, SAP, Yahoo!
Day 0: no „Web Science“ alumni yet, but alumni of the institute work at:

- Work at Google
- Consult (e.g. Cap Gemini, several)
- Have done PhD with us or abroad, become academic
- Bundeskriminalamt (security!)
- Have started their own company (Kreuzverweis)

Others are asked for:

- Consulting in social media
  - one friend: 20 open positions for Web scientists
Study the web!

http://west.uni-koblenz.de/mws
Good and Bad

Good:
You are a pioneer!

Bad:
You are a pioneer!

Pioneers usually explore unwandered terrain, but also die of illnesses, hunger, thirst, unfriendly human encounters, ...
If they are lucky they found a new world, become rich and famous, ...

I want to make sure that:
• You do not die thirsting for knowledge
• You are not shot down by new, malfunctioning processes
• You find your path (even if you have to find it!)

Talk to me!
- Lecture: 4 SWS
- Seminar/Tutorial: 2 SWS (Tuesdays second half)

- Oral Exam: Friday February 15, 2003
- Grading:
  - Seminar work, including seminar paper to be written by you: counts 1/3, passing this part is required; seminar paper must be finalized by March 15, otherwise it counts as “failed”
  - Oral exam: counts 2/3, passing this part is required
- Consultation-hour: on email appointment, feel free to check whether my door is open (it may be open and I may still not have time!)
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**Biology** is a natural science concerned with the study of life and living organisms, including their structure, function, growth, origin, evolution, distribution, and taxonomy. Biology is a vast subject...

**Physics** is a natural science that involves the study of matter and its motion through space and time, along with related concepts such as energy and force.

**Computer science** is the scientific approach to computation and its applications.

**Economics** is the social science that analyzes the production, distribution, and consumption of goods and services.
Science: Object of Investigation (cf Wikipedia)

Actually, not so nice definitions:

- **Chemistry** is the science of matter, especially its chemical reactions, but also its composition, structure and properties. Chemistry is concerned with atom and their interactions with other atoms, and particularly with the properties of chemical bonds. Chemistry is also concerned with the interactions between atoms (or groups of atoms) and various forms of energy.

- **Mathematics** is the abstract study of topics encompassing quantity, structure, space, change, and others; it has no generally accepted definition.
Wikipedia 2012-10-14: >>"Web Science" is a term that refers to processing the information available on the Web in similar terms to those applied to natural environment.<<

- Ouch, bs!

Let’s try ourselves:
Produce
Consume

Observable micro interactions in the Web
Observable macro effects in the Web

Behavior
Emotion
Socialisation
Knowledge
Cognition

Data & Information
Protocols
Governance
Applications

WWW

(credittribution Steffen Staab, http://west.uni-koblenz.de)
Wikipedia 2012-10-14: >>"Web Science" is a term that refers to processing the information available on the Web in similar terms to those applied to natural environment.<<
- Ouch, bs!

Let’s try ourselves:
- Web Science is the socio-technical science that investigates how the Web evolves given the regulations, technology and content imposed, engineered and contributed, respectively, as an effect of human behavior and how the Web affects human behavior (on Wikipedia since I put it there on 2012-10-14)

The Web is yours! Add to it!
Web Science is the socio-technical science that investigates how the Web evolves given the regulations, technology and content imposed, engineered and contributed, respectively, as an effect of human behavior and how the Web affects human behavior.

Required disciplines:

- Computer science
  - Engineering
  - Analytics
- Psychology (Cognition)
- Sociology (Socialisation, social forces)
- Economics (Digital goods, incentives – money & more,...)
- Political sciences (institutions, organizations,...)
- Law (regulations)
- ...
Web Science: An interdisciplinary approach

Web science butter