USCAnnenberg

COMM 557: Data Science for Communication and Social Networks
4 Units

Fall 2024 – Thursday – 3:30-6:20pm
Section: 20835D
Location: ANNL101

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Course Description

Learn how to unleash the full power and potential of Social Web data for research and business application purposes!

The Social Web pervades all aspects of our lives: we connect and share with friends, search for jobs and opportunities, rate products and write reviews, establish collaborations and projects, all by using online social platforms like Facebook, LinkedIn, Yelp, and GitHub. We express our personality and creativity through social platforms for visual discovery, collection, and bookmarking like Tumblr and Pinterest. We keep up-to-date, communicate and discuss news and topics of our interest on Twitter and Reddit.

In this course, we will explore the opportunities provided by the wealth of social data available from these platforms. You will learn how to acquire, process, analyze, and visualize data related to social networks and media activity, users and their behaviors, trends and information spreading. This journey will bring through the lands of data mining and machine learning methods: supervised and unsupervised learning will be applied to practical problems like social link analysis, opinion mining, and building smart recommender systems. We will explore open-source tools to understand how to extract meaning from human language, use network analysis to study how humans connect, and discover affinities among people's interests and tastes by building interest graphs.

Proficiency in a programming language is expected. All coursework is done in Python. (This is not an introductory coding course. Please refer to DSCI classes like DSCI 510 for intro coding).

Student Learning Outcomes

Taking this course, you should expect to learn about:

Networks.
1. Statistical descriptors of networks: link analysis, centrality, and prestige.
2. Network clustering: modularity and community detection.
3. Dynamics of information and epidemics: threshold and information cascade models.
4. Network biases and network manipulation: paradoxes, bots, disinformation.
5. Network visualization algorithms: spring-like layouts, multidimensional scaling, Gephi.

Applications of texts and documents analysis.
1. Natural Language Processing and Part-of-speech tagging.
2. Sentiment Analysis.
3. Topic Modeling.

Supervised learning: Crash course on Data Classification.
1. Eager vs. Lazy Learning: Decision Trees
2. Ensemble methods: Random Forest
3. Classification performance evaluation: Precision/Recall/F1, Accuracy, and ROC Curves.

Unsupervised learning: Crash course on Clustering Data.
1. Distance and similarity measures & K-means clustering.
2. Hierarchical Clustering and Dendrograms.
3. Clustering performance evaluation.

All topics will be explored from an applied, practical, computational perspective. This will allow the interested student to deepen the rigorous theoretical implications of the methods in other courses offered by USC (for example, CSCI-567 Machine Learning). Students interested in ethics and privacy of data should consider CSCI-599 AI in Society. Throughout the course, we will deliver several "hands-on" sessions with live coding, data analysis, and problem-solving!

Recommended Preparation: course work or background in coding in Python is advisable; otherwise, experience with any other programming language is strongly recommended!

Course Notes
Brightspace is the primary means of contact for this class. Copies of lecture slides and other class information will be posted on Brightspace. Also, check the tutorial code repository for updated course materials.

Technological Proficiency and Hardware/Software Required
Although every Python code tutorial will be run on a Google CoLab environment in class, it is recommended that you also set up an environment where you can run the code locally. For this, Anaconda and Jupyter Notebook/Jupyter Lab are recommended.

Laptop Policy
All undergraduate and graduate Annenberg majors and minors are required to have a PC or Apple laptop that can be used in Annenberg classes. Please refer to the **Annenberg Digital Lounge** for more information. To connect to USC's Secure Wireless network, please visit USC's **Information Technology Services** website.

Required Readings and Supplementary Materials
The readings for this class are provided in Appendix A of this syllabus. Please refer to this website for links to the articles.

Optional Readings and Supplementary Materials
Recommended textbooks (total Amazon price [new/used]: $100/$60)
1. Web Data Mining (2nd Ed.) —by Bing Liu (Amazon price [new/used]: $48/$35)
2. Mining the Social Web (2nd Ed.) —by Matthew A. Russell (Amazon price [new/used]: $27/$15)
3. Programming Collective Intelligence —by Toby Segaran (Amazon price [new/used]: $25/$10)
4. Network Science Book —by László Barabási (FREE: http://barabasilab.neu.edu/networksciencebook/)
5. Dive into Python —by (FREE: http://www.diveintopython.net/)

Some details: Book 1 will provide insights on methods and approaches studied throughout the course from a machine learning perspective; Books 2 and 3 will serve as recipe books to effectively design and make those methods work with Social Web data; Books 4 and 5 are free resources we will exploit to gather additional material on networks and Python programming.

Technical, recommended (non-required) Python "cookbooks":

1. Python Data Visualization Cookbook —by Igor Milovanović (ebook: $14)
2. Learning IPython for Interactive Computing and Data Visualization —by Cyrille Rossant (ebook: $10)
3. Learning Scikit-learn: Machine Learning in Python —by Raúl Garreta and Guillermo Moncecchi (ebook: $10)

Other supplementary materials are in the Appendix.

Description and Assessment of Assignments

Reaction debriefs
Each student will prepare a "synthesis and reaction" debrief in response to the weekly readings. This will be a brief note, aimed at summarizing in less than one page the gist of the paper, and provide comments or inputs for discussions, including questions, critiques, and/or theoretical and methodological concerns or ideas. Reaction debriefs will be graded only once at the end of the term and their grade will count toward the Participation.

The list of readings is available at the end of the syllabus (see Appendix A) and on this website

Mid-Term Hackathon
The mid-term exam is in the form of a collaborative hackathon project. The goal is to develop crucial abilities such as:

1. Intellectual development: leveraging expertise and multidisciplinary backgrounds, sharing ideas and knowledge.
2. Teamwork skills: effective brainstorming, communication and presentation, and group problem-solving.
3. Project management skills: ability to set goals, map progress, prototyping-delivery, and matching deadlines.

We suggest that participants form groups of 4 members with the goal of solving a single problem. Students are encouraged to form groups with members from different academic backgrounds when possible. Each group will propose or receive a different problem.

We will propose several problems of interest for the course, as well as receive your explicit solicitations, that should be agreed upon with the Instructor during the **first 4 weeks,** in the form of a short one-page proposal clearly stating:

1. What is the problem?
2. Why it is deemed relevant.
3. How the group plans to solve the problem.
4. Bibliographic references to at least one relevant related paper.

All project proposals will be subject to our approval. Groups will be assigned an approved project, either selected among those proposed by the Instructor, or by the group itself. Each group will receive a 15min slot for the presentation of their results, in which each member of the group is expected to discuss at least one critical task of

the project. The grading of the projects will be in part based on crowd-sourced ratings attributed by other fellow students and submitted in anonymous form at the end of each presentation day.

Final Presentation
Each group will receive a 15min slot for the presentation of their project and related results, in which each member of the group is expected to discuss at least one critical task of the project. The grading of the projects will be in part based on crowd-sourced ratings attributed by other fellow students and submitted in anonymous form at the end of each presentation day. To incentivize participation in the Q&A on the presentation day, the best comments and questions will be awarded bonus points.

Final Paper (only for Ph.D. students)
A serious final paper will be expected. The manuscript will be at least 3,000 words (excluding references) and no more than 4,000 (excluding references) and will include appropriate figures and tables, and an unlimited number of references. The work should cover the following points:

1. Statement of the problem & Why the problem is important.
2. How the problem was faced —including a description of methodology and dataset(s).
3. Discussion of results, findings, and limitations of the study.
4. Related literature & Final remarks/conclusions.

The final paper should be ideally based on the student's final project. Text with other group members cannot be shared, figures/tables can be shared when appropriate with proper credit attribution. Grading will be based on soundness (both quality and quantity of original work). Groups of 4 students will be allowed to turn in a single joint-authored manuscript, in the format of a submission for an appropriate peer-reviewed journal or conference. Each author must contribute sufficient material to justify their "equal contribution" to the work. Both authors will receive the same grade for such a manuscript.

Participation

Participation is part of your grade. The current modality of teaching includes synchronous and asynchronous lessons, assignments, exercises, and evaluation processes, and each affords different types of participation. Please remember that we are a community and that each of us and our ideas deserve respect. For this reason, it is imperative that you remember to respect the opinions of others, regardless of how much you disagree.

Class participation and engagement are essential ingredients for success in your academic career, therefore during class please set aside or turn off cell phones. Please avoid other distractions during the lectures.

Grading Breakdown

Assessment Tool (assignments)	Points	% of Grade
Participation	15	15
Midterm exam	35	35
Final exam	50	50
TOTAL		**100%**

Course Grading Scale

Letter grade and corresponding numerical point range		
94% to 100%: A	80% to 83%: B-	67% to 69%: D+
90% to 93%: A-	77% to 79%: C+	64% to 66%: D
87% to 89%: B+	74% to 76%: C	60% to 63%: D-
84% to 86%: B	70% to 73%: C-	0% to 59%: F

Course Specific Policies

Attendance policy
Students are strongly encouraged to attend lectures. This is the best way to engage with the course and keep up to date with class activities and assignments. However, there will be no penalty for failing to attend lectures, and students who miss sessions will be able to keep up with the class by reviewing slides and others' notes through asynchronous class activities and assignments. Note that university guidelines dictate that faculty should only maintain normal attendance, participation, and assessment expectations for students when the class time falls within reasonable learning hours in the student's time zone, defined as 7:00am to 10:00pm in the student's time zone.

ChatGPT Policy
Students are allowed to utilize ChatGPT and similar tools as they wish. Students are encouraged to learn these tools and exploit their potential when useful. Students are also encouraged to disclose and/or attribute if/how such tools have been used to get feedback and improve on their utilization.

Other Policies
Students will be expected to do all readings and assignments, and to attend all meetings unless excused, via email, at least 24 hours prior. Assignments shall be submitted through Brightspace unless otherwise communicated by the instructor.

The following misconducts will automatically result in a zero weight for that component of the grade: (1) failing to attend class on the day of your presentation; (2) failing to attend meetings of your group's Hackathon and/or final presentation; (3) failing to submit your final paper by the expected date. Extenuating circumstances will normally include only serious emergencies or illnesses documented with a doctor's note.

Classroom Norms

Respect
Listen actively and attentively.
Challenge one another, but do so respectfully.

Constructiveness
Focus on ideas, not personalities.
Link claims and assertions to appropriate evidence whenever possible.

Inclusivity
Let other people speak. Once you are done speaking, let at least two other people talk before you speak again.
Acknowledge points made by previous questioners.

Procedure
State your name before making your statement, so other students can reference your statement properly.
Start your statement with a short one-sentence summary of the point you are making.

Zoom Etiquette
Note: **The primary mode of instruction for this class is offline.** Zoom sessions will only be used on occasion due to illness or other justifiable circumstances. The guidelines below apply to those specific online sessions.

Professional Behavior: Maintain a respectful and professional demeanor during synchronous sessions. Professional attire is encouraged but not required.
Technical Issues: If you encounter technical issues during class, please contact TA (euncheol@usc.edu) or TechOps (https://annenbergtechops.com/).
Microphone Use: Please mute your microphone when not speaking to minimize background noise.
Webcam Use: Enabling your webcam is encouraged to foster a more engaging and interactive learning environment.
Eating During Class: Eating during the session is permitted, provided it does not distract from the learning experience.
Environment Considerations: Select a physical environment that minimizes distractions and disruptions. Consider noise levels, background objects, and other potential interruptions.
Chat Box Usage: The chat box can be used for questions and comments. Please use it responsibly and stay on topic.
Speaking Turns: Wait to be recognized by the instructor before speaking. If you have something to say, use the "raise hand" feature or type a quick note in the chat box.
Conflict Management: Any conflict or disagreement during the synchronous session will be addressed according to the course's established conflict resolution process.
Mobile Devices: Logging in using your phone is allowed, but using a computer is recommended for the best learning experience.
Other Technology: The use of technology other than computers during the session should not distract from the learning experience.
Sharing Information: Adhere to the course, department, or school policy on sharing information from the Learning Management System.
Communications: Respectful greetings and proper titles are encouraged in student-student and student-instructor communications.

By following these guidelines, we can ensure a productive and respectful environment for both synchronous and asynchronous learning experiences.

Course Evaluations
Course evaluation occurs at the end of the semester university-wide. It is an important review of students' experiences in the class. Towards the end of the semester, students typically receive an invitation to participate in a course evaluation. This might be through an online survey system or email. Students complete the evaluation anonymously. They rate different aspects of the course and the instructor's teaching style on a scale, and may also provide written feedback. By receiving feedback on what students found effective or challenging, instructors can make informed adjustments to their teaching strategies. Feedback on the course content, materials, and structure can guide future revisions. The end-of-semester course evaluation is a crucial part of the continuous improvement of teaching and learning at the university level.

Grading Standards

Letter Grade	Description
A	Excellent; demonstrates extraordinarily high achievement; comprehensive knowledge and understanding of subject matter; all expectations met and exceeded.
B	Good; moderately broad knowledge and understanding of subject matter; explicitly or implicitly demonstrates good, if not thorough understanding; only minor substantive shortcomings.
C	Satisfactory/Fair; reasonable knowledge and understanding of subject matter; most expectations are met; despite any shortcomings, demonstrates a basic level of understanding.
D	Marginal; minimal knowledge and understanding of subject matter; more than one significant shortcoming; deficiencies indicate only the most rudimentary level of understanding.
F	Failing; unacceptably low level of knowledge and understanding of subject matter; deficiencies indicate lack of understanding.

Grading Timeline

Grading Timeframe and Missing or Inaccurate Score Inquiries/Disputes
For effective learning, students should receive timely feedback on assignments and exams. Therefore, every attempt will be made to grade assignments/exams and post grades within two weeks. Scores for all assignments and exams are regularly updated on Brightspace. You are responsible for notifying the Instructor within one (1) week of a score posting if you think a score is missing or inaccurate. Moreover, you only have this period of time to contest a score on an assignment/exam. If you fail to inquire/notify us of any discrepancy, missing score, or contest a score within one week of the date the score is posted, no further changes will be made.

Assignment Submission Policy
Students will be expected to do all readings and assignments, and to attend all meetings unless excused, via email, at least 24 hours prior. Assignments shall be submitted through Brightspace unless otherwise communicated by the instructor.

The following misconducts will automatically result in a zero weight for that component of the grade: (1) failing to attend class on the day of your presentation; (2) failing to attend meetings of your group's Hackathon and/or final presentation; (3) failing to submit your final paper by the expected date. Extenuating circumstances will normally include only serious emergencies or illnesses documented with a doctor's note.

Course Schedule: A Weekly Breakdown

Important note to students: <u>Be advised that this syllabus is subject to change</u> - and probably will change - based on the progress of the class, events, and/or guest speaker availability, where relevant. Students should consult the Registration Calendar for dates regarding add/drop deadlines, fees, grading options, etc.

	Topics/Daily Activities	Readings and Homework	Deliverable/Due Dates
Week 1 Dates: 8/26-8/30	Introduction of the Course & Planning Part 1— Networks • Crash introduction to Networks—Statistical descriptors of networks I • Hands-on session: Tutorial 1 Analyzing and Visualizing Networks with 'networkx'	Documentation: • Gephi Wiki https://wiki.gephi.org/index.php/Main_Page • Reddit API (https://www.reddit.com/dev/api/), PRAW (https://praw.readthedocs.io/en/stable/index.html)	• Request Reddit API • Forming a team
Week 2 Dates: 9/2-9/6	Networks (continued) • Crash introduction to Networks—Statistical descriptors of networks II • Analyzing Networks with Gephi: Network clustering. Modularity and community detection. • Hands-on session: Tutorial 2 Analyzing Wikipedia networks	• Readings: Papers [5, 16] • Recommended Chapters: NSB:1 and NSB:2; NSB:9 and WDM:7.5	• Drafting a team project proposal
Week 3 Dates: 9/9-9/13	Networks (continued): • Dynamics of information and epidemics spreading. • Hands-on session: Tutorial 3 Mining Reddit.	• Readings: Papers [6, 7, 13] • Recommended Chapters: NSB:10.1–10.3[pp.11–29], MtSW:1[pp.5-26]	
Week 4 Dates: 9/16-9/20	Networks (continued): • Networks and manipulation: bots, disinformation, emotional contagion • Hands-on session	• Readings: [15, 21, 36] (Related to [21]: [28, 34])	• The project proposal is due on Sunday, September 22
Week 5 Dates: 9/23-9/27	Part 2—Text and Documents • Crash intro to Natural Language Processing: Part-of-Speech Tagging. • Hands-on session: Tutorial 4 NLP (1)	• Readings: Papers [11, 24, 37] • Recommended Chapters: WDM:6.5 and MtSW:5.3–5.5[pp.190–222]	
Week 6 Dates: 9/30-10/4	• Guest Lecture • Ask Me Anything (AMA) session with guests • Hands-on session	• Readings: Papers [14, 19, 23] Papers [1, 4, 27] • Recommended Chapters: NSB:10.4–10.7[pp.30–58]	
Week 7 Dates: 10/7-10/11	No classes		[**Fall Recess:** Thursday, October 10, and Friday, October 11]
Week 8	Text and Documents (continued): • Sentiment Analysis	• Readings: Papers [3, 17, 32]	

	Topics/Daily Activities	Readings and Homework	Deliverable/Due Dates
Dates: 10/14-10/18	• Topic Modeling • Hands-on session: Tutorial 5 NLP (2)	• Recommended Chapters: MtSW:4[pp.135–180]	
Week 9 Dates: 10/21-10/25	Text and Documents (continued) • (Large) Language Models Hands-on session: Tutorial 6 LLMs	• Readings: Papers [9, 25, 29, 33]	
Week 10 Dates: 10/28-11/1	Mid-term Hackathon week		• Mid-term Hackathon presentation
Week 11 Dates: 11/4-11/8	Part 3—Supervised Learning • Crash intro to Supervised learning. • Eager vs. Lazy learning—Decision Trees.	• Readings: Papers [10, 12] Recommended Chapters: WDM:3.1, WDM:3.2, and WDM:3.9	
Week 12 Dates: 11/11-11/15	Supervised Learning (continued) • Ensemble methods & Classification performance evaluation. Tutorial 7 Supervised learning	• Readings: Papers [20, 22, 30] • Recommended Chapters: WDM:3.3 and WDM:3.10	[**Veterans Day:** Friday, November 10]
Week 13 Dates: 11/18-11/22	Part 4—Unsupervised Learning • Crash introduction to Unsupervised learning—Distance measures & K-means clustering.	• Readings: Papers [2, 18, 26] • Recommended Chapters: WDM:4.1–4.3[pp.133–147]	
Week 14 Dates: 11/25-11/29	No classes		[**Thanksgiving Break:** Wednesday, November 27 – Sunday, December 1]
Week 15 Dates: 12/2-12/6	Unsupervised Learning (continued) • Hierarchical clustering & Dendrograms. • Clustering performance evaluation Tutorial 8 Unsupervised learning	• Readings: Papers [8, 31, 35] Recommended Chapters: WDM:4.3–4.5[pp.147–155], WDM:4.6–4.10[pp.155–165]	• Students' course evaluations
STUDY DAYS Dates: 12/7-12/10			
FINAL EXAM PERIOD	Project presentation		• Projects' presentations

	Topics/Daily Activities	Readings and Homework	Deliverable/Due Dates
Dates: 12/11-12/18			

Policies and Procedures

Communication

Students are encouraged to contact the TA outside of class to arrange for office hours and group meetings. The preferred method will be via Brightspace. Such requests are typically answered within 48 hours. Email requests are typically answered within 72 hours.

Statement on Academic Conduct and Support Systems

Academic Integrity

The University of Southern California is foremost a learning community committed to fostering successful scholars and researchers dedicated to the pursuit of knowledge and the transmission of ideas. Academic misconduct is in contrast to the university's mission to educate students through a broad array of first-rank academic, professional, and extracurricular programs and includes any act of dishonesty in the submission of academic work (either in draft or final form).

This course will follow the expectations for academic integrity as stated in the USC Student Handbook. All students are expected to submit assignments that are original work and prepared specifically for the course/section in this academic term. You may not submit work written by others or "recycle" work prepared for other courses without obtaining written permission from the instructor(s). Students suspected of engaging in academic misconduct will be reported to the Office of Academic Integrity.

Other violations of academic misconduct include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see the student handbook or the Office of Academic Integrity's website, and university policies on Research and Scholarship Misconduct

The School of Communication maintains a commitment to the highest standards of ethical conduct and academic excellence. Any student found responsible for plagiarism, fabrication, cheating on examinations, or purchasing papers or other assignments will be reported to the Office of Student Judicial Affairs and Community Standards and may be dismissed from the School of Communication. There are no exceptions to the school's policy.

In addition, it is assumed that the work you submit for this course is work you have produced entirely by yourself and has not been previously produced by you for submission in another course or Learning Lab, without approval of the instructor.

Course Content Distribution and Synchronous Session Recordings Policies
USC has policies that prohibit recording and distribution of any synchronous and asynchronous course content outside of the learning environment.

Recording a university class is prohibited without the express permission of the instructor and announcement to the class, or unless conducted pursuant to an Office of Student Accessibility Services (OSAS) accommodation. Recording can inhibit free discussion in the future, and thus infringe on the academic freedom of other students as well as the instructor. (Living our Unifying Values: The USC Student Handbook, page 13).

Distribution or use of notes, recordings, exams, or other intellectual property, based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study is also prohibited. This includes but is not limited to providing materials for distribution by services publishing course materials. This restriction on unauthorized use also applies to all information, which had been distributed to students or in any way had been displayed for use in relationship to the class, whether obtained in class, via email, on the internet, or via any other media. (Living our Unifying Values: The USC Student Handbook, page 13).

Creating a policy for the use of AI Generators in your course
I expect you to use AI (e.g., ChatGPT and image generation tools) in this class. Learning to use AI is an emerging skill, and I welcome the opportunity to meet with you to provide guidance with these tools during office hours or after class. Keep in mind the following:
- AI tools are permitted to help you brainstorm topics or revise work you have already written.
- If you provide minimum-effort prompts, you will get low-quality results. You will need to refine your prompts to get good outcomes. This will take work.
- Proceed with caution when using AI tools and do not assume the information provided is accurate or trustworthy If it gives you a number or fact, assume it is incorrect unless you either know the correct answer or can verify its accuracy with another source. You will be responsible for any errors or omissions provided by the tool. It works best for topics you understand.
- AI is a tool, but one that you need to acknowledge using. Please include a paragraph at the end of any assignment that uses AI explaining how (and why) you used AI and indicate/specify the prompts you used to obtain the results. Failure to do so is a violation of academic integrity policies.
- Be thoughtful about when AI is useful. Consider its appropriateness for each assignment or circumstance. The use of AI tools requires attribution. You are expected to clearly attribute any material generated by the tool used.

Please ask me if you are unsure about what constitutes unauthorized assistance on an exam or assignment, or what information requires citation and/or attribution.

Collaboration. In this class, you are expected to submit work that demonstrates your individual mastery of the course concepts.
Group work. Unless specifically designated as a 'group project,' all assignments are expected to be completed individually.
Computer programs. Plagiarism includes the submission of code written by, or otherwise obtained from someone else.

If found responsible for an academic violation, students may be assigned university outcomes, such as suspension or expulsion from the university, and grade penalties, such as an "F" grade on the assignment, exam, and/or in the course.

Students and Disability Accommodations
USC welcomes students with disabilities into all of the University's educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial

appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support Systems
Annenberg Student Success Fund
The Annenberg Student Success Fund is a donor-funded financial aid account available to USC Annenberg undergraduate and graduate students for non-tuition expenses related to extra- and co-curricular programs and opportunities.

Annenberg Student Emergency Aid Fund
Awards are distributed to students experiencing unforeseen circumstances and emergencies impacting their ability to pay tuition or cover everyday living expenses. These awards are not intended to cover full-tuition expenses, but rather serve as bridge funding to guarantee students' continued enrollment at USC until other resources, such as scholarships or loans, become available. Students are encouraged to provide as much information in their application, as well as contact their academic advisor directly with questions about additional resources available to them.

Counseling and Mental Health - *(213) 740-9355 – 24/7 on call*
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

988 Suicide and Crisis Lifeline - *988 for both calls and text messages – 24/7 on call*
The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline is comprised of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

Relationship and Sexual Violence Prevention Services (RSVP) - *(213) 740-9355(WELL) – 24/7 on call*
Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

Office for Equity, Equal Opportunity, and Title IX (EEO-TIX) - *(213) 740-5086*
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - *(213) 740-5086 or (213) 821-8298*
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

The Office of Student Accessibility Services (OSAS) - *(213) 740-0776*
OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

USC Campus Support and Intervention - *(213) 740-0411*
Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

[Diversity, Equity and Inclusion](#) - *(213) 740-2101*
Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

[USC Emergency](#) - *UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call*
Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

[USC Department of Public Safety](#) - *UPC: (213) 740-6000, HSC: (323) 442-1200 – 24/7 on call*
Non-emergency assistance or information.

[Office of the Ombuds](#) - *(213) 821-9556 (UPC) / (323-442-0382 (HSC)*
A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

[Occupational Therapy Faculty Practice](#) - *(323) 442-2850 or* otfp@med.usc.edu
Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.

TrojansAlert
TrojansAlert is an alert system that allows university officials to contact you during an emergency. It is your connection to real-time updates, instructions on where to go, what to do, or what not to do, who to contact and other important information. Visit the website to sign up.

Emergency Preparedness/Course Continuity in a Crisis
In case of a declared emergency if travel to campus is not feasible, USC executive leadership will announce an electronic way for instructors to teach students in their residence halls or homes using a combination of Brightspace, teleconferencing, and other technologies. See the university's site on Campus Safety and Emergency Preparedness.

ITS Customer Support Center (CSC): (213) 740-5555
The ITS Customer Support Center (CSC) provides support to the USC community for connecting to the USC Network and using supported applications. For help with network connectivity and software, contact CSC. Walk-in support is available in Leavey Library's Information Commons.

Violence-Free Campus
Visit the website to read more about prohibited behaviors, reporting responsibilities and where to report.

Student-Athlete Travel Excuse Letters
Prior to a university-sponsored away competition, Student-Athletes are responsible for providing their Instructor with a Competition Excuse Letter (provided by their academic counselor) for the classes missed while on the road (i.e., excused absence). It is the responsibility of the Student-Athlete to provide the letter prior to leaving on their trip and to make arrangements for a make-up of any missed assignments or exams. Please refer to the SAAS site where they detail travel and travel excuse letters.

Add/Drop Dates for Session 001
(15 weeks: 8/21/2023 – 12/1/2023; Final Exam Period: 12/6-13/2023)
Link: https://classes.usc.edu/term-20233/calendar/
Last day to add: Friday, September 8, 2023
Last day to drop without a mark of "W" and receive a refund: Friday, September 8, 2023
Last day to change enrollment option to Pass/No Pass or Audit: Friday, September 8, 2023 [All major and minor courses must be taken for a letter grade.]

Last day to add/drop a Monday-only class without a mark of "W" and receive a refund or change to Audit: Tuesday, September 12, 2023
Last day to withdraw without a "W" on transcript or change pass/no pass to letter grade: Friday, October 6, 2023
[Mark of "W" will still appear on student record and STARS report and tuition charges still apply.
*Please drop any course by the end of week three for session 001 (or the 20 percent mark of the session in which the course is offered) to avoid tuition charges.]
Last day to drop with a mark of "W": Friday, November 10, 2023

Appendix A: Reading list

[1] Sinan Aral and Dylan Walker. 2012. Identifying influential and susceptible members of social networks. Science 337, 6092 (2012), 337–341.

[2] Emily M Bender, Timnit Gebru, Angelina McMillan-Major, and Shmargaret Shmitchell. 2021. On the dangers of stochastic parrots: Can language models be too big?. In Proceedings of the 2021 ACM conference on fairness, accountability, and transparency. 610–623.

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[4] Robert M Bond, Christopher J Fariss, Jason J Jones, Adam DI Kramer, Cameron Marlow, Jaime E Settle, and James H Fowler. 2012. A 61-million-person experiment in social influence and political mobilization. Nature 489, 7415 (2012), 295–298.

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(2011), 1269–1272.

[8] Adrian Cho. 2009. Ourselves and our interactions: the ultimate physics problem?

[9] Jacob Devlin. 2018. Bert: Pre-training of deep bidirectional transformers for language understanding. arXiv preprint arXiv:1810.04805 (2018).

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[11] Paul DiMaggio. 2015. Adapting computational text analysis to social science (and vice versa). Big Data & Society 2, 2 (2015), 2053951715602908.

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[13] Weiguo Fan and Michael D Gordon. 2014. The power of social media analytics. Commun. ACM 57, 6 (2014), 74–81.

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[15] Emilio Ferrara, Onur Varol, Clayton Davis, Filippo Menczer, and Alessandro Flammini. 2016. The rise of social bots. Commun. ACM 59, 7 (2016), 96–104.

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[17] Scott A Golder and Michael W Macy. 2011. Diurnal and seasonal mood vary with work, sleep, and daylength across diverse cultures. Science 333, 6051 (2011), 1878–1881.

[18] Kenneth Holstein, Jennifer Wortman Vaughan, Hal Daumé III, Miro Dudik, and Hanna Wallach. 2019. Improving fairness in machine learning systems: What do industry practitioners need?. In Proceedings of the 2019 CHI conference on human factors in computing systems. 1–16.

[19] Farshad Kooti, Nathan Hodas, and Kristina Lerman. 2014. Network weirdness: Exploring the origins of network paradoxes. In Proceedings of the International AAAI Conference on Web and Social Media, Vol. 8. 266–274.

[20] Michal Kosinski, David Stillwell, and Thore Graepel. 2013. Private traits and attributes are predictable from digital records of human behavior. Proceedings of the national academy of sciences 110, 15 (2013), 5802–5805.

[21] Adam DI Kramer, Jamie E Guillory, and Jeffrey T Hancock. 2014. Experimental evidence of massive-scale emotional contagion through social networks. Proceedings of the National Academy of Sciences 111, 24 (2014), 8788–8790.

[22] David Lazer, Ryan Kennedy, Gary King, and Alessandro Vespignani. 2014. The parable of Google Flu: traps in big data analysis. science 343, 6176 (2014), 1203–1205.

[23] Eun Lee, Fariba Karimi, Claudia Wagner, Hang-Hyun Jo, Markus Strohmaier, and Mirta Galesic. 2019. Homophily and minority-group size explain perception biases in social networks. Nature human behaviour 3, 10 (2019), 1078–1087.

[24] Seth C Lewis, Rodrigo Zamith, and Alfred Hermida. 2013. Content analysis in an era of big data: A hybrid approach to computational and manual methods. Journal of broadcasting & electronic media 57, 1 (2013), 34–52.

[25] Hang Li. 2022. Language models: past, present, and future. Commun. ACM 65, 7 (2022), 56–63.

[26] Margaret Mitchell, Simone Wu, Andrew Zaldivar, Parker Barnes, Lucy Vasserman, Ben Hutchinson, Elena Spitzer,
Inioluwa Deborah Raji, and Timnit Gebru. 2019. Model cards for model reporting. In Proceedings of the conference on fairness, accountability, and transparency. 220–229.

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https://www.hiig.de/en/all-the-worlds-a-laboratory-on-facebooks-emotional-contagion-experiment-and-user-rights/. [Accessed 21-08-2024].

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[34] Inder M Verma. 2014. Editorial expression of concern: Experimental evidence of massive-scale emotional contagion through social networks. Proceedings of the National Academy of Sciences of the United States of America 111, 29 (2014), 10779–10779.

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[37] Hanna Wallach. 2018. Computational social science≠ computer science+ social data. Commun. ACM 61, 3 (2018), 42–44.

Appendix B: Additional non-mandatory readings

Algorithmic Biases, Surveillance & Discrimination

We will look at new challenges posed by artificial intelligence as a source of bias and discrimination (Obermeyer et al. 2019; Buolamwini and Gebru 2018), (Anderson et al. 2020), (Ali et al. 2019),(Mitchell et al. 2019), (Santamaría and Mihaljević 2018), (Holstein et al. 2019), (Raghavan et al. 2020).

References

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- Buolamwini, Joy, and Timnit Gebru. 2018. "Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification." In Proceedings of the 1st Conference on Fairness, Accountability and Transparency, edited by Sorelle A. Friedler and Christo Wilson, 81:77–91. Proceedings of Machine Learning Research. New York, NY, USA: PMLR.

- Anderson, Ashton, Lucas Maystre, Ian Anderson, Rishabh Mehrotra, and Mounia Lalmas. 2020. "Algorithmic Effects on the Diversity of Consumption on Spotify." In Proceedings of The Web Conference 2020, 2155–65. WWW '20. New York, NY, USA: Association for Computing Machinery.

- Ali, Muhammad, Piotr Sapiezynski, Miranda Bogen, Aleksandra Korolova, Alan Mislove, and Aaron Rieke. 2019. "Discrimination through Optimization: How Facebook's Ad Delivery Can Lead to Biased Outcomes." Proc. ACM Hum.-Comput. Interact., 199, 3 (CSCW): 1–30.

- Mitchell, Margaret, Simone Wu, Andrew Zaldivar, Parker Barnes, Lucy Vasserman, Ben Hutchinson, Elena Spitzer, Inioluwa Deborah Raji, and Timnit Gebru. 2019. "Model Cards for Model Reporting." In Proceedings of the Conference on Fairness, Accountability, and Transparency, 220–29. FAT* '19. New York, NY, USA: Association for Computing Machinery.

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Raghavan, Manish, Solon Barocas, Jon Kleinberg, and Karen Levy. 2020. "Mitigating Bias in Algorithmic Hiring: Evaluating Claims and Practices." In Proceedings of the 2020 Conference on Fairness, Accountability, and Transparency, 469–81. FAT* '20. New York, NY, USA: Association for Computing Machinery.

Disparities, Poverty & Integration

We will discuss how AI can also be used to mitigate network disparities (Blumenstock, Cadamuro, and On 2015), (Jean et al. 2016), (Gebru et al. 2017) (Bansak et al. 2018), (Voigt et al. 2017), (Rama et al. 2020), (Abebe et al. 2020).

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- Bansak, Kirk, Jeremy Ferwerda, Jens Hainmueller, Andrea Dillon, Dominik Hangartner, Duncan Lawrence, and Jeremy Weinstein. 2018. "Improving Refugee Integration through Data-Driven Algorithmic Assignment." Science 359 (6373): 325–29.

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- Rama, Daniele, Yelena Mejova, Michele Tizzoni, Kyriaki Kalimeri, and Ingmar Weber. 2020. "Facebook Ads as a Demographic Tool to Measure the Urban-Rural Divide." In Proceedings of The Web Conference 2020, 327–38. WWW '20. New York, NY, USA: Association for Computing Machinery.

- Abebe, Rediet, Salvatore Giorgi, Anna Tedijanto, Anneke Buffone, and H. Andrew Andrew Schwartz. 2020. "Quantifying Community Characteristics of Maternal Mortality Using Social Media." In Proceedings of The Web Conference 2020, 2976–83. WWW '20. New York, NY, USA: Association for Computing Machinery.