Computational Communication Science 2
Course Manual

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Chapter 1

About this course

This course manual contains general information, guidelines, rules and schedules for the course Computational Communication Science 2 (6 ECTs), part of the Communication in the Digital Society Minor offered by the College of Communication at the University of Amsterdam. Please make sure you read it carefully, as it contains information regarding assignments, deadlines and grading.

1.1 Course description

A sales website that recommends new products to you personally, a company that uses a chatbot to answer your questions, or an algorithm that automatically identifies and warns you about fake news content: In our digital society, we use computational methods to communicate with each other every day. In this course, we will zoom in on the computational methods that lay behind these new ways of communication. We will explore the basic principles of their design, acquire an understanding of their implications, and learn how these methods can be used for science. We will work with some of these methods ourselves in the weekly tutorials to get hands-on experience with these techniques and experience their advantages and limitations first hand. During weekly lectures, we will critically discuss the role that these methods play in our daily lives and what responsibility we have when working with them. At the end of the course, you will have a basic understanding of the methods that underlie different ways of communication in the digital society, you can formulate an informed opinion about the implications of these new techniques, and you will have some first-hand experience in working with them.

In this 7-week course, each week consists of one lecture that zooms in on a specific computational method and the possible applications of this method and of one tutorial in which we work with this method. Through this mixture of introductions to computational methods in the lectures and a hands-on approach during the tutorials, you will acquire knowledge on computational communication science that continues on the knowledge that you gained in CCS-2. In total, there are 28 contact hours in this course (7x 2-hour lecture and 7x 2-hour tutorial).

1.2 Goals

Upon completion of this course, students should:

a Have a general understanding of state-of-the-art computational techniques useful to study communication phenomena in the digital society.

b Have a basic understanding of how to apply rule-based, unsupervised and supervised techniques to answer research questions in the field of communication science.

c Be able to identify key benefits and drawbacks associated with different rule-based and machine learning techniques.

d Have basic knowledge of what communication scientific questions can be answered using computational methods.

e Be able to apply a subset of these techniques independently in order to answer some basic research questions in the field of communication in the digital society.

f Have experience with independently solving problems in Python scripts by gathering information from online platforms.

g Be able to clearly communicate through written texts what steps were taken in a research project using computational methods.

1.3 Study materials

During this course, Python is the programming language that we will be working with. Hence, students should bring a laptop to each class, with a working Python environment installed.

In addition, a list of assigned readings is made available on the course Canvas page. All readings are available for download online using the UvA Digital Library or Google Scholar. If a reading is not available online, the material will be made available on the course Canvas page.

Chapter 2

Rules, assignments, and grading

Assessment for this course is based on a mixture of individual and group assignments.

2.1 Overview of assessments

The overall course grade is based on the following assignments:

- Individual assignment: Regular multiple-choice questions (20%)
- Group assignment: Coding challenge: report (20%)
- Group assignment: Coding challenge: presentation (10%)
- Group assignment: Take-home exam (50%)

2.2 Regular multiple-choice questions (20%)

Describe assignment here.

2.3 Coding challenge: report (20%)

Describe assignment here.

2.4 Coding challenge: presentation (10%)

Describe assignment here.

2.5 Take-home exam (50%)

Describe assignment here.

2.6 Grading

Students have to get a pass (5.5 or higher) for each of the following: the average mc-questions grade, the average of the group report and presentation, and for the take-home exam. If the average grade of the mc-questions or the average grade of the group assignments is lower than 5.5, a resit assignment is given to the student(s) for which they have one week to complete it. If the grade of the take-home exam is lower than 5.5, an improved version can be handed in within one week after the grade is communicated to the student. If the improved version still is graded lower than 5.5, the course cannot be completed. Improved versions of the take-home exam cannot be graded higher than 6.0.

2.7 Deadlines and submitting assignments

Please send all assignments and papers as a PDF file to ensure that it can be read and is displayed the same way on any device. Hardcopies are not required. Multiple files should be compressed and handed in as one .zip file or .tar.gz file. Anything exceeding a reasonable file size (approximately 5 MB) has to be send via `https://filesender.surf.nl/` instead of direct email.

Assignments that are not completed on time, will be not be graded and receive the grade 1.

- For the group report and the take-home exam, this means that all required files need to be submitted before the deadline.
- For the mc-questions, this means that the questions can only be answered during class. If a student cannot answer mc-questions due to missing class... –¿ tja, wat gebeurt er dan?
- The group presentation needs to held during the assigned class, meaning that slides or any other material used for the presentation needs to be present in class as well as at least one group member to give the presentation.

Note that the deadline of an assignment is only met when the all files are submitted *before* the deadline.

2.8 Plagiarism & fraud

Plagiarism is a serious academic violation. Cases in which students use material such as online sources or any other sources in their written work and present this material as their own original work without citation/referencing, and thus conduct plagiarism, will be reported to the Examencommissie of the Department of Communication Science without any further negotiation. If the committee comes to the conclusion that a student has indeed committed plagiarism the course cannot be completed.

General UvA regulations about fraud and plagiarism apply.

2.9 Presence and participation

(Virtual) attendance is compulsory. Maximum two meetings can be missed *if* both instructors are informed of this beforehand. Missing more than two meetings – for whatever reason – means the course cannot be completed.

As you will have noticed in Computational Communication Science 1 and/or similar courses on coding, developing your skills to work with computational methods requires you to practice regularly and to be proactive when it comes to solving problems in your code. Hence, students of Computational Communication Science 2 are expected to practice with and revise the materials discussed in class at home. By practicing at home regularly in between classes, you will get the most out of this course and you will acquire the skills that you need to continue developing your programming knowledge after you finished this course.

2.10 Staying informed

It is your responsibility to check the means of communications used for this course (i.e., your email account, the course Canvas page, and the course Github page) on a regular basis, which in most cases means daily.

Chapter 3

Course Schedule

Week 1: Course introduction & Text-as-data

- Make sure your computer is ready to use for the course (see "study materials" on Canvas)
- Read Boumans and Trilling (2016)

Week 2: Explorative techniques, part 1

Please read some stuff.

Week 3: Explorative techniques, part 2

Please read some stuff.

Please note: no lecture this week

Week 4: Text similarity

Please read some stuff.

Week 5: Taking a break

Take a break

Note that this week is an "education-free week", meaning that there will not be a lecture or a tutorial this week. Take a well-deserved brake and we continue the course in week 6!

Week 6: Recommender systems

Please read some stuff.

Week 7: Text classification, part 1

- Watch: `https://www.youtube.com/watch?v=81vTqTz2pbM`
- Read Van Zoonen and Van der Meer (2016)

Week 8: Text classification, part 2

- Read **?**
- Read **?**

literature

Boumans, J. W., & Trilling, D. (2016). Taking stock of the toolkit: An overview of relevant automated content analysis approaches and techniques for digital journalism scholars. , *4*(1), 8–23. Retrieved 2022-02-28, from http://www.tandfonline.com/doi/full/10.1080/21670811.2015.1096598 doi: 10.1080/21670811.2015.1096598

Van Zoonen, W., & Van der Meer, T. G. (2016). Social media research: The application of supervised machine learning in organizational communication research. , *63*, 132–141. Retrieved 2021-12-23, from https://linkinghub.elsevier.com/retrieve/pii/S0747563216303557 doi: 10.1016/j.chb.2016.05.028