Bostonography
The City through Data, Texts, Maps, and Networks

Northeastern University
INSH 2102, Spring 2020
M, W 2:50 pm – 4:30 pm
Shillman Hall 415

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Course Description: Data is everywhere: news media fill stories with supporting statistics, advertisers use our browsing history to offer products, public agencies project society's future needs, politicians make speeches and write bills, the public votes, and we all use social media. How can we use these data to learn more about society? Exploring complex data and learning from it requires a number of skills that we will be developing in this class, through the lens of Boston:

1. **Recognizing everyday artifacts as sources of data.** Many processes and activities that were once done on paper are now done with computers, meaning they generate digital records that can be collected, organized, and analyzed. These data include maps, text, social media posts, and administrative records. We will look closely at the information contained in each and how they translate into analyzable data forms.
2. **Applying data analysis and associated computational tools to social challenges.** A major goal of this course is to learn how to examine data in order to address real social and political problems in the context of the city of Boston. This is foundational to the curriculum as each module will center on one or more societal themes and how data can be relevant.
3. **Critiquing data sources to gain a better interpretation of their content.** We often think of data as systematically collected information that offers an unbiased window into reality. But as we examine social data more closely, we can see that it can bias our insights in a variety of ways: data may be incomplete, skewed, or manipulated to support a pre-existing viewpoint. Across the semester we will interrogate data, asking how data and our interpretations of it can be biased, and how best to deal with this.
4. **Knowing Boston.** You have the good fortune to be attending college in a world-class city that has a rich past, present, and future. We will illustrate the social applications of modern digital data and computational techniques with examples from Boston, giving you a fuller understanding of the world outside your door.

Prerequisites: *Bostonography* complements *Fundamentals of Computer Science I* ("Fundies"; CS 2500) and/or *Programming with Data* (DS 2000/2001) by exposing students to the ways in which their computational skills might be applied to social questions and challenges. It is expected that all students are either currently taking or have taken either Fundies **or** DS 2000/01, except with special permission from the instructor.

Course Format:

- The course curriculum will be broken into three sections: *Intro to Analysis and Visualization, Urban and Political Affairs,* and *Complex Data Forms*. Additional class periods will be dedicated to the development and presentation of final projects.
- Each class meeting will generally involve a mixture of: discussion of readings and assignments; activity; and lecture. On occasion guest experts will help us to explore topics. The course will be highly interactive and students **must attend all class periods**.
- Blackboard will be used frequently for class materials. Please make certain that you are aware of your password for accessing Blackboard and are comfortable using it.

Required Readings: All readings will be posted on Blackboard.

Assignments:

- There will be reading assignments for each class for which students will write a response based on a prompt. Responses should be posted to the discussion board on Blackboard by 11:30am the morning of that day's class and **must be at least 200 words.** Students are encouraged to read and discuss on Blackboard each other's responses in order to prepare for class.
- In addition to the reading response, each class will require a short hands-on assignment. These will vary in their length and form, but generally will be no more than one page single-spaced (two pages double-spaced; not necessarily including images). They will be **due in class in hardcopy** and will typically take either of two forms:
  - Exploratory exercises that advance the themes and skills of the day.
  - Brainstorms that will build towards the final project.
- The final project will entail the construction of a tool or execution of an analysis using at least one source of digital data. Numerous assignments during the semester will help you to imagine the form you would like this project to take.

Course Grading Criteria:

- Attendance – 10%
- Participation – 10%
- Reading Responses – 15%
- Hands-On Assignments – 35%
- Final Project – 30%

Course Grading Scale: Points will be summed for each of the seven grading categories and then weighted as stated in the above chart to create a 0-100 score. This will then be translated into a letter grade according to the following rubric:

A =	93%-100%	A- =	90-92%
B+ =	87-89%	B =	83-86%
B- =	80-82%	C+=	77-79%
C =	73-76%	C- =	70-72%
D+=	67-69%	D =	63-66%
D- =	60-62%	F =	Below 60%

Academic Honesty: Students are expected to do their own work for both homework and exams. For homework assignments, students are welcome to discuss problems and issues with each other using the online forums, but all submitted work should be the student's own. Students are not allowed to discuss the midterm or final exam with anyone, and all questions about the exams should be addressed to the instructors. Plagiarism, copying from other students, or submitting the work of someone not in the program are grounds for expulsion from the course.

Honor Code: All students must adhere to the Northeastern University honor code available here: http://www.northeastern.edu/osccr/academic-integrity-policy and in the graduate student handbook.

Special Accommodations: If you have specific physical, psychiatric or learning disabilities that may require accommodations for this course, please contact Northeastern's Disabilities Resource Center (DRC) at (617) 373-2675. The DRC can provide you with information and assistance to help manage any challenges that could affect your performance in the course. The University requires that you provide documentation of your disabilities to the DRC so that they may identify what accommodations are required, and arrange with the instructor to provide those on your behalf, as needed.

Class Schedule & Topic Outline

Part 1	Intro to Visualization and Analysis
Part 2	Urban and Political Affairs
Part 3	Complex Data Forms
	Student Projects

	Date	Topics	Readings
1	Jan 6	Introduction	
	Jan 8	R and RStudio	"A Short History of Boston" `R and RStudio installation and introduction`
2	Jan 13	Visualization	"The Parable of Google Flu: Traps in Big Data Analysis" by David Lazer et al., *Science* "Pitfalls of Data Analysis" by Clay Helberg Mini-Tufte (Excerpts from *The Visual Display of Quantitative Information*, Edward Tufte) `Intro to GGplot`
	Jan 15	Mapping 1	Excerpt from *Mapping Boston*, edited by Krieger, Cobb and Turner Excerpt from *GIS Concepts and ArcGIS Methods* by David M. Theobald `Mapping in R`
3	Jan 20	MLK Day No Class	
	Jan 22	Mapping 2	Excerpt from *Image of the City* by Kevin Lynch Guest speaker: Cameron Blevins
4	Jan 27	Ethics and Data	"Privacy as Contextual Integrity" by Helen Nissenbaum (2004) *Washington Law Review*. "#transform(ing)DH Writing and Research: An Autoethnography of Digital Humanities and Feminist Ethics" by Moya Bailey (2015) *Digital Humanities Quarterly* Guest speaker: Ava Wright (Ethics Institute)
	Jan 29	Crime	"Broken Windows" by James Q. Wilson and George Kelling, *The Atlantic* "'Broken windows,' broken policy" by Derrick Z. Jackson, *The Boston Globe* **Tentative Guest Speakers: BARI Team**
5	Feb 3	Urban	"What a Hundred Million Calls to 311 Reveal about New York" by Steven Johnson, *Wired* "Big Data Comes to Boston Neighborhoods" by David Scharfenberg, *WBUR.org* Guest speaker: Rebekah Getman
	Feb 5	Schools	"New Tools for Old Problems: Inequality and Educational Opportunity for Ethnic Minority Youth and Parents" by Nancy E. Hill, Julia R. Jeffries, and Kathleen P. Murray, *Annals of the American Academy of Political and Social Sciences* "Neighborhood over Quality in School Plan?" by Mary Battenfeld, *The Boston Globe* "Publicity Push for New Boston Schools Plan" by James Vaznis, *The Boston Globe* Boston.com's series on "Getting In" about family experiences with school assignment: http://archive.boston.com/news/education/specials/school_chance/families/grant/ **Guest speaker: TBD**
6	Feb 10	Social Movements	History of "Our Bodies, Our Selves". From their website: https://www.ourbodiesourselves.org/our-story/

			"Ahead Of The Boston Women's March, A Look Back 47 Years Ago," by Elizabeth Gillis. *WBUR News* https://www.wbur.org/news/2017/01/20/boston-womens-march-history "The Science of Contemporary Street Protests: New Efforts in the United States." by Dana Fisher et al. *Science Advances* (2019) https://advances.sciencemag.org/content/5/10/eaaw5461.full
	Feb 12	Project Brainstorm	
7	Feb 17	President's Day	
	Feb 19	Electoral Politics 1	"The Last of the Bosses," Francis Russell, *American Heritage.*
8	Feb 24	Electoral Politics 2	Selections from *bostonography.com* and *bluemassgroup.org.*
	Feb 26	Legislative Politics	Selections from *research.bshor.com, ballotpedia.org, progressivemass.com.*
	Mar 2	SPRING BREAK	
	Mar 5		
9	Mar 9	Text 1	*The Education of Henry Adams,* Chapter 1. *The Bostonians,* first page. *The Autobiography of Malcolm X*, Chapter 3. "Malcolm X: Ex-Bostonian," Ted Widmer, *The Boston Globe.*
	Mar 11	Text 2	"The Science of Culture? Social Computing, Digital Humanities and Cultural Analytics," Andrew Piper, *J. of Cultural Analytics.* "Large-scale Dynamics in the Literary Field," Algee-Hewitt et al, *Stanford Literary Lab.*
10	Mar 16	Digital Archives	"Archival Representation" by Elizabeth Yakel (2003) *Archival Science* *EBBDA* project description and updates Guest speaker: Nicole Aljoe
	Mar 18	Project Workshop	
11	Mar 23	Networks 1	"Using Metadata to Find Paul Revere," Kieran Healy, *kieranhealy.org.* "Are Your Friends Making You Fat?" Clive Thompson, *New York Times.* "The Buddy System," Jonah Lehrer, *Wired.*
	Mar 25	Networks 2	"The Other Ride Of Paul Revere: The Brokerage Role In The Making Of The American Revolution," Shin-Kap Han, *Mobilization.* `Gephi`
12	Mar 30	Social Media	"The ripple of fear, sympathy and solidarity during the Boston bombings," Lin and Margolin, *EPJ Data Science.* "Rumors, False Flags, and Digital Vigilantes: Misinformation on Twitter after the 2013 Boston Marathon Bombing," Starbird , *iConference.* "Reddit vs the Media," Will Oremus, *Slate.*
	Apr 1	Data Journalism	**Readings TBD** Guest speaker: Meg Heckman
13	Apr 6	Project Presentations 1	
	Apr 8	Project Presentations 2	