Overview

Jörg Cassens

Data and Process Visualization
SoSe 2017

Inhaltsverzeichnis

1 Welcome

Me

- Jörg Cassens
  - Institut für Mathematik und Angewandte Informatik
  - ☞ cassens@cs.uni-hildesheim.de
  - +49 (5121) 883-40182
  - Building Samelsonplatz, Office A 115
- My Background
- Deutsch oder English
- German: Du oder Sie

2 Rules & Regulations

2.1 Workload

Workload

- 3 SWS
  - 2 hours lecture

  - 1 hour tutorial
- 5 ECTS
- 125 hours
  - 45 hours lectures and tutorials
  - 80 hours self-study
- Written exam

Course Meetings

- Monday, 13:30-15:00 lecture
- Monday, 15:15-16:00 tutorial
- Samelsonplatz A 102
- No course on several days
  - 17.04. (Easter Monday)
  - 01.05. (Labour Day)
  - 05.06. (Whit Monday/project week)
- Exam dates
  - First exam: Monday, 10.07., 14:00-16:00
  - Second exam: *Wednesday, 11.10., 14:00-16:00*

2.2 Course Format

Course Format

- The proportion of lectures and tutorials & question times will be 2 to 1 over the course of the semester
- However, that does not mean that there will be a strict division
- Tutorials will be done when it fits the course
- I am not the only one to talk during lectures
- At the same time, I would like to talk during tutorials, too
- This course is structured around attendance of the course
- However, I do not have attendance lists

Feedback

Agility
This is the first time this course will be given. Expect hiccups.
Given that we miss out on a couple of lectures, we will have to see how far we can advance.
Constant feedback is explicitly welcomed. Tell me what you like or dislike, and which topics you are particularly interested in. I might be able to devote more time to those.

Just quitting the course does help neither you nor me, therefore, I ask you to tell me about any problems with the course immediately (if needed anonymously).

2.3 Learning Outcomes

Lernziele
Aus dem Modulhandbuch:
Die Studierenden lernen in diesem Modul verschiedene *Prinzipien*, *Methoden* und *Verfahren* der *Visualisierung* und *Exploration* von *Daten* und *Informationen* kennen. Aufbauend auf *psychologischen* und *semiotischen* Grundlagen werden verschiedene Arten von Daten betrachtet und Techniken zu deren Visualisierung vorgestellt. Weiterhin werden verschiedene Methoden der Visualisierung von Simulationen und Prozessen diskutiert.

Lehrinhalte

Aus dem Modulhandbuch:

- Psychologische Grundlagen
- Semiotische Grundlagen
- Datentypen und Datenrepräsentation
- Statistische Graphiken
- Interaktion und Datenexploration
- Prozeßvisualisierung
- Visualisierung von Simulationen

Learning Outcomes

From the course catalog:

In this module, students, learn to know different *principles, methods and processes* for the *visualization* and *exploration* of *data* and *information*. Starting from *cognitive* and *semiotic* principles, different types of data are examined and methods for their visualization are introduced. Furthermore, methods for the visualization of simulation and processes are discussed.

Course Content

From the course catalog:

- Cognitive foundations
- Semiotic foundations
- Data types and Data representation
- Statistical graphs
- Interaction and Data exploration
- Process visualization
- Visualization of simulations

2.4 Credits

Credits

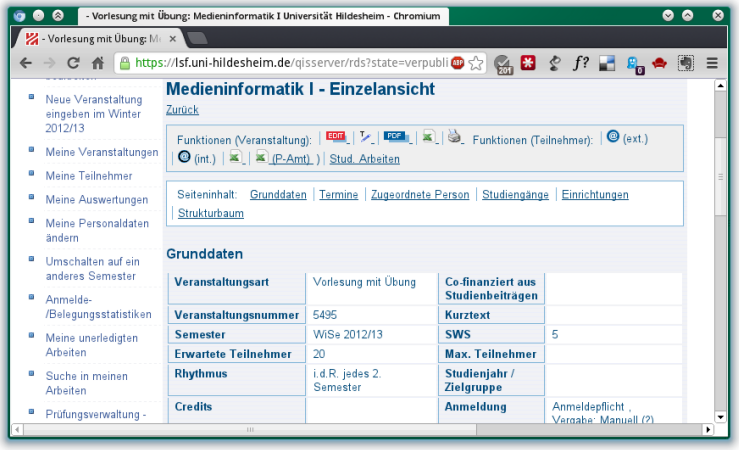
- WINF (PO $\leq$ 2011): Veranstaltungen Master, entweder
  - Gebiete der Informatik, Gebiet Algorithmen
  - Wahlbereich, Gebiet Medieninformatik
- WINF (PO $\geq$ 2014): Veranstaltungen Master
  - Spezialisierungs- und Vertiefungsmodule – Unternehmensmodellierung
- IMIT (PO $\leq$ 2011): Veranstaltungen Master
  - Gebiete der Informatik – Gebiet Medieninformatik
  - Gebiete der Informatik – Gebiet Algorithmen
- IMIT, AI (PO $\geq$ 2014): Veranstaltungen Master
  - Wahlmodule – Informatik – Gebiet Medieninformatik
- Data Analytics:
  - Elective – Application – Media Systems
- Andere: Maßgabe des zuständigen Prüfungsausschusses

Exam

- Passing the final exam
- There will be two exams, one at the beginning of autumn break and one at the end
  - See course announcements and LSF for exact dates
- There will be no compulsory assignments
  - Content of assignments relevant for exam
- However, you might want to submit some assignments
  - Submitted via the learnweb or presented in class
- Learnweb-submissions are usually to be in PDF-format
  - txt is OK for text only or code
  - SVG, PNG and JPG is OK for images
  - mp3, wav and ogg is OK for audio
  - mp4 is OK for video
  - No files from word processors or graphic programs, please (doc, docx, odt) – those will not be marked
  - You can deliver zip, gz, bz2, xz or rar archives

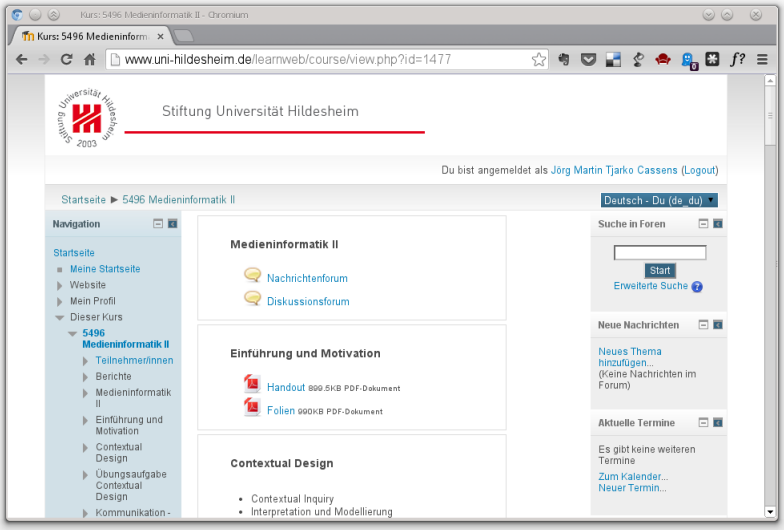
3 Websites

LSF



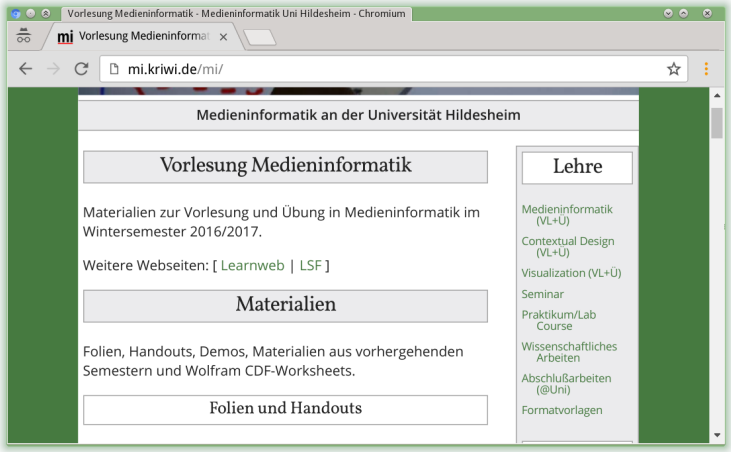
☞ lsf.uni-hildesheim.de

Learnweb



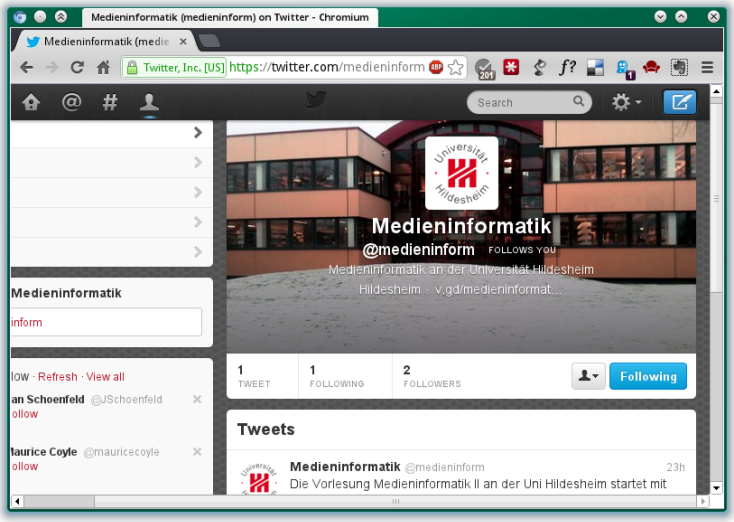
☞ learnweb.uni-hildesheim.de, course So17_5498_Visualizat
Password: Course Number

mi.kriwi.de



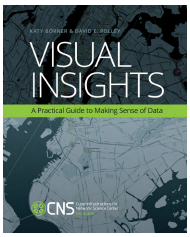
☞ mi.kriwi.de/vis

Twitter

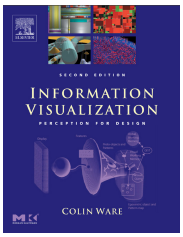


☞ https://twitter.com/medieninform

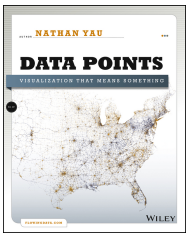
4 Literature



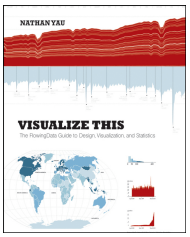
Textbook
Katy Börner and David E. Polley: Visual Insights – A Practical Guide to Making Sense of Data. MIT Press, 2014.



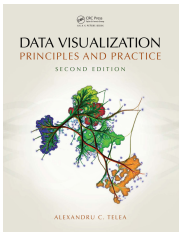
Foundations
Colin Ware: Information Visualization – Perception for Design. Second Edition. Morgan Kaufman/Elsevier, 2004.



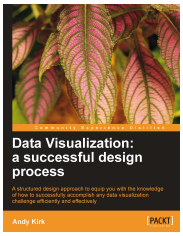
Design & Analysis
Nathan Yau: Data Points – Visualization that means something. Wiley, 2013.



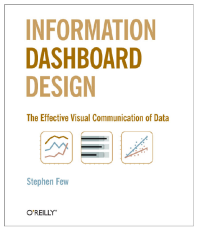
Tools & Practice
Nathan Yau: Visualize This – The Flowing Data Guide. Wiley, 2011.



Scientific Visualization and Programming
Alexandru C. Telea: Data Visualization – Principles and Practice, 2nd Edition. CRC Press, 2015.



Practical Methodology
Andy Kirk: Data Visualization – A Successful Design Process. PACKT Publishing, 2012.



Information Dashboards
Stephen Few: Information Dashboard Design – The Effective Visual Communication of Data. O'Reilly, 2006.

Handouts & Slides
Handouts & Slides

5 Final Remarks

Courses in Media Informatics

- Winter term
  - Media Informatics (Lec + Tut)
    - German only
  - Seminar Media Informatics (Se)
- Summer term
  - Lab Course Media Informatics (Pr)
    - You can still join, helpful to have passed some courses in Media Informatics before
    - Next meeting with topic assignment: Wed, 12-14, A 102 Spl
  - Alternating:
    - *Data and Process Visualization (Lec + Tut)*
    - Contextualized Computing and Ambient Intelligent Systems (Lec + Tut)
    - Contextual Design of Interactive Systems (Lec + Tut)

Exam Dates

- Data and Process Visualization
  - First exam: Monday, 10.07., 14:00-16:00
  - Second exam: *Wednesday, 11.10., 14:00-16:00*
- Contextual Design of Interactive Systems (Medieninformatik II)
  - This year's exam: Wednesday, 14.06., 14:00-16:00
    - Binding registration by 07.06. in POS for this term
    - POS registration is opening 09.05.
  - Next exam: summer term 2018

Me

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- Next course meeting: Monday, 24.04.17