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LIS 500: Digital Humanities
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Proposal / Rationale for Future Digital Humanities Course

Digital humanities (DH) librarianship is a career in academic libraries, one that evolved from traditional humanities liaison librarianship by bringing together cultural heritage and information technology to further support humanities research and teaching. LIS schools therefore have a responsibility to prepare LIS students for this field.

What should comprise an education in DH librarianship? It should prepare students with the theoretical knowledge, interdisciplinary perspectives, and technical training needed to perform the typical duties of a DH librarian[1], which are outlined below:

- Identify, test, evaluate, learn, teach, and facilitate the use of DH tools and techniques, e.g.
    - Big Data Mining, Analysis, and Visualization
        - This involves using programming languages or software programs to collect large amounts of digitized cultural heritage data, computationally analyze that data, and then digitally represent its patterns and trends
        - Thus, this requires tool knowledge, ranging from Voyant-Tools, which is out of the box, to the programming languages R (built for statistical analysis but steep learning curve) and Python (general programming language that is slightly more accessible)
    - Big data mining, analysis, and visualization has two important subsets:
        - Network Analysis
            - This involves analyzing big data to visualize relationships and connections between persons, organizations, etc.
            - This is usually done via Gephi
        - Spatial Analysis / Mapping
            - This involves analyzing big data to visualize spatial trends
            - This is usually done via Geographic Information Systems (GIS) (ex. ArcGIS)
- Support digital publishing of cultural heritage materials
    - This involves helping manage digital repositories, and supporting thematic research collections (ex. Northeastern's Women Writers Project) and student digital exhibits
    - Thus, this requires knowledge of open source Content Management Systems (CMSs; ex. Omeka), web design, structured data languages (XML, TEI, etc.), etc.
- Data Management
    - Acquire, store, manage, provide, and enable the use of data related to the humanities (ex. textual, visual, spatial / geographic, census, etc.)
    - This requires knowledge of metadata schemas and practices
- Scholarly Communications
    - This requires knowledge of digital publishing, open access, copyright law, etc.

[1] Derived from an informal synthesis of six recent DH librarian job ads

As the list above implies, DH librarianship requires a wide range of knowledge and skills that stretch from the humanities to the sciences (information science, statistics, etc.), all of which take considerable time to learn. That said, many of these (or related) skills are already taught by the SLIS curriculum.[2] What remains to be taught in dedicated classes is:

- Scholarly Communications
- Statistics
    - Necessary to collect and quantitatively analyze big data
- Digital Humanities
    - Theory
        - E.g. DH concepts, methods, issues, conversations, and debates
    - Techniques
        - E.g. topic modeling, network analysis, and spatial analysis, etc.
    - Tools
        - E.g. R, MALLET, Gephi, ArcGIS, TEI, etc.
    - How to apply skills learned in other classes (Programming, Info Vis, etc.) to humanities research.

In short, a DH course should teach DH theory, tools, and techniques. It should also give students practice teaching these tools. Because the DH course should teach how to apply both programming languages and information visualization to cultural heritage data, LIS 485 and / or LIS 473 (as well as a statistics course) can be pre-requisites for the proposed DH course.

DH courses will have to manage the following issues. The main issue is DH tools and techniques: which to teach and how. DH tools and techniques are legion—tools range from the out of the box to programming languages; techniques range from topic modeling to spatial mapping—this requires the course to offer breadth of coverage. However, many DH tools and techniques have steep learning curves, which requires the course to focus on one in depth. The course will likewise have to balance theory (reading about DH ideas, tools, and techniques) and practice (using those tools and techniques). Likewise, it will have to balance digital humanities readings and digital humanities *librarianship* readings. Related to this, the course will have to be taught by a professor who can teach both the digital and the humanities, a rare combination, but a problem that can be solved by team teaching / guest lectures. Also rare are learning resources (i.e. textbooks, tutorials, etc.) apt for digital humanities research, which will also have to be found. Lastly, data to analyze will need to be acquired. This can be solved by partnering with a data-hosting institution such as Northeastern's Women Writers Project, etc. or retrieving data hosted on GitHub or the web (i.e. Project Guttenberg for digitized texts, etc.)

Some these DH course problems are solved by my proposed DH syllabus below. To balance breadth and focus, theory and practice, the course teaches one prominent DH tool alongside its readings while requiring students to present a DH tool to the class, which enables a

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[2] LIS 485: Introduction to Programming (Python)
LIS 473: Information Visualization (D3.JS)
LIS 445: Metadata
LIS 487: Data Interoperability (XML)
LIS 462: Digital Libraries OR LIS 467: Web Development
LIS 432: CHI Concepts OR LIS 448: Digital Stewardship OR LIS 477: DAMs for LAMs
LIS 408: User Instruction

number of DH tools to be introduced. Students will also get experiential knowledge of a DH tool via a final assignment in which they will use that tool to analyze a cultural heritage corpus. The readings are stronger, more up-to-date, and broadened to include DH librarianship and a broader range of humanities perspectives. The readings have been selected based on either my evaluation, or, if I have not read them yet, the author's or text's reputation.

While LIS 500 paired DH theory with R and topic modeling, this course should pair its readings with one DH tool and technique from the list below.

- Python
  - General programming language that can be applied to stats
  - Steep learning curve
  - LIS 485 should be a prerequisite
- R
  - Programming language for statistics
  - Very steep learning curve
  - LIS 485 should be a prerequisite
- D3.JS
  - Data Visualization
  - LIS 473 should be a prerequisite
  - I have not used this tool
- MALLET
  - Text Analysis / Topic Modeling / Natural Language Processing, etc.
  - I have not used this tool
- Gephi
  - Network analysis and visualization
  - I have not used this tool
- ArcGIS
  - Mapping and spatial data visualization
  - I have not used this tool
- XML / TEI / oXygen
  - Text encoding and digital publishing
  - Not a data analysis or visualization tool
  - LIS 487 should be a prerequisite
  - Relatively easy to learn

This tool can be new to the SLIS curriculum, such as R, or currently taught here (Python, D3.JS, XML): the course can build on LIS 485 (Python) / LIS 473 (D3.JS) / LIS 487 (XML) by showing how to apply those tools to humanities research. Indeed, LIS 485 should probably be a prerequisite for the course. Recommended programming resources (textbooks and tutorials) are at the bottom of the syllabus.

While the LIS 500 syllabus begins with classical media theory (Benjamin, McLuhan, etc.) and then turns to what DH is, the revised syllabus begins with what DH is and then explores its various conversations in order to frame and show their relevance. The first reading is C. P. Snow's *The Two Cultures* (1959), which famously outlined the divide between the sciences and the humanities and thus historicizes the digital humanities, which is cohering the sciences (the digital) and the humanities, which has led to ambivalence. We then consider what DH is: definitions of DH, evaluations of DH from those within and without, how DH is attempting to change traditional humanities research and teaching, etc.

Next, the course turns to DH's three key conversations:

1) The study of new media
    a. Forebears include Walter Benjamin and Marshall McLuhan; contemporaries include Sherry Turkle; current topics include studies of code and video games, how new media affects us (how we read, interact with others, produce and preserve cultural heritage, etc.). While new media studies is a prominent DH discourse, it may be less important to DH librarianship than big data analysis and digital publishing, the knowledge of which is required in DH librarian job ads.
2) Remediation / Digitization / Digital Publishing
    a. This is the creation and maintenance of, and discourse around, digital projects (also known as thematic research collections): the scholarly endeavor of digitizing related cultural heritage materials and publishing web-based, multimedia, and searchable (usually including digital tools for analysis and visualization) scholarly editions for research and teaching (e.g. the Women Writers Project, the Rossetti Archive, etc.).
3) Big Data Mining, Analysis, and Visualization
    a. I.e. the use of code / software to analyze large numbers of digitized cultural heritage materials and visualize statistically significant patterns and trends

The course concludes with DH pedagogy: i.e. how to teach DH, how DH is changing and / or can improve / worsen pedagogy (MOOCs, shifting from writing to "making," etc.).

Syllabus

Digital Humanities Librarianship
Theory, Tools, and Techniques
(Discussion Seminar + Lab)

Course Description
Digital humanities (DH) librarianship is a career in academic libraries, one that evolved from traditional humanities liaison librarianship by bringing together cultural heritage and information technology to further support humanities research and teaching. This course will prepare you for this field by introducing you to DH theory (its ideas, debates, and controversies) and DH practices (DH tools and techniques, digital publication, etc.)—and even having you teach them! Major topics include what DH is and why it emerged, the study of new media, digital publication and text encoding, the use of software for big data analysis and visualization (including topic modeling, network analysis, and digital mapping), and digital (humanities) pedagogy. This course is hands-on to enable you to learn and teach these tools yourself.

Part 1 of each class will be in the classroom where we will discuss the readings and have student presentations. Part 2 will be held the lab where we will discuss and apply a DH tool.

Course Schedule
(Bolded Readings are Especially Recommended)
(Weekly tool readings to be drawn from the recommended readings at the bottom)

Week 1: Digital Humanities
Snow, C.P. *The Two Cultures*. 1959.
Kirschenbaum, Matthew G. "What Is Digital Humanities and What's It Doing in English Departments?" 2010.
---. "What is 'Digital Humanities,' and Why Are They Saying Such Terrible Things about It?" differences 25.1 (2014): 46-63
Fish, Stanley. "The Digital Humanities and the Transcending of Mortality." 2012.
Kirsch, Adam. "Technology Is Taking Over English Departments: The false promise of the digital humanities." 2014.

Week 2: Digital Humanities
Burdick, Anne et al. eds. *Digital_Humanities* (The MIT Press), 2016.
Liu, Alan. "The Meaning of the Digital Humanities." (2013)
Chun, Wendy and Lisa Rhody, "Working the Digital Humanities: Uncovering Shadows between the Dark and the Light" (2014)
Bethany Nowviskie, "Resistance in the Materials" (2013)
Posner, Miriam. "What's Next: The Radical, Unrealized Potential of Digital Humanities." 2015.
---. "No Half Measures: Overcoming Common Challenges to Doing Digital Humanities in the Library," *Journal of Library Administration* 53:1 (January 2013)
Losh, Elizabeth and Jacqueline Wernimont eds. *Bodies of Information: Intersectional Feminism and the Digital Humanities.* 2019

Week 3: New Media Studies

Benjamin, Walter. "The Work of Art in the Age of Its Technological Reproducibility." 1939.

Bush, Vannevar. "As We May Think." 1945.

McLuhan, Marshall. *Understanding Media.* 1964. (Intro, Chaps. 1, 2, etc).

Landow, George P. *Hypertext 3.0: Critical Theory and New Media in an Era of Globalization*. 3rd ed. 2006.

Manovich, Lev. *The Language of New Media*. 2002.

Liu, Alan. *Friending the Past: The Sense of History in the Digital Age*. 2018. (Introduction, Chapter 2)

Week 4: New Media Studies

Hayles, N. Katherine. *How We Think: Digital Media and Contemporary Technogenesis*. 2012. (Chapters 1, 2, 3)

--- and Jessica Pressman eds., *Comparative Textual Media*. 2013. (Intro, Raley, Kirschenbaum, etc.)

Hitchcock, Tim. "Confronting the Digital: Or How Academic History Writing Lost the Plot." 2013.

Folsom, Ed. "Database as Genre: The Epic Transformation of Archive."
and responses: Peter Stallybrass ("Against Thinking"), Jerome McGann ("Database, Interface, and Archival Fever"), Meredith McGill ("Remediating Whitman"), Jonathan Freedman ("Whitman, Database, Information Culture"), N. Katherine Hayles ("Narrative and Database: Natural Symbionts"), Ed Folsom ("Reply").
PMLA 122:5 (2007), 1571–1612

Birkerts, Sven. *The Gutenberg Elegies: The Fate of Reading in an Electronic Age*. 2006.

---. *Changing the Subject: Art and Attention in the Internet Age*. 2015.

Turkle, Sherry. *Alone Together: Why We Expect More from Technology and Less from Each Other*. Rev. Ed. 2017.

Noble, Safiya. *Algorithms of Oppression: How Search Engines Reinforce Racism*. 2018.

Week 5: Digitization / Digital Publishing

McGann, Jerome. *Radiant Textuality: Literature after the World Wide Web*. 2001. (Intro, Chaps. 2, 4)

Smith, Martha Nell. "Democratizing Knowledge." (2005)

Cohen, Daniel J. and Roy Rosenzweig. *Digital History: A Guide to Gathering, Preserving, and Presenting the Past on the Web*. 2006. (Intro, Chapter 1)

Shillingsburg, Peter L. *From Gutenberg to Google: Electronic Representations of Literary Texts*. 2006.

Week 6: Digitization / Digital Publishing

McGann, Jerome. *A New Republic of Letters: Memory and Scholarship in the Age of Digital Reproduction*. 2014.

Werner, Sarah. "Where Material Book Culture Meets Digital Humanities" (2012)

Schreibman, Susan. "Digital Scholarly Editing" (2013)

Terras, Melissa. "Digitisation's Most Wanted" (2014)

Putnam, Lara. "The Transnational and the Text-Searchable: Digitized Sources and the Shadows They Cast" (2016)

Week 7: Big Humanities Data
Moretti, Franco. *Graphs, Maps, Trees: Abstract Models for Literary History*. 2007.
---. *Distant Reading*. 2013
--- et al. *Canon / Archive: Studies in Quantitative Formalism*. 2017.
Owens, Trevor. "Defining Data for Humanists: Text, Artifact, Information or Evidence?" (2012)
Gitelman, Lisa ed., *Raw Data is an Oxymoron* (2013) (Intro, Afterword, etc.)
Gibbs, Fred. and Trevor Owens, "Hermeneutics of Data and Historical Writing" (2013)
Schöch, Christof. "Big? Smart? Clean? Messy? Data in the Humanities" (2013)

Week 8: Big Humanities Data
Ramsay, Stephen. *Reading Machines: Toward an Algorithmic Criticism*. 2011.
Fish, Stanley. "Mind Your P's and B's: The Digital Humanities and Interpretation" 2012.
Jockers, Matthew. *Macroanalysis* (2013)
Piper, Andrew. *Enumerations: Data and Literary Study*. 2018.
Rockwell, Geoffrey and Stephan Sinclair. *Hermeneutica: Computer Assisted Interpretation in the Humanities*. 2016.
Chang, Jonathan, et al. "Reading Tea Leaves: How Humans Interpret Topic Models" (2009)
Underwood, Ted. "Topic Modeling Made Just Simple Enough" (2012)
Rhody, Lisa M. "Topic Modeling and Figurative Language" (2012)

Week 9: Humanities Data Visualization:
Tufte, Edward. *The Visual Display of Quantitative Information*. 2nd ed. 2001.
Manovitch, Lev. "What Is Visualization?" (2010)
Drucker, Johanna "Humanities Approaches to Graphical Display" (2011)
Gieseking, Jen Jack. "Opaque is Being Polite: On Algorithms, Violence, & Awesomeness in Data Visualization" (2013)
Theibault, John. "Visualizations and Historical Arguments" (2013)
Klein, Lauren. "The Image of Absence: Archival Silence, Data Visualization, and James Hemings." *American Literature* 85.4 (2013): 661–88.

Week 10: Networks
Han, Shin-Kap. "The Other Ride of Paul Revere" (2009)
Weingart, Scott. "Demystifying Networks, Parts I & II" (2012)
Newman, Mark. *Networks*. 2nd ed. 2018.

Week 11: Maps
White, Richard. "What is Spatial History?" (2010)
Bodenhamer, David J. et al. *The Spatial Humanities: GIS and the Future of Humanities Scholarship*. (2010) (Intro, Chaps. 2, 10?, etc.)
Guldi, Jo. "What Is the Spatial Turn?" + "Spatial Turn in _____" series (2011)
Wilkens, Matthew. "The Geographic Imagination of Civil War-Era American Fiction" (2013)

Week 12: Digital (Humanities) Pedagogy
MLA, Digital Pedagogy in the Humanities
Ryan Cordell, "How Not to Teach Digital Humanities" (2016)
Bogost, Ian "MOOCs Are Marketing" (2012)
Konnikova, Maria. "Will MOOCs be Flukes?" (2014)

Week 13: Wrap Up + Presentations

Recommended Readings

Programming Resources (Mostly R)
https://scottbot.net/teaching-yourself-to-code-in-dh/
Baayen, R. H. *Analyzing Linguistic Data: A Practical Introduction to Statistics using R*. 2008.
Arnold, Taylor and Tilton, Lauren. *Humanities Data in R: Exploring Networks, Geospatial Data, Images, and Text*. 2015.
Gries, Stefan. *Quantitative Corpus Linguistics with R*. 2nd ed. 2016.
Braun, W. John and Duncan J. Murdoch. *A First Course in Statistical Programming with R*. 2nd ed. 2016.
https://programminghistorian.org/ [useful DH tool + techniques tutorials]

Anthologies:
Gold, Matthew K. and Klein, Lauren F. eds. *Debates in the Digital Humanities*. 2nd ed. U of Minnesota P., 2016 [Available Free Online] **[3rd Edition in 2019]**
Hartsell-Gundy, Arianne et al. eds. *Digital Humanities in the Library: Challenges and Opportunities for Subject Specialists*. ALA, 2015.
Schreibman, Susan, and Ray Siemens, eds. *A Companion to Digital Literary Studies*. Wiley-Blackwell, 2013.
Schreibman, Susan, Ray Siemens, and John Unsworth, eds. *A New Companion to Digital Humanities.* Wiley-Blackwell, 2016.

Assignments and Grade Breakdown

1) Summaries / Syntheses of + Responses to Readings (10% of Grade)
    a. Due most weeks
    b. Purpose: understand and internalize the reading, critical thinking, prepare for discussion
    c. In 1–2 paragraphs, synthesize the readings: what is the topic of conversation and what are the different perspectives? Respond to the one, some, or all of the readings—what do you think of the argument?

2) Presentation (Individual / Group): Describe, Review, and Teach a DH Tool (20% of Grade)
    a. Due throughout semester; 1 presentation / class
    b. Purpose:
        i. Because the class cannot teach every DH tool, having students present tools introduces them and their classmates to the tool
        ii. Gives students practice teaching these tools, which is a key job responsibility
    c. Choose a DH Tool (see list below or on your own) and present on it
        i. Describe it
            1. What is it? What is its purpose? How is it used in DH?
        ii. Teach / Demonstrate it
            1. Note that some of these tools have steep learning curves, while others are entry level
        iii. Review it
            1. What does it enable? What are its limitations?

DH Tools
AntConc
ArcGIS
Audacity
Bokeh
D3.JS
Gephi
ggplot2
Git
HyperPo
ImageMagick
Jupyter Notebook
MALLET
Neatline
NGram Viewer
NodeXL
NVivo
Omeka
oXygen
OpenRefine
Python
R Shiny
Scalar
Shanti Interactive
SketchUp
Tableau
TEI
TimelineJS
Voyant Tools

WordPress
XML
XMLSpy

3) Reflect on / Analyze a Medium (print or digital) (10% of Grade)
    a. Due during New / Digital Media section of syllabus
    b. Purpose: Have students emulate DH'ers and participate in DH work by also reflecting on new media
    c. E.g. screen media (TVs, smartphones, computers), social network tools (Facebook, Twitter), print media (pens, paper, etc.), etc.
    d. In 600–900 wds., reflect on a medium that you use or don't use regularly. Why do you use it? How do you use it? What is it good for? What are its problems? How does it affect / shape you?

4) Encode a short text in TEI and reflect on encoding (10% of Grade)
    a. Due during Digital Publication section of syllabus
    b. Can partner with Women Writers Project or Transcribe Bentham for TEI tutorials
    c. Purpose: introduce students to TEI encoding
    d. In 300 wds., What parts of the text did you choose to encode / not encode? What does this enable? What were the challenges? What do you think of TEI?

5) Presentation (Individual): Describe and Review a DH Project (20% of Grade)
    a. Due during Digital Publication section of syllabus
    b. Purpose: introduce students to what is being done in DH in digital publications; teaching practice
    c. Choose a DH Project and present on it
        i. Describe it:
            1. What is the purpose of the project? Why? Who is its audience? What questions does it raise /answer?
        ii. Review it
            1. What does it enable? What are its limitations?

DH Projects

African Origins http://www.african-origins.org/
American Prison Writing Archive, http://apw.dhinitiative.org/
Book Traces, http://www.booktraces.org/
Civil War Washington http://civilwardc.org/
Digital Karnak, http://dlib.etc.ucla.edu/projects/Karnak/
Encyclopedia of the Great Plains, http://plainshumanities.unl.edu/encyclopedia/
Envisaging the West, http://jeffersonswest.unl.edu/
For Better for Verse, http://prosody.lib.virginia.edu/
Global Shakespeares, https://globalshakespeares.mit.edu/
History Engine, http://historyengine.richmond.edu/
Hypercities, http://hypercities.com/
The Map of Early Modern London, http://mapoflondon.uvic.ca/
Mapping the Republic of Letters, https://republicofletters.stanford.edu/
Mapping Soweto, http://mappingsoweto.org/
The Mind is a Metaphor, http://metaphors.lib.virginia.edu/
Mining the Dispatch, http://dsl.richmond.edu/dispatch/pages/home
Orbis Project, http://orbis.stanford.edu/
Our Marathon, http://marathon.neu.edu/
Railroads and the Making of Modern America, http://railroads.unl.edu/
Rossetti Archive, http://www.rossettiarchive.org/
Shelly-Godwin Archive, http://shelleygodwinarchive.org/
September 11 Digital Archive http://911digitalarchive.org/
Speech Accent Archive, http://accent.gmu.edu/
The A. C. Swinburne Project, http://swinburnearchive.indiana.edu/swinburne/
Transcribe Bentham, http://www.ucl.ac.uk/transcribe-bentham/
Visualizing Emancipation, http://dsl.richmond.edu/emancipation/
Voyages, http://www.slavevoyages.org/
Walt Whitman Archive, http://www.whitmanarchive.org/
Willa Cather Archive, http://cather.unl.edu/
Women Writers Project, http://www.wwp.neu.edu/
http://www.sixdegreesoffrancisbacon.com/
https://fathom.info/traces/

6) Digital Project / Analysis (30% of Grade)
    a. Due at end of term
    b. Group project + presentation
    c. Use a DH tool to analyze cultural heritage data and reflect on the process
       OR
    d. Create a DH project / exhibit and reflect on the purpose / process