

Computational Social Science Exercises

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Team

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Who am I?

- Assistant professor at University of Koblenz-Landau and head of the Data Science team at GESIS
- GESIS is a Leibnitz Institute for the social sciences
- Data Science Team is part of the Computational Social Science department
- My research: social phenomena – e.g. cultural understanding, bias, discrimination; algorithmic biases

What is CSS?

- Understand/explore social systems
 - Mechanisms in social system: How do social systems work?
 - Social issues: What explains/solves social issues?
 - Goal of CSS: Data driven theory development (induction) and data driven theory testing (deduction)
 - Organic data and designed data

Logistics

- Two programming exercise
 - Counts 30% of the total amount of points.
 - Max: 70 points from exam + 30 points from programming exercise
 - You need ≥ 51 of total points to get a positive grade
 - Use Python 3
- Several paper-pen exercises
 - You have to hand them in all except one
 - No points/grades
 - Exercises will help you to prepare for exam
 - You have to hand them in via email until class or bring them into class

Programming Exercise

- Assignment 1: Static Network Analysis
 - Learning Goal: how to compute network statistics and how to interpret them, become familiar with libraries like networkx
- Assignment 4: Network Dynamics
 - Learning Goal: how to implement diffusion models for networks, how do network properties impact the diffusion, how to setup an analysis that allows to answer these questions

19.4.	Introduction & Ass 1 (programming exercise)	Wagner
26.4.	Python Tutorial	Wagner
3.5.	Question time for Ass 1 & Repetition of lecture	Wayne, Wagner
10.5.	Exercises examples	Wayne, Wagner
17.5.	Correction Ass 1 & Ass 2 (paper and pen work)	Wagner, Wayne
24.5.	Ass 2 correction & Ass 3 (paper and pen work)	Wayne, Strohmaier
31.5.	Ass 3 correction	Wayne, Strohmaier
7.6.	Public Holiday	
14.6.	Network Dynamics Tutorials & presentation of Ass 4 (programming exercise)	Wagner
21.6.	Work on Ass 4 & question time for Ass 4	
28.6.	Work on Ass 4 & question time	
5.7.	Correction Ass 4 & Ass 5 (paper and pen)	
12.7.	Correction Ass 5 & Ass 6 (paper and pen)	Strohmaier
19.7.	Correction Ass 6	Strohmaier
26.7.	Final Exam	

Logistics I

- Presentation of Assignment 1 and 4
 - Plagiarism leads to zero points for all groups that are involved
 - We will ask some of you to present their solutions during class and make individual appointments with others (if needed)
- Small paper and pen exercises
 - You should fill them in at home, bring them to class or send them via email; we correct them together in class

Logistics II

- Newsgroup
 - compsosci @ webnews.uni-koblenz.de
 - Check it regularly!
- Materials (slides & assignments & tutorials)
 - <https://www.dropbox.com/sh/ugchodae56rl1qx/AAAPYY9Dn-ma2DBLI2V9A1VHa?dl=0>

Setup

- Python 3
- ipython and jupyter notebook
- Anaconda Python distribution (includes many useful packages, easy to install, conda package manager)
 - <http://www.southampton.ac.uk/~fangohr/blog/installation-of-python-spyder-numpy-sympy-scipy-pytest-matplotlib-via-anaconda.html>

Questions?