Syllabus
Steinhardt School of Culture, Education, and Human Development

From Books to Blockchain

Steinhardt : APSTA-UE 1302 - 001 (23022)
Quantification for Pattern Discovery
Tandon: DM-UY 4114-A (20254)
SPECIAL TOP IN DIGITAL MEDIA

Fall 2023
We 11:00AM - 1:30PM
DRAFT Wed Aug 2

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Catalog Description:
This experiential seminar interrogates the democratization of pattern discovery. Who decides what to count and what to keep? Using New York City as a laboratory, we explore the systems of power embedded in tabulation and archiving, and the possibilities of open, decentralized, and autonomous futures. We reflect on the past and present of knowledge infrastructures -- from books to blockchain.

Learning Objectives

Students will explore the intellectual foundations of blockchain and other digital record keeping and pattern discovery tools. Students will have the opportunity to enhance an ability to :

• Identify enumeration and commensuration across digital and non-digital formats
• Recognize alternative approaches to tabulation and comparison
• Assess blockchain and distributed autonomous organizations using systematic reasoning
• Communicate to a general audience about emerging technology

Course Overview:
The experiential Books to Blockchain Humanities Lab investigates connections between earlier practices of organizing knowledge to newly invented ones seeking a continuum from archives and catalogs to open data and digital ledgers, like blockchain. Our inquiry centers on enumeration and commensuration--ways of knowing by tabulation and comparison. We explore digital assets as new forms of societal architecture reflecting on how information is organized, and the systems of power embedded in these structures. The three faculty instructors, in conjunction with guests speakers, will read and converse in units focusing on the past, present, and future of digital social architectures. We seek to reimagine digital knowledge infrastructures that center art and humanities as methods of interdisciplinary problem solving.

Using a field guide to arrange our inquiry, we will build taxonomies and map relationships of social architectures in digital and physical life, from a university library, a community archive, music royalties association, bitcoin communities, and shared energy collectives, to archives of daily life. New York City will be a classroom laboratory to reimagine data epistemology through observations of knowledge infrastructure varieties. The project navigates political and civic inclusion alongside concerns of economics, law, and property rights to better understand old, new, and emerging approaches to pattern discovery.

Course Format:
Classes will be conducted using small and large group discussions with field trips.

Course Technology:
The course will use the university's learning management system in addition to other systems to support student collaboration. The syllabus, details about assignments, and any other general course information will be available on the site. The learning management system will manage course material and assignment submissions. Students will annotate readings together and use cloud-collaboration systems such as Google Docs.

Required Reading:

Weekly reading material will be available through the Learning Management System:

Recommended Reading:
If blockchain and bitcoin technology are new to you, you may want to get these books. We will be reading some chapters from them.

- Narayanan et al (2017) Bitcoin and Cryptocurrency Technologies.
- Werbach, K. (2018). The blockchain and the new architecture of trust. MIT Press.
- Lampland, M., & Star, S. L. (2009). *Standards and their stories: How quantifying, classifying, and formalizing practices shape everyday life*. Ithaca: Cornell University Press.

Course Requirements

10% Classroom participation
Students will attend class and participate in written and spoken weekly activities.

10% Readings
Students will submit a response to the readings on assigned weeks. Credit / No Credit

20% Discussion Board
Students are responsible for regularly writing a brief statement on the class discussion board on assigned weeks. Credit / No Credit.

20% Presentations
Identify enumeration and commensuration within a knowledge infrastructure. Students will create a slide presentation to share with the class. This is an interim stage for the final project.

10% Evaluations
Critically assess a knowledge infrastructure. Students will work in teams during class to evaluate the power relationships within these social architectures and consider alternative solutions. Credit / No Credit.

30% Final Project
This project investigates the enumeration or commensuration of a knowledge infrastructure in the past, present, or future. The project can be submitted in one of three options: 6-8 page double spaced paper, 4-5 visualizations or tables of data analysis with 2 pages of commentary, two running software programs with one page summary, or studio art with an artist's statement.

Policies

Accommodations for NYU Students with Disabilities:
Any student attending NYU who needs an accommodation due to a chronic, psychological, visual, mobility and/or learning disability, or is Deaf or Hard of Hearing should register with the Moses Center for Students with Disabilities at 212 998-4980, 240 Greene Street, www.nyu.edu/csd.

Attendance Policy:
Attendance is expected in this course. Material is presented in class that is unavailable in assigned readings, so it is highly recommended that you attend every class. There are no texts or notes than can substitute for the discussion and interaction that will take place in class. Please be on time for class. You are responsible for turning in assignments when they are due and for knowing information announced in class, *whether or not you were in class on any particular day.* It is your responsibility to obtain handouts, assignments, and information you missed when absent.

Late Work:
All papers and projects are due *at the beginning of class* on the date they are due, unless you have made other arrangements with me *before* the due date.

Academic Integrity

The following is adapted from the NYU Steinhardt *Student's Guide* (p. 24) and from the Policies and Procedures of the NYU Expository Writing Program (available from http://www.nyu.edu/cas/ewp/html/policies/procedures.html):

The relationship between students and faculty is the keystone of the educational experience in the Steinhardt School at New York University. This relationship takes an honor code for granted. Mutual trust, respect, and responsibility are foundational requirements. Thus, how you learn is as important as what you learn. A University education aims not only to produce high-quality scholars but also to cultivate honorable citizens.

Academic integrity is the guiding principle for everything you do; from taking exams, making oral presentations, to writing term papers. It requires that you recognize and acknowledge information derived from others, and take credit only for ideas and work that are yours. You violate the principle of academic integrity when you • cheat on an exam; • submit the same work for two or more different courses without the knowledge and permission of all professors involved; • receive help on a take-home examination that calls for independent work; • "collaborate" with other students who then submit the same paper under their individual names. • give permission to another student to use your work for a class. • plagiarize.

Plagiarism, one of the gravest forms of academic dishonesty in university life, whether intended or not, is academic fraud. In a community of scholars, whose members are teaching, learning, and discovering knowledge, plagiarism cannot be tolerated. Plagiarism is failure to properly assign authorship to a paper, a document, an oral presentation, a musical score, and/or other materials, which are not your original work. For a very helpful self-test on what constitutes plagiarism, please visit http://www.indiana.edu/~istd/practice.html. You plagiarize when, without proper attribution, you do any of the following:

• Copy verbatim from a book, an article, or other media;
• Download documents from the Internet;
• Purchase documents;
• Report from others' oral work;
• Paraphrase or restate someone else's facts, analysis, and/or conclusions;
• Copy directly from a classmate or allow a classmate to copy from you.

Commitment to Inclusion, Equity, Anti-Racism, and Anti-Subordination

NYU values an inclusive and equitable environment for all students. This class intends to foster a sense of community that honors a wide range of ideas, people, backgrounds, skills, and identities. We believe that all ethnicities, national origins, gender identities, sexual orientations, religious, and political affiliations deserve to be treated with respect without subordination to historic patterns of marginalization. Your participation in our collective learning community is essential. If you ever feel excluded or if your performance in class is impacted by negative experiences inside or outside of class, please reach out.

Course Outline

Week 1
Introduction to the Course - Measurement & Transactions

- Van Doren, Charles (1992) A History of Knowledge: Past, Present, and Future. Chap 1.
- Bitcoin's Academic Pedigree by Arvind Narayanan & Jeremy Clark. CACM, 2017
- IEEE Spectrum (2012) How BitCoin Works.

Week 2 - Enumeration and Commensuration
Unit 1: History of Record-Keeping

An overview of knowledge formats and the history of record-keeping. Distinguishing counting (enumeration) and comparison (commensuration). Common formats from the library to the catalogue to the archive.

Readings: The Power of measurement

- Wernimont, J. (2019). Numbered Lives: Life and death in quantum media. MIT Press.
- Espeland, Wendy N., and Stevens, Mitchell L. (1998). Commensuration as a Social Process. *Annual Review of Sociology*, 24(1): 313-343.
- Fourcade, Marion. (2011). Cents and Sensibility: Economic Valuation and the Nature of "Nature." American Journal of Sociology, 116(6), 1721-1777.
- Lampland & Star (2009). *Standards and their stories: How quantifying, classifying, and formalizing practices shape everyday life*. Chapter 1 - Ithaca: Cornell University

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Week 3 - Paper Machines

Unit 1: Past: History of record-keeping

Readings: The machine and the idea of objective records

- Haber, S. and Stornetta, W. S. (1991). How to timestamp a digital document. Journal of Cryptography, 3(2): 99–111.
- Narayanan et al (2017) Bitcoin and Cryptocurrency Technologies. Chapter 1. Introduction.
- Krajewski, M. (2011). *Paper machines: About cards & catalogs, 1548-1929*. Cambridge, MA: MIT Press.
- McArthur, Tom (1986) Worlds of Reference : Lexicography, Learning, and Language
- Bishop, Claire and Columbus, Nikki. (2020, January 7). Free Your Mind: A Speculative Review of #NewMoMA, n+ 1 Magazine. https://nplusonemag.com/online-only/paper-monument/free-your-mind/.

Field TRIP / Workshop

Week 4 - Archive Fever

Unit 1: Past: History of record-keeping

Readings: Archive Fever

- Gitelman, L. (2013). *"Raw data" is an oxymoron*. MIT Press.
- Anderson, Jane and Christen, Kim. (2019). Decolonizing Attribution: Traditions of Exclusion. *Journal of Radical Librarianship*, 5: 113-152.
- Derrida, J. (1996). Archive fever: A Freudian impression. University of Chicago Press
- G. Borggreen, & R. Gade (Eds.), Performing Archives/Archives of Performance

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Week 5 - Decentralization
Unit 2: Present: Digital memory
Contemporary attempts to decentralize knowledge and create new forms decentralized autonomous organizations within the context of existing memory institutions.

Readings: Blockchain and the decentralization of knowledge

- Brekke, Jaya Klara. (2019). The white paper guide. In Jaya Klara Brekke and Ben Vickers, Eds., *The White Paper by Satoshi Nakamoto*. London: Ignota, (pp. 19–63).
- Werbach, K. (2018). The blockchain and the new architecture of trust. MIT Press. Chapter 1- 2
- Renwick & Gleasure (2020). Those who control the code control the rules: How different perspectives of privacy are being written into the code of blockchain systems. Journal of Information Technology. https://doi.org/10.1177/0268396220944406

Week 6 - Memory Organizations
Unit 2: Present: Digital memory
Readings: The University & Archival Futures

- Alsheikh-Ali AA, W Qureshi, MH Al-Mallah, and JPA Ioannidis. 2011. Public Availability of Published Research Data in High-Impact Journals. PLoS One 6: e24357. DOI:10.1371/journal.pone.0024357
- Hey, T, S Tansley, and K Tolle (Eds.). 2009. The Fourth Paradigm: Data-Intensive Scientific Discovery. Redmond, WA: Microsoft Research.
- Nature Editorial, 2009. Data's shameful neglect. Nature 461:145.
- Nakamura, L., & Chow-White, P. (2013). Race After the Internet. Routledge.

Field TRIP / Workshop
Fieldtrip: Fales Library or Fieldtrip: Chinatown Art Brigade Community Archives

Week 7 - Making Memories
Unit 2: Present: Digital memory
Readings: Memory practices and transcription

- Mathews, Max (2007) Lektrowsky's Will
- Power, M. (2013). The audit society: Rituals of verification (2nd ed.). Oxford University Press

- Bowker, G. C. (2005). Memory practices in the sciences. Cambridge, MA: MIT Press.
- Pasquale, F. (2015). The black box society: The secret algorithms that control money and information.
- Zelizer, V. A. R. (2017). Morals and Markets: The Development of Life Insurance in the United States. Columbia University Press.

Week 8 - Long-term Ledgers
Unit 3: Future: Digital memory

Future possibilities for assessing value over long periods of time and storing values in digital ledgers with applications in finance, art, and musical royalties.

Readings: Economic value and intrinsic value

- Adler, Amy. (2016). Fair Use and the Future of Art. *NYU Law Review,* 91(3): 559-626.
- Gerber, Alison (2017). *The Work of Art: Value in Creative Careers,* Stanford University Press.
- Hyde, Lewis. (1983). *The Gift: Imagination and the Erotic Life of Property.* Vintage.
- Akerlof, George A. (2020). Sins of Omission and the Practice of Economics. *Journal of Economic Literature,* 58(2): 405-418.

Week 9 - Sociology of Finance
Readings: Transactions and collective distributions

- Dodd, N. (2014). *The Social Life of Money* (REV-Revised). Princeton University Press.
- Frickel, S., & Moore, K. (2006). *The new political sociology of science: Institutions, networks, and power*. Madison: University of Wisconsin Press
- Busch, L. (2011). Standards recipes for reality. Cambridge, Mass: MIT Press

Field TRIP / Workshop
Fieldtrip: Silicon Alley / Wall Street or Fieldtrip: New York Archivists . NYC Association of Records Managers and Administrators

Week 10 - Rights and Royalties
Readings: Blockchain in media and entertainment

- Catlow, Ruth. Garrett, Marc, Jones, Nathan and Skinner, Sam (Eds.). (2017). Artists re:Thinking the Blockchain. Liverpool, UK: Torque Editions, Furtherfield and Liverpool University Press.
- Protokol (2022) Blockchain Use Cases in Media and Entertainment. https://www.protokol.com/insights/top-5-blockchain-use-cases-in-media-and-entertainment/
- Deloitte (2021) Blockchain @ Media. A new Game Changer for the Media Industry. https://www2.deloitte.com/de/de/pages/technology-media-and-telecommunications/articles/blockchain-at-media.html

Field TRIP / Workshop

Unit 4: Field Guides
Students presentations will be paired with guests speakers to generate a conversation around each knowledge organization format.

Week 11 - Field Guide to the Past
Student Presentations

Week 12 - Field Guide to the Present
Student Presentations

Week 13 - Field Guide to the Future
Student Presentations

Week 14 - Conclusion

- Bitcoin's Blockchain Technology Won't Change Everything. Arvind Narayanan and James Grimmelmann Feb 15, 2016 http://www.slate.com/articles/technology/future_tense/2016/02/bitcoin_s_blockchain_technology_won_t_change_everything.html

Finals Week
Gallery Show / Final Projects Due

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