

Bostonography: Exploring the City through Texts, Maps, and Networks**Professor Benjamin Schmidt and Professor Dietmar Offenhuber**bostonography.benschmidt.orgEmail: b.schmidt@northeastern.edu ; d.offenhuber@northeastern.edu

Office Hours: Schmidt: M 3-5; Offenhuber M/Th 9:30-11:00.

Bostonography**Exploring the City through Texts, Maps, and Networks**

Bostonography is a course designed to bridge study in Computer Science with studies in Social Sciences or the Humanities. It allows students to apply the computational methods they learn in Fundamentals of Computer Science toward major cultural, historical and societal questions related to the city of Boston.

Bostonography includes lectures, discussions, and labs in which students examine a variety of real (i.e., not canned) datasets that describe the geographic, historical, literary, political, civic, and institutional landscapes of the city. Students will combine analytical tools such as geospatial mapping, data visualization, and network science to better understand Boston's history and its present. We also examine a range of cultural artifacts to better understand the city of Boston, its history and its contemporary situation. These include texts, such as novels, short stories, and memoirs describing the city and the experiences of its citizens at different moments in history. These assignments are paired with hands-on class activities and visits to landmarks and other important sites, helping students see the city through multiple perspectives and enabling a comprehensive view of complex cultural and social phenomena. Students demonstrate their knowledge of these cultural practices and creations through discussion and weekly writing, as well as a major project in which they explore a particular cultural-spatial facet of the city.

The schedule is subject to change; please keep up to date with the embedded version in the webpage, bostonography.benschmidt.org.

Thanks to the [Bostonography team](#) for permission to use their fantastic name for the course.

Course Goals

As you do the readings and assignments for this class, you will get the most out of them if you strive to make your work align with the following goals.

1. **Improve your ability to read data as a primary source.** In your humanities and social science courses, you've probably learned how to read a variety of artifacts: poems, speeches, articles, natural experiments, and so forth. Contrariwise, in your computer science courses you've probably *used* lots of pre-selected and controlled data in order to learn how to program for particular results. In this class, we will do some of both those things, but we're going to be particularly focused on improving your ability to integrate your readings of the "real world" and your work with data and programming. We want to help you "read" data as a complex product of human intentions and actions.
2. **Designing computational approaches to social questions.** Computation is a powerful tool that can be applied to all sorts of questions. In the humanities and social sciences, the greatest challenges are frequently not in figuring out how best to execute a computational approach but in finding what a useful computational approach might be. How do you find or create data that is useful for your questions? What

tools are particularly useful at describing the messy world of historical artifacts and social relations? What sort of work is a computational model good for in the end, anyway? You'll learn to do this in your own projects and through exposure to a variety of scholars and professionals who do it in their day-to-day work.

3. **Integrating programming into developed systems.** As you continue in a CS major or minor, you'll increase the range of problems you can solve by programming things yourself. But you'll always need to integrate the tools that you build yourself with tools and systems designed by others. In this class, we will help you develop good practices for such integration that will serve you well in the future.
4. **Understanding a place from a variety of disciplinary and cultural perspectives.** We sometimes talk in this course about the "Humanities and Social Sciences" as one thing. As anyone with an office in Renaissance Park will tell you, they're not! By learning about the city of Boston from a variety of perspectives, you'll develop a flexibility in problem solving that can be very valuable.
5. **Creating a rich understanding of the city and region of Boston.** Finally, we want you to deepen and broaden your understanding of the place you've chosen to go to call home during a significant period of your lives. Boston today is interesting, but the city has layers of historical, cultural, and political interest that make it all the more vibrant for an observant citizen.

Required Texts

Most texts in this class will be distributed online, but two are books you should buy. They are not in the bookstore because both are extremely easy to get at a low price from various online retailers. Please buy the editions indicated here, as it will be important that we're all on the same page, both literally and metaphorically. **Please note:** Some of these texts are available as ebooks, and I certainly don't mind you reading them on your Kindle, Nook, or other device. However, you should buy the digital edition of the editions assigned here, which will include matching page numbers:

- Alex Haley, *The Autobiography of Malcom X*
- J. Anthony Lukas, *Common Ground: A Turbulent Decade in the Lives of Three American Families*

Communication

One of the best way to get in touch with us is to visit during office hours. If you're unsure about our readings, struggling with an assignment, or just want to talk, please visit. During the Fall 2016 semester, Professor Offenhuber will be in his office (Ryder Hall 311) Mondays from 9.30-11am, Thursdays 9.30-11am ([book a slot](#)); while Professor Schmidt will be in his office (Nightingale 413) Mondays 3-5pm. We may also be able to make appointments at other times—just email [Professor Offenhuber](#) or [Professor Schmidt](#) with **at least three possible meeting times**. We can schedule in person or virtual meetings. The next best way to get in touch with us is by sending an email to [Professor Offenhuber](#) or [Professor Schmidt](#). (If you're unsure or haven't thought about the tone to strike, see this [guide to emailing your professors](#).) Often we will respond more quickly, but you should not send us an urgent email, for example, the night before an assignment is due.

Outgoing communication You should keep up with assignments and announcements in class, over e-mail, and through the course website. **There will be almost certainly changes to the printed syllabus;** you should be sure to check each week's reading on the web site.

Reasonable Accommodation

Students with documented learning disabilities are entitled to reasonable accommodation in this class. If you need any such accommodation, please be in touch as early as possible.

Behavior

You are required to be respectful to your fellow classmates and professors: listening attentively, not interrupting, and maintaining a civil discourse. Personal attacks, hostility, and mockery will not be tolerated. If you have any issues, please talk to me directly so that I can address them. You are also welcome to eat food or drinks in class, provided they are not distracting.

Participation

This course relies on active, engaged participation in class activities and discussions. There will be few lectures and we will not be building toward an exam. Instead, we will work together to build our facilities for thinking critically about the city and analyzing its data. You should come to every class having read all of the required reading (or watched the required videos, etc., etc.) and prepared to discuss them with your colleagues. We will assess your reading and course engagement through in-class writing exercises (some collected for a grade and others not), reading quizzes, in-class group work, and related assignments.

Maintaining an active class conversation also requires that the class be present, both physically and mentally. To that end: you may miss two classes without penalty over the course of the semester. *Please note:* We make absolutely no distinction between excused and unexcused absences, so use your allotted absences wisely. You may not miss two classes early in the semester and then petition for additional excused absences afterward. When you must miss class, **it is your responsibility to find out what you missed and to make up any pertinent assignments.** You may not make up quizzes or in-class work. If you take one of your excused absences, we simply will not grade any in-class work you missed. If you miss an applied computing activity due to an excused absence you should attempt to make up the work. Once beyond your allotted absences you will receive a zero for any in-class work or computing activities missed.

Note: “Attendance” does not simply mean that your body can be found in proximity to those of your classmates. You must also be mentally present, which means you must:

Be awake and attentive to the conversation of the day; Prepare assigned texts before class begins; Bring your assigned texts to class. If we’re reading online articles, you should either bring a device on which to read them or print them and bring that hard copy; *Bring your assigned texts to class!*

If you fail to meet these requirements, we may consider you mentally absent, though you may be physically present, and that day will be accounted as an absence.

“Information Overload” Days

We do understand that the semester can get hectic. The reading and workload for this class is often challenging, and you must balance it with the work in your other classes. Most likely you will have days when you simply cannot—for whatever reason—complete the assigned reading. To that end, you may take *one “information overload” (IO) day* during the semester. On that days you will not be expected to contribute to class discussion and you will receive a pass on any in-class work (the work will be ungraded and not factored into your final grade). In order to take an IO day, you must follow these rules:

You must attend class, listen attentively to any lectures or class discussions, and take part in any activities or group work not dependent on the day's reading. **Your IO day cannot be used as an additional excused absence.** You must inform us before the beginning of class that you are taking your IO day. You *may not wait* until we call on you or you see the day's in-class assignment. **We will deny any IO requests made during class.** To that end: take special care to be on time if you plan to request an IO day, as you won't be allowed to request one if you arrive late. You may not extend an IO day into another class session, even if the reading or activities of one day continue on the next. You may not take an IO day to avoid completing on an in-class applied computing activity or another major assignment. IO days will excuse you from reading quizzes or reflections, but nothing of more serious import.

IO days are intended to help you manage the inevitable stresses of your unique semester. Use them wisely.

Attendance and Participation Bonus

At the end of the semester, for any allowed absences or IO days you *do not* use, we will drop your lowest in-class work grade. So if you attended all sessions prepared and did not require an IO day, we would drop your three lowest in-class work grades from our final calculations. We may also drop one low grade to acknowledge exceptional engagement and participation through the semester.

Digital Etiquette

Phones This should go without saying, but let's say it anyway: you should turn off your cellphone and/or other devices before you enter the classroom. If your phone rings once during class this semester, we'll all laugh and I'll ask you to turn it off. If your phone rings again during class this semester, we may ask you to leave and will count you as absent. Though it may seem unthinkable, your friends and family may actually survive three hours each week without direct updates as to your whereabouts and doings. They probably won't call the police to report you missing.

FYI: you're not as sneaky texting under the table as you think you are.

Laptops This class will rely on access to laptops in nearly every session. However, in-class laptops also present temptations that many students find irresistible. You may not use a laptop during class to follow a game, text (see the phones policy above), check your friends' Tumblrs, post on Reddit, or commit (non course related) code to Github. Such activities not only distract you—meaning you will be less able to participate meaningfully in the class' conversation—they also distract anyone around or behind you. If you choose to virtually exit the class, we will ask you to physically leave as well and this will count as an absence. If you often seem distracted by what's on your screen, I reserve the right to ask you to put your laptop away, perhaps for the duration of the semester. Periodically we will ask you all to put "lids down." This means I want everyone—myself included—to put away screens in order to focus our attention on another aspect of class.

Technical Snafus This course relies heavily on access to computers, specific software, and the Internet. **At some point during the semester you WILL have a problem with technology:** your laptop will crash, a file will become corrupted, a server will go down, a piece of software will not act as you expect it to, or something else will occur. These are facts of twenty-first-century life, not emergencies. To succeed in college and in your career you should develop work habits that take such snafus into account. Start assignments early and save often. Always keep a backup copy of your work saved somewhere secure (preferably off site). None of these unfortunate events should be considered emergencies: inkless printers, computer virus infections, lost flash drives, lost passwords, corrupted files, incompatible file formats. It is *entirely your responsibility* to take the proper steps to ensure your

work will not be lost irretrievably; if one device or service isn't working, find another that does. **We will not grant you an extension based on problems you may be having with technological devices or the internet services you happen to use.** When problems arise in the software we are all using for the course, we will work through them together and learn thereby.

TRACE

Students are expected to complete a TRACE (Teacher Rating and Course Evaluation) toward the end of the semester.

Academic Integrity

Students must abide by Northeastern University's [Academic Integrity Policy](#) at all times:

A commitment to the principles of academic integrity is essential to the mission of Northeastern University. The promotion of independent and original scholarship ensures that students derive the most from their educational experience and their pursuit of knowledge. Academic dishonesty violates the most fundamental values of an intellectual community and undermines the achievements of the entire University.

If you have any questions about what constitutes academic integrity in this class—particularly as the concept applies to digital course projects—please talk to me. We will also discuss the ethics of digital scholarship in class.

Writing Center

The [Northeastern University Writing Center](#) is located in 412 Holmes Hall and in Snell Library (for current hours see <http://www.northeastern.edu/english/writing-center/> or call 617-373-4549) and offers free and friendly help for any level writer, including help with reading complex texts, conceptualizing a writing project, refining your writing process (i.e., planning, researching, organization, drafting, revising, and editing), and using sources effectively. You can receive feedback face-to-face during regular hours or via email/online response. I strongly recommend that you make appointments to go over drafts of your work—including your digital work—before turning it in. Questions about the Writing Center can be directed to [Belinda Walzer](#), Writing Center Director.

Title IX

Northeastern's Title IX Policy prohibits discrimination based on gender, which includes sexual harassment, sexual assault, relationship or domestic violence, and stalking (for more information, see the website for the Office for University Equity and Compliance (<https://www.northeastern.edu/ouec/>). The Title IX Policy applies to the entire community, including male, female, transgender students, and faculty and staff. If you or someone you know has been harassed or assaulted, confidential support and guidance can be found through University Health and Counseling Services staff (<http://www.northeastern.edu/uahcs/>) and the Center for Spiritual Dialogue and Service clergy members (<http://www.northeastern.edu/spirituallife/>). By law, those employees are not required to report allegations of sex or gender-based discrimination to the University. Alleged violations can be reported non-confidentially to the Title IX Coordinator within The Office for Gender Equity and Compliance at: titleix@northeastern.edu and/or through NUPD (Emergency 617.373.3333; Non-Emergency

617.373.2121). Reporting Prohibited Offenses to NUPD does NOT commit the victim/affected party to future legal action.

Grading

In-class work: 25%

This is an experiential class for which in-class participation is essential.

- Attendance
- In-class work/beginning-of-class reading responses. There will frequently be reading prompts we ask you to reflect on at the beginning of class. These will be graded Check/Check-plus/Check-minus; for the purpose of grade calculation, this will roughly correspond to 98/88/78.
- Showing up with software installed. It will not be possible to participate in class if you don't have the required software.

Applied Computing Assignments: 35%

These will each receive a number grade, and are weighted relative to each other. Smaller assignments may emerge in the course of the semester.

Weights are listed on each assignment, but will roughly look like the following.

- Mental Mapping - 2 unit
- Census and Streets - 1 unit
- Investigating Archival data - 3 units
- Tabular Data Visualization - 1 units
- Not reading a Bostonian biography - 2 units
- Election analysis - 1 units
- Bots - 1 unit

Final Project Ideas Posts (2): 5% each

This might be something like the following:

- A description of an interesting data source and some work that could be done with it;
- A extension of your archival data project with a digitization proposal to a realistic scope.
- A set of questions about an issue and an initial attempt to catalog some of the already-existing data about it.
- An extensive refinement of someone else's post or question—research into available data, reflections on how a new method we've just learned might be applied to someone else's questions for earlier, etc.

Blue Sky Proposal/Final Project Contract: 10%

Final Project, as submitted: 25%

Schedule

NOTE: This syllabus may change for any individual day up through the preceding class session. Individual readings may be tweaked or substituted; in the incredibly likely event that it snows in Boston this winter, we may move entire weeks around. We will endeavour to announce any changes in class; but rather than follow the paper copy, you should always consult the online syllabus at benschmidt.org/bostonography to ensure you have the correct readings.

Week 1

Monday, January 7: Introductions

Readings (in class): John Winthrop, *City on a Hill*

Thursday, January 10: Mental Maps

Read:

- Lynch, Kevin. 1960. *The Image of the City*. Cambridge, Mass.: MIT Press. (excerpt - Introduction and first Boston section.)
- Ladd, F. C. 1970. Black youths view their environment: Neighborhood maps. *Environment and behavior*, 2(1), 74-99.

Install before class on your computer (as discussed in class):

[QGIS \(geographical software\)](#)

Week 2

Monday, January 14: Historic Maps

Remote: Meet at the Leventhal Center, Boston Public Library.

Take the Green or Orange line on your own inbound to Back Bay station; the Boston Public Library is nearby on Copley Square. The Leventhal Center is in the main library building fronting the square, to the right and then back.

Thursday, January 17: The science and craft of cartography

Read:

- Bertin, Jacques. 1983. *Semiology of Graphics: Diagrams, Networks, Maps*. excerpt
- Dennis Wood: A Map is an image proclaiming its objective neutrality.

Week 3

Monday, January 21 No class, MLK day

Tuesday, January 22: (no class, but...) Mental Mapping Assignments due to Professor Offenhuber's office

Thursday, January 24: The City and the Grid

Special Guest: Geoff Boeing: assistant professor of urban informatics and planning in the School of Public Policy and Urban Affairs.

Read:

- Michael Rawson, *Eden on the Charles*, Harvard Press, 2010. Read pages 129-138 and 149-178. (On Blackboard.)
- Geoff Boeing, Urban spatial order: Street network orientation, configuration, and entropy (work in progress; on Blackboard.)

Assignment distributed: Georectification, fire insurance, and Census maps.

Week 4

Monday, January 28: Conceptualizing Data

Read:

- Loukissas, Yanni Alexander. "Taking Big Data Apart: Local Readings of Composite Media Collections." *Information, Communication & Society*, July 2016, 1–14.
- Boyd, Danah, and Kate Crawford. 2012. "Critical Questions for Big Data: Provocations for a Cultural, Technological, and Scholarly Phenomenon." *Information, Communication & Society* 15 (5): 662–679.

Thursday, January 31: Spreadsheets and other data visualizations

Read:

- [A Spreadsheet way of knowledge: Stephen Levy, Harper's Magazine, 1984](#) (Republished online in Wired.com; read there, or pdf of original on course web site.)
- Edward Tufte, *The Visual Display of Quantitative information*, selection. (On Blackboard only).

Before class: Install R and R Studio.

Assignment distributed: Historical data.

Friday, January 1 Fire Insurance assignment due

Week 5

Monday, February 4:

Read:

- Hadley Wickham, [A Layered Grammar of Graphics \(read online\)](#)
- Jeffrey Heer et al., [A Tour through the Visualization Zoo. \(read online\)](#)

Thursday, February 7

- Ed Glaeser: [Reinventing Boston: 1640-2003 - NBER Working paper, 2004. read online](#)

Assignment Distributed: Tabular Data Visualization

Week 6

Monday, February 11

Guest: John Wihbey, Journalism

Read:

- “Visualizing diversity: Data deficiencies and semiotic strategies” by John P. Wihbey, Sarah J. Jackson, Pedro M. Cruz, Brooke Foucault Welles. [Online copy](#)
- Pedro Cruz, [Simulated Dendrochronology of US Immigration](#)

Thursday, February 14

No Readings: 1st idea for final project due. Project Brainstorm/Design workshop on the fire insurance datasets.

Week 7

Monday, February 18

No Class, President’s day

Archival Data Assignment due Tuesday February 19

Thursday, February 21: Texts and computer reading reading

Read:

- Henry Adams, “Quincy” and “Boston” from *The Education of Henry Adams* (http://xroads.virginia.edu/~hyper/HADAMS/ha_
- Malcolm X, “Homeboy,” “Laura,” “Caught,” and “Satan” from *The Autobiography of Malcolm X*

Assignment distributed: Not Reading a Boston Biography.

Week 8

Monday, February 25: Text, 2

Guest: Laura Nelson, Sociology

Read:

- James F. English and Ted Underwood, “Shifting Scales Between Literature and Social Science”
- TBD

Tabular Data visualization assignment due Wednesday, February 27

Thursday, February 28: Ideas workshop Part II.

Readings:

- J. Anthony Lukas, *Common Ground*, chapters 14-18 (We will primarily be talking about this after break, but you should start reading it here.)

Monday, March 4: Spring Break

Thursday, March 7: Spring Break

Week 9

Monday, March 11

Guest: Ted Landsmark, Kitty & Michael Dukakis Center for Urban and Regional Policy

- J. Anthony Lukas, *Common Ground*, chapters 19-24.
- Watch “James Brown and Mayor Kevin White Address the Crowd at the Boston Garden” (http://openvault.wgbh.org/catalog/V_D1)
- Watch, “Evening Compass” 09/09/1975, beginning of clip to 6:41 (http://bostonlocaltv.org/catalog/V_TBHJ42XIAXAZOY2) and student interviews in “English High School” (http://bostonlocaltv.org/catalog/V_NMEQDOV40EIR1F6)

Thursday, March 14

Narrative and Data Journalism

[Boston Globe Spotlight Series on Race, 2018](#)

Week 10

Monday, March 18: Politics and polarization

Guest: Nick Beauchamp, Political Science.

Read:

- Selections from research.bshor.com, ballotpedia.org, progressivemass.com. (Details in assignment description).

Assignment distributed: Political Number-crunching

Thursday, March 21

Field Trip: City of Boston- New Urban Mechanics. No reading. Directions will be announced in class.

Week 11

Monday, March 25: Fear online

Readings:

- Kate Starbird et al, “Rumors, False Flags, and Digital Vigilantes: Misinformation on Twitter after the 2013 Boston Marathon Bombing” (https://www.ideals.illinois.edu/bitstream/handle/2142/47257/308_ready.pdf?sequence=2&isAllowed=1)
- Yu-Ru Lin and Drew Margolin, “The ripple of fear, sympathy and solidarity during the Boston bombings” (<http://epjdatascience.springeropen.com/articles/10.1140/epjds/s13688-014-0031-z>)”

Political number crunching due March 27.

Thursday, March 28: From Local News to Fake News

Guest: Matthew Carroll

Readings:

- David Lazer on Fake News.
- Watch on your own: [“Spotlight,” film. \(2015\)](#)

Bot Assignment distributed**Week 12****Monday, April 1:** Hashtag Activism**Guest: Moya Bailey**

Read:

- Jackson, S. J., Bailey, M. and Welles, B. F. (2018) '#GirlsLikeUs: Trans advocacy and community building online', *New Media & Society*, 20(5), pp. 1868–1888. doi: 10.1177/1461444817709276

Thursday, April 4: Twisting the dials from City Hall

Read:

- Sharon Mattern, [a City is not a computer](#), *Places*
- Finn Brunton on obfuscation.

Bot assignment due**Monday, April 8**

Final project presentations: Day 1. (This empty day is Likely to disappear at some point in the semester due to snow days.)

Thursday, April 11: Last Class

Project presentations.

Final Projects due 4/20.

Acknowledgements

Professors Nick Beauchamp, Dan O'Brien, and Ryan Cordell collaborated in the design of this class and taught it in previous semesters.

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Andy Woodruff and Tim Wallace from the [Bostonography blog](#) both inspired some of our exercises and generously gave permission for the class to use their title.