



THE COLLEGE OF EMERGENCY PREPAREDNESS, HOMELAND SECURITY AND CYBERSECURITY

UNIVERSITY AT ALBANY State University of New York

INF 496: Intermediate Special Topics in Informatics Social Media Analysis

Fall 2019 DRAFT

Day/Time:

Location:

Instructor: Dr. Sam Jackson

Contact: sdjackson@albany.edu

Office Hours: Draper 304a

Course Description:

Between Facebook, YouTube, Twitter, and countless others, social media have become part of many people's daily lives. As people use these digital platforms to connect with friends and family, learn about breaking news, or watch the latest cat video, they leave records of what they do. Researchers and analysts have discovered that these records can be a rich source of data. For example, perhaps we can map the spread of the flu based on web searches. Perhaps we can determine motivations of those who commit violent crimes based on their social media posts. Perhaps we can use social media analytics to improve responses to disaster scenarios.

This course introduces students to a range of methods of collecting and analyzing social media (and other internet-based) data to investigate social phenomena. Students will learn about the kinds of analyses that can be performed on social media data. Additionally, the course explores legal and ethical implications of analyzing this internet-based data.

This course focuses on providing hands-on experience using Python tools to collect and analyze data. Assessment will be based on activities in which students perform data collection and analysis.

Course Structure:

This course contains a combination of lectures, discussions, and classroom activities. Students should be prepared to work with data using Python packages in most class sessions.

Course Learning Objectives:

Upon completion of this course, students will have experience with:

- Collecting data using APIs and web scraping,
- Articulating the opportunities and limitations of social media data for research and investigation,
- Identifying and working through legal and ethical implications of social media analysis, and
- Conducting a variety of types of analysis using social media data.

Prerequisites:

(formal) permission of instructor, and junior or senior standing.

(informal) basic experience with Python 3.x. If you haven't taken INF108, you will want to get some experience with Python 3 before the semester

Grading Scale:

93 - 100 = A

83 - 86 = B

73 - 76 = C

63 - 66 = D

90 - 92 = A-

80 - 82 = B-

70 - 72 = C-

60 - 62 = D-

87 - 89 = B+

77 - 79 = C+

67 - 69 = D+

<60 = E

Required Text:

This course does not have a required textbook. Required readings will be available on Blackboard or provided in class.

Assessments:

Python exercise	10%	Week 3
Data collection exercise Web scraping API	15%	Week 8
First analysis exercise Content analysis Metadata analysis	15%	Week 10
Second analysis exercise Network analysis Machine learning	15%	Week 13
Data visualization exercise	15%	Week 14
Final project	30%	Middle of finals week

Policies:

Attendance Policy: Regular attendance is recommended and generally related to the grade attained, but attendance will not be taken during class. However, many class meetings will include dedicated time to work on assignments during which I will be available to answer questions.

Submitting Assignments: Assignments submitted via Blackboard (or nbgrader) are due at 11:59pm on their due date, unless otherwise noted.

Extensions and Missed Assignments: Each student can have an extension for any one assignment other than the final project, no questions asked. But you **must** arrange this with me before the assignment is due.

Other than this one free extension, unexcused late assignments will be penalized 10% per day (so an assignment submitted two days late that would have been a 100 will be an 80). Students missing an

assignment without prior approval of the instructor (or documentation of an emergency medical situation) will receive a “0” for that assignment unless they have a valid and documented excuse. UAlbany’s medical excuse policy can be reviewed at: http://www.albany.edu/health_center/medicaexcuse.shtml.

Disability Policy: Reasonable accommodations will be provided for students with documented physical, sensory, systemic, cognitive, learning and psychiatric disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Director of the Disability Resource Center (Campus Center 137, 442-5490). That office will provide the course instructor with verification of your disability, and will recommend appropriate accommodations. If language or some other barrier inhibits your performance, you should meet with the instructor during the first two weeks of class to devise a solution.

Academic Integrity Policy: Students are expected to comply with the University at Albany’s Community Rights and Responsibilities. Within the first two weeks of the semester, students will be required to sign a statement indicating that they understand what constitutes academic dishonesty. Following this, there will be a zero-tolerance policy for academic dishonesty: any violations will result in a zero on that assignment and referral to the appropriate Departmental and University Committees, and additional grade sanctions may be imposed if appropriate. More information on academic integrity is available at the following website: http://www.albany.edu/undergraduate_bulletin/regulations.html. Additional resources are available here: <https://library.albany.edu/infolit/integrity>.

Grade Appeals: Students who feel that their exams or assignments have been graded incorrectly should follow a three-step procedure. First, the student carefully reads the exam or assignment and identifies the precise problem(s) with the grading. Second, the student sends a written appeal explaining why their answer was appropriate to the instructor; **you must wait 24 hours after receiving your grade to submit an appeal**. Third, the instructor regrades the exam or assignment, taking the appeal into account. Note that the instructor may assign a higher or lower grade following such an appeal. Outside of grade appeals, students will not have opportunities to earn additional points for assignments.

Unexpected Life Events: Over the course of the semester, it is possible that things may happen in your life outside of this course that make it difficult for you to attend class or complete assignments on time. I urge you to reach out to me if something like this happens to you. I will work with you to make arrangements as appropriate. But you **must** tell me about these things as they happen. If you wait until the end of the semester to tell me about something that made it difficult for you to complete assignments due weeks prior, you will be stuck with the grades you received on those assignments.

Email Communication: In the context of this class, I expect all of us to use email in a professional way. Emails to me (or to one another) should contain a meaningful subject line, a polite greeting, and a closing. If you are emailing an attachment, you should include at least a brief sentence or two that tells me what the attachment is and why you are sending it to me. If I receive an email that contains an attachment but no explanation of what the attachment is, I will not open it! I endeavor to respond to email in a timely manner, but life can be crazy. If you do not hear back from me after 2 business days, please send me a follow up email. Note that I generally do not respond to email after 5pm or on the weekend.

Course Schedule DRAFT:

TOPIC	DATES	READINGS	ASSIGNMENTS
Course Introduction, Python Environment Setup, Github	Week 1		
Python Review	Week 2		
Platforms, Users, and Online Activity	Week 3	McCay-Peet and Quan-Haase, “What is Social Media and What Questions Can Social Media Research Help Us Answer?”	
Data (and Metadata)	Week 4	Berger, “ Evil in a Haystack ”	
Ethics and the Law	Week 5	Golbeck, “Legal Issues”; Omand et al. “ #Intelligence ”	
Data Collection: Scraping	Week 6		
Data Collection: APIs	Week 7	Freelon, “ Computational Research in the Post-API Age ”	
Data Cleaning, Processing, etc.	Week 8		
Content Analysis	Week 9		
Metadata Analysis	Week 10		
Network Analysis	Week 11		
Machine Learning	Week 12		
Data Visualization	Week 13		
Workshop/Application	Week 14		

Supplemental Materials

Resources on Social Media Research:

Center for Analysis of Social Media - Demos: <https://demos.co.uk/research-area/casm/>

Association of Internet Researchers: <http://aoir.org/>

VOX-Pol: <https://www.voxpol.eu/>

Student resources:

Student Health Services: https://www.albany.edu/health_center/

Counseling Center: https://www.albany.edu/counseling_center/

Student Emergency Fund: <https://www.albany.edu/studentaffairs/emergencyfund.shtml>

UAlbany library: <https://library.albany.edu/>

Library research resources: <http://libguides.library.albany.edu/c.php?g=537164&p=3677741>