Foundation Seminar 098-55

HUMANITIES VISUALIZATION

Fall 2015

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Class time: Tuesday and Thursday: 2:30-3:52 PM
Location: Vaughan Literature Building 101

Instructor: Song Chen
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Office hours: Monday 2-3 pm; Thursday 4-5 pm, and by appointment

Course website: http://humnviz.blogs.bucknell.edu/

Course Overview

The increasing availability of digital corpora and the development of massive databases are bringing a revolution to the humanities field: they challenge historians and literary scholars to ask new questions, answer them with new approaches, and present their findings to a wider audience in new ways. This course both explores a variety of visualization projects in the humanities disciplines and teaches students to create their own visualization projects with existing tools. The primary objective of this course is to help students develop a basic literacy of available digital tools in the humanities and a critical understanding of the capabilities and limitations of visualization for humanities scholarship. It aims to help students develop a set of skills, which may be transferred to their academic work in upcoming years and their future career. The course is designed primarily for students interested in the conversation between computer science and the humanities, regardless of specific disciplinary affiliation and regional, temporal, or thematic specialization. All readings, lab materials, and other assignments are in English. This course does not involve programming, nor does it require any prior knowledge of it.

Course Objectives (mapped to University Educational Goals, described here):

With study in this course, at the end of the semester you are expected to:
- Understand how the digital revolution transforms humanities scholarship citizens (maps to University Educational Goals 1, 2, 4, 6, 7, 8, 9);
- Have introductory familiarity with a wide range of digital tools used for humanities visualization (maps to University Educational Goals 1, 2, 4, 8, 9);
- Demonstrate the ability to choose the appropriate tools based on project needs and use them to create informative visualizations (maps to University Educational Goals 1, 2, 4, 5, 8, 9); and
- Be able to critically evaluate the design and implementation of different humanities visualization projects (maps to University Educational Goals 1, 2, 4, 5, 6, 7, 8, 9).

Readings

No textbooks are required. All readings and multimedia resources will be provided on the course website. All assignments listed must be completed before class for the date assigned.

Assignments and Evaluation

1. Reflection Essays (10% each = 30%) -- You will write three short essays. Each essay, expected to be 3 pages in length (double-spaced with normal margins), will ask you to take a critical position on a given topic. Your reflection should be informed by the readings and web resources assigned in the course; and you should relate them to your own experiences. All essays must include citations in Chicago/Turabian format.

   As a W1 course, all essays are process-based. This means that for each essay, you will need to present a concept map and an initial draft before submitting your final draft. You will receive feedbacks from me and/or your peers on the concept map and the first draft. The final draft should include your revisions

based on these feedbacks. Only the final draft will be graded. Your concept map and your first draft will count toward your participation grade.

2. Module Projects (10% each = 40%) -- This course consists of four learning modules. At the conclusion of each module, you will demonstrate your introductory familiarity with the digital humanities tools in question by finishing a group project and giving a short project presentation.

3. Final Project (10%) -- This assignment forms a demonstration of your accomplishment of either or both of the two learning goals of this course: a) to develop the ability to use the appropriate visualization tools for humanistic inquiry, and b) to develop the ability to critically evaluate how different visualizations shape our understanding of humanities subjects differently. It may be a refinement of your favorite Module Project or with the instructor's approval, a brand-new project using one or more of the digital tools introduced in this course. The project will be a fully-developed piece of DH scholarship which engages the broader academic discourses on the subject of your inquiry and/or the methodological discussions of humanities visualization. Before final submission of your project for grading, you will have an opportunity to present it the class and other members of the campus community and make revisions based on the feedbacks you receive during the presentation.

4. Class Participation (20%) -- Participation includes making meaningful and regular contributions to the class discussion, preparing thoughtful presentations on web resources, carefully preparing concept maps and drafts for your own essays, employing writing as a process by being responsive to feedbacks and successfully developing and revising your wiring assignments at both global and local levels, responsibly reviewing the essays of your classmates, and taking one or two turns to be the class scribe. The scribe records the class debates to free up the others to . . . keep debating. The scribe will publish his/her notes on the course website so the class can have an ongoing record of our debates.

The following is the schedule and organization of the course, which may be updated during the semester if necessary. All readings and multimedia resources are on the course website. *All readings and exploration assignments must be completed before class on the day under which they are listed.*

Week 1 (Aug 25, 27):
   Tuesday: Introduction to (Humanities) Visualization

   Thursday: Visualizations: Past and Present
   - Read: Philosophical Assumptions Behind Visualizations
     o Scott Weingart, "Connecting the Dots"
   - Explore: Diversity and Creativity in Visualization
     o Vintage Visualizations
     o Visual Correspondence
     o Space / Portraits of Power
     o Data Cuisine
     o Just Midnight
     o The Johnny Cash Project
   - Lab: Information Literacy (Bibliographical Management)
     o Zotero
     o Evernote

Module I. Experience, Visuals, and Narratives

Week 2 (Sep 1, 3):
   Tuesday: Preservation and Reconstruction
   - Read: Reflections on Virtual Reality
     o *Computer, Visualization, and History*, Ch.4 ("Virtual History")
     o "An Exploration of Deep Maps" and "Defining Deep Maps"
     o Joe Dempsey, et al., "Pudding Lane: Recreating Seventeenth-Century London," *Journal of Digital Humanities,* 3.1 (2014) (optional)
   - Explore: What can Visualizations Do for Humanists? (I)
     o Set 1: Streets of Paris photographed by Charles Marville in 19C and Martin Krieger today; Google's Street Art Project; China Local
     o Set 2: Digital Roman Forum and Rome Reborn ; Virtual Morgantown ; Virtual Harlem ; the 1893 Chicago World's Fair ; King's Visualization Laboratory @ King's College London
   - Lab: Information Literacy (Writing)
     o Concept maps / mind maps: Bubbl.us

   Thursday: Time(s) and Timelines
   - Read: Conceptions of Time and the Evolution of Timelines
     o *Cartographies of Time: A Visual History of the Timeline*, Ch.4
   - Explore: What can Visualizations Do for Humanists? (II)
     o ChronoZoom
     o Examples from Timeline JS or TimeMapper or Timeglider
   - Lab: Create a Time-based Narrative
     o Timeline JS / TimeMapper

Week 3 (Sep 8, 10):
   Tuesday: Mapping Stories and Story Maps
   - Read:
     o Margaret Wickens Pearce, "Framing the Days: Place and Narrative in Cartography"
     o Sébastien Caquard, "Cartography I: Mapping Narrative Cartography," *Progress in Human Geography*, 37.1 (2011): 135-144.
     o Mei-po Kwan, "From Oral Histories to Visual Narratives: Re-presenting the Post-September 11 Experiences of the Muslim Women in the USA," Social & Cultural

Geography, 9.6 (2008): 653-69 [optional]
- Explore:
  - Set 1: GapVis: Google Ancient Places
  - Set 2: Histories of the National Mall; The Map of Early Modern London @ University of Victoria; Valley of the Shadow; Salem Witch Trials Project
  - Set 3: ESRI Story Map Gallery
- Lab: Create a Place-Based Narrative
  - Story Map Tour Step-by-Step @ ArcGIS Online
    - Using the Story Maps Publishing Platform

Thursday: Hypertext and "Deep" Graphs
- Read: Are Narratives Always Linear?
  - Thorsten Schreiber, *English Literatures on the Internet*, Ch.2 ("Hypertext Theory")
  - Davida Charney, "The Effect of Hypertext on Processes of Reading and Writing," in *Literacy and Computers*, pp. 238-263.
- Explore:
  - *Lies* by Rick Pryll (a short piece of hypertext fiction)
  - Whitney Trettien, *Computers, Cut-Ups, & Combinatory Volvelles: An Archaeology of Text-Generating Mechanisms*, 2009.
  - Neatline Exhibits
  - A Closer Look at the Inaugural Ceremony
  - The Qingming Scroll
- Lab: Tell a Story with Annotations
  - Neatline OR Storymap JS Gigapixel

Week 4 (Sep 15, 17):
Tuesday: Project 1 (Digital Storytelling) Tutorial
Thursday: Project 1 (Digital Storytelling) Presentations
==*Start working on Writing Assignment 1*==

Module II. "Distant Reading"

Week 5 (Sep 22, 24):
Tuesday: Let's Count! How to Read Texts from a Distance ("Distant Reading")
- Read:
  - Franco Moretti. " Conjectures on World Literature." *New Left Review*. January-February 2000 (optional)
  - N. Katherine Hayles, "How We Read: Close, Hyper, Machine," *ADE Bulletin* 150 (2010)
  - Jacob Harris, " Word Clouds Considered Harmful," in Nieman Journalism Lab, Oct. 11, 2011.
- Explore:
  - "Inaugural Words: 1789 to the Present"
  - "The State of the Union Address" of George W. Bush (optional)
- Lab: Word Clouds and Word Networks
  - Voyant Cirrus
  - Voyant Links
- Writing Program Activity: Concept Map Discussion for Writing Assignment 1

==*Writing Assignment 1: Concept map due before class*==

Thursday: Beyond Simple Counting: Topic Modeling
- Read:
  - Ted Underwood, "Topic modeling made just simple enough"
  - Matthew L. Jockers, *Macroanalysis: Digital Methods and Literary History*, Ch.8 ("Theme")
- Explore:
  - Mining the *Dispatch* (read the "Introduction" to get an idea of what topic modeling is, and explore the "Topics" page to see how it works)

       o   Topical Guide
- Lab:
  - Paper Machines for Zotero

Week 6 (Sep 29, Oct 1):
Tuesday: "Reading" Images from a Distance (I)
- Read:
  - Lev Manovich. "How to Compare One Million Images?" In David Berry, ed., Understanding Digital Humanities (Palgrave, 2012).   (For more, see One Million Manga Pages)
  - Lev Manovich, "The Meaning of Statistics and Digital Humanities"
- Explore:
  - Projects from Software Studies Initiative
- Lab: Visualizing Image Collections
  - ImagePlot

Writing Assignment 1: First draft due before class

Thursday: "Reading" Images from a Distance (II)
- Writing Program Activity: Peer Review Workshop
- Lab: Quantitative Analysis of Images
  - ImagePlot

Week 7 (Oct 6, 8):
Tuesday: Project 2 (Distant Reading) Tutorial
Writing Assignment 1: Final essay due before class

Thursday: Project 2 (Distant Reading) Presentations
Start working on Writing Assignment 2

Module III. Understanding Structural Patterns

Week 8 (Oct 13, 15):
Tuesday: Fall Recess (No Class)

Thursday: From Contents to Structures: An Alternative Way of Reading a Text from Distance (or by Not Reading It At All!)
- Read: Meta Data and Graph Theory
  - Kieran Healy, "Using Metadata to Find Paul Revere"
  - Yves Gingras, "Mapping the Structure of the Intellectual Field Using Citation and Co-Citation Analysis of Correspondences"
- Explore: Visualizing Influence
  - Inventing Abstraction
  - EdgeMaps
  - Six Degrees of Francis Bacon (SDFB)
  - Connected China
- Lab: From Discourse to Named Entities
  - RezoViz
- Writing Program Activity: Concept Map Discussion for Writing Assignment 2

Writing Assignment 2: Concept map due before class

Week 9 (Oct 20, 22):
Tuesday: Structure from Contents: Networks from Topic Models
- Read:
  - Elijah Meeks, "Comprehending the Digital Humanities"
  - Matthew L. Jockers, *Macroanalysis: Digital Methods and Literary History*, Ch.9 ("Influence")
  - Ted Underwood, "Visualizing topic models"

- Explore:
    - Two Approaches to Building Network Graphs Online:
        - Visual Correspondence (try data visualizations on one or more collections, choosing "Network" or "Force-directed Network" as the graph type)
        - The Chymistry of Isaac Newton Project
    - Evaluating Network Visualizations:
        - Visual Complexity
        - Itinera
        - Kindred Britain
- Lab: Network Visualization
    - Gephi

Writing Assignment 2: First draft due before class

Thursday: Different Approaches to Plot Analysis
- Read:
    - Franco Moretti, "Network Theory, Plot Analysis"
    - Eric Hoyt, et al., "Visualizing and Analyzing the Hollywood Screenplay with ScripThreads"
    - Matthew Jockers, "A Novel Method for Detecting Plot," "Revealing Sentiment and Plot Arcs with the Syuzhet Package," and "The Rest of the Story" (the second post reveals more technical details but is optional. But make sure you watch the embedded 4-minute video of Kurt Vonnegut in the first blog post.)
- Explore:
    - Movie Galaxies
- Lab:
    - ScripThreads

Week 10 (Oct 27, 29):
Tuesday: Writing Workshop: Revising an Essay

Thursday: Gephi Practice Session

Week 11 (Nov 3, 5):
Tuesday: Project 3 (Network Visualization) Tutorial
Writing Assignment 2: Final essay due before class

Thursday: Project 3 (Network Visualization) Presentations
Start working on Writing Assignment 3

Module IV. Understanding Spatial Patterns
Week 12 (Nov 10, 12):
Tuesday: Understanding Networks in Space
- Read: Spatially Embedded Networks
    - Sindbæk, Søren Michael, "The Small World of the Vikings: Networks in Early Medieval Communication and Exchange," *Norwegian Archaeological Review*, 40:1 (2007): 59-74
- Explore:
    - "Voltaire and the Enlightenment" project in *Mapping the Republic of Letters* (make sure to check out its "Visualization" Visualization page)
    - Visual Correspondence (try data visualizations on one or more collections, choosing "Map," "Faceted Map," "Time Map," or "Time Map with Slider" as the graph type)
- Lab: Mapping Networks in the Geographical Space
    - Palladio

Thursday: Spatial Analysis
- Read: Conceptions of Space & Spatial Analysis
    - Edward L. Ayers, "Mapping Time," *GeoHumanities*, pp.215-25.

- o Franco Moretti, "Maps," in *Graphs, Maps, Trees*, pp.35-66.
- Explore:
  - o [ChinaMap @ Harvard](#)
  - o [Digital Atlas of Roman and Medieval Civilization](#)
  - o [Digital Atlas of American Religion](#)
- Lab: (Animated) Spatial Visualization
  - o [CartoDB](#)

Week 13 (Nov 17, 19):
Tuesday: Visualizing Spatial Data
- Read:
  - o John Theibault, "[Visualizations and Historical Arguments](#)," in *Writing History in the Digital Age* (final 2013 version)
  - o Mark Monmonier, "[Lying with Maps](#)," Statistical Science 20.3(2005): 215-22.
- Explore:
  - o Set A: [NBC visualization of racial change in USA](#), [Maps of the 2012 US Presidential Election Results](#), [Spurious Correlations](#)
  - o Set B: [Spatial History Project @ Stanford](#), [Hypercities](#), [Visualizing Emancipation](#); [Learning about the Holocaust](#)
- Lab: Pairing Maps with Statistics
  - o [Tableau Public](#)

Writing Assignment 3: First draft due before noon

Thursday: The Humanists' Critiques of, and Innovations with, GIS
- Read:
  - o Tim Hitchcock, "[Academic History Writing and the Headache of Big Data](#)"
  - o David J. Bodenhamer, "The Potential of Spatial Humanities," in *The Spatial Humanities*, pp.14-29
- Explore: The Politics of Technology, or the Concerns of Digital Humanists
  - o [History Engine](#)
  - o [PhilaPlace](#)
  - o [History Pin](#)
- Lab: Tell an Interactive Data Story
  - o [Tableau Public](#) (Data Stories)

Week 14 (Nov 24, 26): Thanksgiving Break – No Class

Week 15 (Dec 1, 3):
Tuesday: Project 4 (Spatial Visualization) Tutorial
Writing Assignment 3: Second draft due before noon

Thursday: Project 4 (Spatial Visualization) Presentations

Developing a Final Project

Week 16 (Dec 8):
Tuesday: Concluding Discussions & Final Project Development
Writing Assignment 3: Final draft due before noon

Foundation Seminar and W1 Objectives

This is a Foundation Seminar and meets the W1 requirement. Like all foundation seminars, this course helps you achieve the following learning outcomes. These learning outcomes are clearly articulated in Bucknell's College Core Curriculum (CCC) requirements and you will also find rewarding outside this particular course:

- develop writing, reading, speaking, listening, and information literacy skills necessary for collegiate-level academic work; and
- develop capacities for independent academic work and become self-regulated learners.

As a W1, this course approaches writing as a way to learn, not just a demonstration of knowledge. To help you develop your writing skills, this course includes process-based writing assignments which involve a series of reviews and revisions. Presentations and discussion in class are intended to deepen your understanding of the subject matter as well as improve your listening and speaking capabilities. This course develops information literacy skills by introducing you to a wide range of digital tools and projects and encouraging you to give them critical evaluations. You will learn to work in groups through a variety of group projects.

Contractual Fine Print

Attendance and Participation
A deeper understanding of assigned readings and the development of your academic skills depend heavily on class participation. Class attendance is mandatory. If you have **three** unexcused absences in this class, you will receive an "F" for participation. This means that the best you can hope to do in this course – given full marks on all other assignments – would be an 85 (B). Excused absences require a written note from the Dean's Office. Presenting to the Student Health Service alone does not guarantee an excuse from class or from finishing assignments on time. If the doctor at Student Health Services determines that you need to be out of class for two days or more, s/he will notify the Dean's Office. If you are on an athletic team, please show me in writing the classes you will have to miss for athletic events.

It is crucial that you demonstrate your commitment to active participation by trying to do most, if not all, of these activities on a regular basis. A student who receives an A in this category will participate in most or all of these capacities consistently, enthusiastically, and thoughtfully. A student who does well to fair in this category (a B or C) will participate in some of these capacities but either inconsistently (B) or reluctantly (C). A student who performs poorly in this category (D or F) will rarely participate in any capacity (D) or will miss an inappropriate amount of class (F).

Late Work Policy
To ensure fairness for your peers, in general, late work will not be accepted. This said, I encourage you to speak with me in advance of the due date if you feel there is a circumstance which will make it impossible for you to submit your work on time. In cases when late work is accepted, a grade deduction of 1/3 of a letter (B+ to B, for example) will be applied for each 24 hours the assignment is overdue.

Academic Integrity and Misconduct
Plagiarism is a grave academic violation and carries severe consequences. It is your responsibility to ask questions and seek answers if you are uncertain about plagiarism or any other type of academic misconduct. Plagiarism is frequently the result of last-minute desperation. To avoid plagiarism, you are advised to start early on any assignment and work according to a schedule. See http://www.bucknell.edu/x1326.xml for more details.

Bucknell University is an academic community that assumes personal and professional integrity on the part of all its members. The university's policies and procedures regarding academic responsibility were designed in accordance with our commitment to the five fundamental values that define academic integrity according to Duke University's Center for Academic Integrity: honesty, trust, fairness, respect, and responsibility. These values are inscribed in the Bucknell University Honor Code, which was adopted in spring of 2005. Supporting these values in word and deed is the responsibility of each member of the community and alleged acts of academic misconduct should be taken seriously and dealt with according to the university's

policy.

Bucknell University Honor Code

As a student and citizen of the Bucknell University community:

1. I will not lie, cheat, or steal in my academic endeavors.
2. I will forthrightly oppose each and every instance of academic dishonesty.
3. I will let my conscience guide my decision to communicate directly with any person or persons I believe to have been dishonest in academic work.
4. I will let my conscience guide my decision on reporting breaches of academic integrity to the appropriate faculty or deans.

Other considerations

If you have a learning disability or personal circumstance that should be brought to my attention, please do so at the beginning of the semester. I am happy to provide reasonable accommodations when appropriate.

Resources

Any student who may need an accommodation based on the impact of a disability should contact Heather Fowler, Director of the Office of Accessibility Resources at 570-577-1188 or hf007@bucknell.edu who will help coordinate reasonable accommodations for those students with documented disabilities.

Bertrand Library and the Writing Center are tremendously helpful resources, which you should consider using. Visit their web pages at   http://www.bucknell.edu/x1263.xml and http://www.bucknell.edu/x3825.xml for more details.