

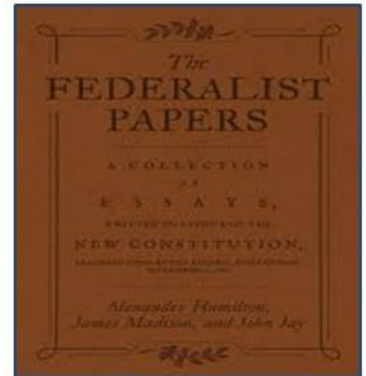
Online Communication in the Digital Age
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Lecture – 23
Towards an Intersectional Approach to Digital Humanities

Good morning dear friends and welcome to this module. In the previous module, we had discussed digital humanities and its influence on literary analysis. Today, we will look further into stylometric analysis and the premises upon which it rests. We shall also look at its application to certain works and discuss how algorithms used in DH projects produce universalist notions of the human, the formation of postcolonial studies and digital humanities. Digital humanities are important today as they can interfere in knowledge production in the digital age and the role of colonial violence in the development of digital archives. Stylometry as a quantifying activity has a long and varied history.

It also has some role in legal court cases where the accused had been acquitted on the basis of stylometric evidence. Let us try to look at its definitions first.

Stylometry

- Stylometry is an algorithmic development for the statistical analysis of literary style.
- Stylometry has been used extensively by the American statisticians, Frederick Mosteller and David Wallace, in the study of the 'Federalist Papers' to identify the authorship, linguistic patterns and writing styles of its authors.
 - 'Federalist Papers' was a series of 85 essays written by Alexander Hamilton, James Madison, and John Jay under the pseudonym "Publius".
- Stylometric analysis rests on the assumptions that:
 - Authors have a 'stylistic naturalism'
 - Stylometry measures subconsciously inscribed features of a text
 - Authorship is the underlying textual feature that can be ascertained by the study of quantified formal aesthetics



It was Mosteller and Wallace who used Stylometry for authorship attribution in Federalist Papers
Source:www.barnesandnoble.com



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Stylometric authorship attribution can also sometimes lead to disastrous failures of course. Don Foster attributed the poem, A Funeral Elegy to William Shakespeare using a raft of stylometric approaches. When Foster refused to accept arguments against his attribution, a stylometric work by multiple other scholars pointed to the 17th century playwright and poet John Ford as the most likely author of the poem. Let us take an

example of how a stylometric analysis was used to understand the style of the American author Henry James and to distinguish his novels from his contemporaries.

Stylometric Analysis of Henry James' Novels

- Technique of 'Cluster Analysis' groups novels based on the similarities and differences of the frequencies of the most frequent words.
 - James' novels form one of two main clusters, reflecting the distinctives of his style.
- 'Chronological Stylometry' was used to document the development of the style of Henry James.
 - A 'Delta' analysis, which is a measure of textual differences', was conducted which treated early, intermediate and late James as three different authors.
 - *Roderick Hudson*, *The Bostonians* and *The Ambassadors* have been chosen as representatives of the three phases based on their publication dates and similar size.



David L. Hoover, professor at New York University, conducted a stylometric analysis to understand the stylistic differences between James' novels of the 1870's and those written after 1900.
Source: en.nyu.edu

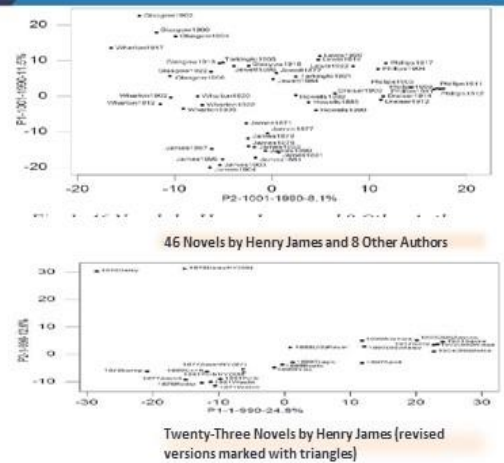


The technique of Cluster Analysis groups novels or for that matter any other works based on the similarities and differences of the frequencies of the most frequently used words.

The novels of Henry James form one of two main clusters reflecting the distinctives of his style. Chronological stylometry was used to document the development of his style. A delta analysis which is a measure of textual differences was conducted which treated early intermediate and late works of Henry James as that of by three different authors. Roderick Hudson, *The Bostonians* and *The Ambassadors* have been chosen as representatives of the three phases based on their publication dates and similar size. Hoover feels that James did have a style.

Also, the stylistic differences between his novels of the 1870s and those written after 1900s are definitely extreme. Citing R.W. Short, he comments that his syntactic distortions often obliterate the normal elements of connection and cohesion. Grammatically speaking, his meanings float untethered but they also make his later work more connotative in a different sense.

- The chronological characterization of James' vocabulary was documented in his early, intermediate and late novels.
 - 'Zeta' and 'lota', the stylometric measures that focus attention on words that are characteristic of an author, were used.
 - Zeta identifies characteristic words of moderate frequency, whereas lota identifies characteristic words of low frequency.
 - There was significant difference between early and late style as James became more interested in the psychological landscape and the social scene of his novels rather than the physical settings.



* Source for content and graphs :Hoover, David.L., "Corpus Stylistics, Stylometry, and the Style of Henry James", <https://www.jstor.org/stable/10.5325/style.41.2.174?typeAccessWorkflow=login&seq=22>

The chronological characterization of James' vocabulary was documented in his early intermediate and late novels. Zeta and Lota, the stylometric measures that focus attention on works that are characteristic of an author were used. Zeta identifies characteristic words of moderate frequency whereas Lota identifies characteristic words of low frequency. There was significant difference between early and late styles as James became more interested in the psychological landscape and the social scene of his novels rather than the physical settings. The modern phase of a stylometry has now been changed by the influx of techniques from the domains of computer science and artificial intelligence.

Pattern recognition has become one of the central focus of a stylometry. It uses AI techniques like neural networks in most cases of disputed authorship where the discriminating pattern is unknown and possibly difficult to recognize. The initial works involving neural networks with the stylometry were papers based on the dramatists. Controversies about Shakespeare versus Fletcher and Shakespeare versus Christopher Marlowe were taken up.

Neural Networks with Stylometry

It was the papers of **Robert Matthews** and **Thomas Merriam** that looked at the **Shakespeare/Fletcher** and **Shakespeare/Marlowe** controversy using neural network stylometry about the plays associated with both sets of authors.



Source:debsdespatches.com

- Neural networks have the ability to recognize the underlying organization of data, which is vital for pattern recognition problem.
- A neural network needs to be trained on patterns known as 'training set' to distinguish between two authors before it can attempt to classify unknown texts.
- They make use of MLP (Multilayer Perceptron) that perform classifications based on discriminators.

- Two sets each of five discriminators were used as inputs, an example being values of the ratio of words "upon/(on+upon).
- The network was then trained to recognize the works of both **Shakespeare and Fletcher** from their core canons.
- In order to solve the mystery of the authorship of the play *The Two Noble Kinsmen*, the network added quantitative support to the viewpoint of traditional literary scholarship that the play was a genuine collaboration between the two playwrights.



Source:www.smithsonianmag.com

- In the **Shakespeare/Marlowe** controversy, the network was trained to discriminate between the works of the playwrights.
- Based on its suggestion, the anonymous play *Edward III* was found to be written by Shakespeare under considerable influence from Marlowe.

It was the papers of Robert Matthews and Thomas Merriam that looked at these controversies using neural network stylometry about the place associated with both set of authors.

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In the Shakespeare Marlowe controversy, the network was trained to discriminate between the works of the playwrights and based on its suggestion, the anonymous play *Edward III* was found to be written by Shakespeare under considerable influence from Marlowe. The authorship of *Double Falsehood* a play by Lewis Theobald has also been contested whether it might have been written by Shakespeare or Fletcher. Researchers



quantify the complexity of their language to identify the play as the work of William Shakespeare. Like neural networks, genetic algorithms also use stylometry as part of pattern recognition. Genetic algorithms learn by generating a large number of syntactically valid, but semantically meaningless rules.

The same method was used to determine the probable Italian author who goes under the pseudonym Elena Ferrante, writer of the highly acclaimed Ferrante corpus or the Neapolitan novels.

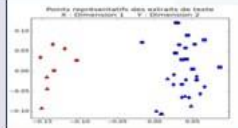
The Probable Author of the Ferrante Corpus?*

- Eight books written by Elena Ferrante were chosen to decide on the style.
- Domenico Starnone regularly appears as one of the possible authors of the Ferrante corpus.
- Seven books of Erri de Luca have been added for comparison to the books of Ferrante and Starnone.

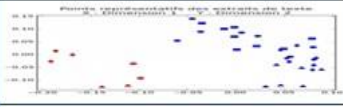
A stylometric text analyses based on algorithms of data compression and research in genomic analysis were conducted to identify the author of the Italian '**Ferrante**' corpus, who goes under the pseudonym **Elena Ferrante**.

*Refer OrphAnalytics.com
Sources: orphanalytics.com

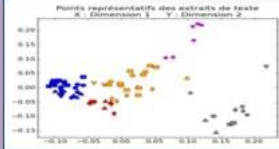
- Stylometric analysis of the seven e-books of the Ferrante corpus in Italian.
- Each symbol represents the whole or a fragment of a text of 100,000 characters.
- The red shapes represent Ferrante's first three novels; The blue shapes represent four volumes of Ferrante's tetralogy.
- The closer the points, the more similar the style of the texts.




- Stylometric analyses of the seven e-books of the Ferrante corpus in English.
- The red shapes represent the first three novels; blue shapes represent the tetralogy.
- The difference in style between the original and the translation would be representatives of a different author or one author able to write in two different styles.



- Stylometric analysis of the Italian e-books of Ferrante, Starnone and DeLuca.
- Pink Pentagons represent the essay 'La frantamaglia' signed by Ferrante; Orange shapes represent Starnone's works; Grey shapes represent De Luca's books;
- DeLuca's style is distant from that of Ferrante but Starnone's style is close to the Ferrante counterpart.




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For this project, eight books written by Elena Ferrante were chosen to decide on the style. Domenico Starnone regularly appears as one of the possible authors of the Ferrante corpus. Seven books of Luca have also been added for the comparison to the books of Ferrante and Starnone. Stylometric analysis of the seven e-books of the Ferrante corpus in Italian was taken up and each symbol here represents the whole or a fragment of a text of more than one lakh characters.


The red shapes represent Ferrante's first three novels and the blue shapes represent four volumes of Ferrante's tetralogy. The closer the points, the more similar the style of the texts. So, with these diagrams and the analysis given against them, we can make out that

a stylometric text analysis is based on algorithms of data compression and research in genomic analysis. These approaches are taken to identify the author specifically. These DH linguistic analysis allow us to seriously consider that Domenico Starnone could be the author writing under the pseudo name Elena Ferrante.


His style is stylometrically close to hers. However, even though stylometry has been widely used, it still requires better methods of visualizing and clarifying large scale stylistic characteristics and changes. Corpus-based and computer-assisted methods will surely be at the center of much of this work. It also becomes important to talk about the social developments that have facilitated Digital Social Reading or DSR and the application of digital humanities methods to it.

Digital Social Reading

- Digital Social Reading (DSR) refers to shared reading experiences which happen either offline or online.
 - It involves the use of digital technology and media, either for reading or for sharing experiences elicited by books.
- Manual Coding brought out the different emotional registers that reviews like 'Goodreads' employ, while 'Sentiment Analysis' was used for analysis at a larger scale.
- These analyses show what readers value in a text, metaphors for reading or the ethical positions that readers take in processing controversial books.
 - For example, several aspects of evaluation and some political variables were manually coded and qualitatively analyzed in Kiran Desai's *The Inheritance of Loss* (2006).
 - User reviews were found to be much more negative than professional reviews.



Kiran Desai's *The Inheritance of Loss*
Sources: www.britannica.com, www.goodreads.com



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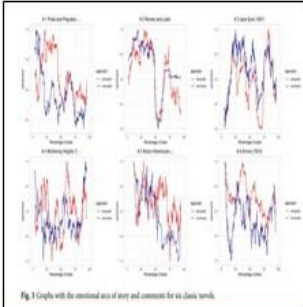
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example, several aspects of evaluation as well as some political variables were manually coded and qualitatively analyzed in Kiran Desai's *The Inheritance of Loss*. User reviews were found to be much more negative than professional reviews.

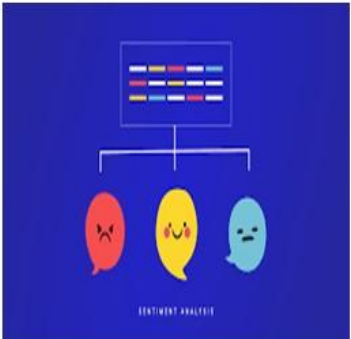
It might have happened like this because the book was targeted for a literary audience rather than the popular one. DSR research is reader oriented. It focuses on the act of reading itself and not on the interaction among readers, not on the digital reading platforms. It is the unprecedented access to the reader's experience that matters. Let us take a case study of sentiment analysis on the online platform Wattpad for reading and commenting on fiction.

Case Study on DSR- Sentiment Analysis of Wattpad

- The case-study was based on Wattpad commenting practices using sentiment analysis.
 - The goal of the project was to test if there is a match between the emotions represented in the story and those perceived by readers.
 - This was done by investigating the progression of readers' response to a story, linking the verbalization of emotional responses to particular text passages.



- The graphs plot the emotional valence of readers' response along the progression of the story.
- By comparing the story sentiment with the comments' sentiment, it was discovered that positive emotions in the story elicit readers' positive utterances.
- The intervals where the two sentiment values have extreme peaks or diverge allow to identify text parts that trigger stronger emotions contrasting with the story events.
- This provides a link between textual features and readers' emotional response to stories.



Source: exemplary.ai, Simone Rebora- Digital Humanities and Digital Social Reading

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The intervals where the two sentiment values have extreme peaks or diverge allowed to identify text parts that trigger stronger emotions contrasting with the story events. This provides a link between textual features and reader's emotional response to stories. Such techniques allow a semi-automatic selection of text parts for critical readings and further exploration of reader responses. Let us look at certain implications of digital humanities. These include the critical analysis of the materiality of digital and computational technologies in relation to power, embodiment and difference.

While DH has grown, so too has a number of voices making the case for attention to race, class, gender, sexuality and other forms of identity. That is, we have to chart the ways in which intersectionality has been part of DH to ensure that it unsettles essentialist categories rather than solidifying existing assumptions about categories of difference.


Towards an Intersectional Digital Humanities

- Intersectional Digital Humanities looks at the specificities of a data set, identifies the layers of difference that intersect with it and use that knowledge as a basis for project design.
- One of the early voices that advocated for a theoretically intersectional approach to DH was Martha Nell Smith who proposes that we must take into account the “messy” facts of authorship and production- race, class, gender and sexuality.
- Axes of difference are fluid and converge in multiple ways.
 - For example, Kara Keeling’s ‘Queer Operating System’ would take sociocultural phenomena like race, gender and ability to be mutually constitutive with sexuality, media and information technologies.



“ Intersectionality is a lens through which you can see where power comes and collides, where it interlocks and intersects ”

Intersectionality originates in the work of Kimberle Crenshaw, a legal scholar who sought a model for understanding the relationship between race, gender and violence against women of color.
Source: dhica.org.au



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Intersectional digital humanities looks at the specificities of a data set. It identifies the layers of difference that intersect with it and use that knowledge as a basis for project design. One of the early voices that advocated for a theoretically intersectional approach to DH was Martha Nell Smith who proposes that we must take into account the messy facts of authorship and production in terms of race, class, gender and sexuality.

Areas of difference as we know are fluid and converge in multiple ways. For example, Kara Keeling's 'Queer Operating System' would take socio-cultural phenomena like race, gender and ability to be mutually constitutive with sexuality, media and information technologies. Therefore, design principles and technical specifications should account for influences of difference in knowledge production. For example, the considerations necessary for a project on black lesbian activism would be different from one on the oral histories of Latina trans women. Let us consider how intersectional analysis can be engaged through text mining to a large database of 20th century black drama to examine linguistic distinctiveness of gender, race and nationality.

Text Mining 20th Century Black Drama*

- The Black stage has been an important locus for exploring the evolution of Black identity and self-representation in African diaspora countries.
 - Using the Black drama data, machine learning is used to isolate stylistic characteristics of authors and/or characters having attributes like gender, race and nationality and the degree to which they interact.

<p>American Playwrights</p> <p>...the use of slang and a Southern rural background while non-American authors had very few slang words that reflected their spoken language. This traces issues like the migration of Black Americans from the rural South to Northern cities.</p>	<ul style="list-style-type: none"> • The Black drama corpus is a useful collection for exploring the Black diaspora, and the impact of colonialism and independence. • The collection contains 394 plays by American and 303 plays by Non-American playwrights written during the period 1950-2006. • The classification shows the features of the two bodies of texts- American plays are marked by their use of slang and a Southern rural background while non-American authors had very few slang words that reflected their spoken language. • This traces issues like the migration of Black Americans from the rural South to Northern cities.
<p>Non-American Playwrights</p> <p>...the use of slang and a Southern rural background while non-American authors had very few slang words that reflected their spoken language. This traces issues like the migration of Black Americans from the rural South to Northern cities.</p>	<ul style="list-style-type: none"> • Classification of the texts based on the gender of authors, characters and a combination of the two. • The Black drama collection contains 573 (82%) plays by male and 124 (18%) by female playwrights between 1950-2006. • Male authors tend to focus on legal issues, slurs, music and money while female playwrights privilege issues concerning home and emotive states; the stereotypes of traditional gender roles are more characterized in non-American male authors.
<p>*Based on Argamon et al.'s article 'Gender, Race and Nationality in Black Drama, 1950-2006'</p>	

The black stage has been an important locus for exploring the evolution of black identity and self-representation in African diaspora countries. Using the data of black drama, machine learning is used to isolate stylistic characteristics of authors and or characters having attributes like gender, race and nationality as well as the degree to which they interact. This text mining helps us to trace issues like the migration of black Americans from the rural south to northern cities. At the same time, these lists also reveal the true difference among black American male and female authors. Racial epithets used in these

plays often in a derogatory manner reveal variations of language use based on gender and nation and can also hint at larger discursive and representation issues.

Let us look at intersectional engagement in digital humanities through social media, digital archives and project designs. So, what are the intersectional engagements in DH project?

Intersectional Engagement in DH Projects



- Jessica M. Johnson's *The Codex* is an example of intersectional engagement in DH. It consists of three sites/triptych - *African Diaspora, PhD, Diaspora Hypertext* and *Seeing Dark Matter*.
- Organized into 'writing', 'research' and 'teaching' tracks, it showcases developments in African Diaspora history that intersects through feminist, postcolonial, sexuality and race theory.
- It showcases scholarship on subjects like images of "faithful slaves" in Confederate discourse, including mammies and kinship, and race and gender in Atlantic New Orleans.
- *Seeing Dark Matter* is a Tumblr driven digital archive devoted to Black diasporic Visual culture and to process Atlantic slavery through code and screen.



- The intersectional digital archive, Amy Earhart's project *The 19th Century Concord* digital archive examines the relationship between Concord, Massachusetts and American literature and history.
- By digitizing a range of materials that represent the diverse people associated with literary production, the archive allows scholars to redefine our assumptions about literary and historical representation.
- It offers insights on free African-Americans, Irish immigrants, the poor and the criminal class by intersecting across lines of gender, class etc.



- **The Emory Women Writers Resource Project** foregrounds intersectional approach through the way it structures project data.
- It includes 'Abolition, Freedom and Rights' and 'Women's Advocacy'.

Sources: www.jessicamariejohnson.com,
digitalhumanities.org, www.bing.com

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Jessica Johnson's *The Codex* is an example of intersectional engagement in digital humanities. It consists of three sides or triptych, African diaspora PhD, diaspora hypertext and seeing dark matter. The intersectional digital archive Amy Earhart's project *The 19th Century Concord* examines the relationship between Concord, Massachusetts and American literature and history. The Emory Women Writers Resource Project foregrounds intersectional approach through the way it structures project data and it includes abolition, freedom and rights and women's advocacy.

Such projects are significant to trace the progress of the intersectionality in digital humanities. In the writing and rewriting of these histories, DH practitioners must situate themselves within broader discourses instead of reaffirming the power of western academic hegemony. Communicative practices in cyberspace were pitched as a curative

to racism because identity construction in digital spaces was seen more as a performativity and this brings us to the concept of cyber race.

Cyberrace

- Lisa Nakamura, in her article *Cyberrace* (2008), talks about how digital space delineates race as a social performance.
 - Cyberrace gets distinguished from real race by its anonymity, variability and modularity; this places cyberspace as postmodern because it permitted fluid identities.
 - The internet was seen as a post-racial space as it was possible to ‘choose’ a race as our database of bodies/discourses/behaviors/images resemble all database-driven new media objects.
- However, post-racial cosmopolitans refused to turn towards the political economy of digital culture and identities.
 - Bodies must be viewed within technophilic, informationalized societies and cyberrace was shaped by the unequal access, limited forms of representation in digital culture and images of race under globalization.



Lisa Nakamura
Source:en.wikipedia.org



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The internet is seen as a post racial space as it is possible to choose a race as our database of bodies, discourses, behaviors, images resemble all database driven new media objects. However, post racial cosmopolitans refuse to turn towards the political economy of digital culture and identities. Bodies must be viewed with technophilic, informationalized societies and cyber race was shaped by the unequal access, limited forms of representation in digital culture and images of race under globalization. Initially, the concept of a post racial identity in cyberspace fed the desire for control over self-representation and self-construction. Nakamura examines how race ambivalently surfaces as both a celebratory representation as well as a white hegemonic target over internet.

Let us now look at how DH as a discipline lends itself to literary and cultural studies that reproduce ideals of race and perpetuated technological milieu that underscores its material effects on non-white bodies. Let us look at how race in relation to digital humanities is defined by white privilege and how it has institutionalized itself in a hegemonic manner by silencing alternate histories.

Race and the Digital Humanities

- There is a need to critically examine the alternate spaces in the digital humanities space that move beyond the normative ideas of a hegemonic power structure of male whiteness.
 - Gayatri Chakravorty Spivak has identified this as an ‘epistemic violence’ in which unequal power dynamics are perpetuated through the production of knowledge that silences “the other” in colonial contexts and this can be a form of violence in itself.
- Radhika Gajjala talks about how the Internet poaches territorial metaphors from colonial imagery and how humans interact with technology with a false consciousness that the digital commons is exempt from racism, xenophobia and other forms of bigotry.



Sources: www.theatlantic.com, edition.cnn.com





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Critics must address the issue that a racial bias is encoded into the objective rationale of the computer. Let us look at an article by Safiya Umoja Noble who talks about the ways in which Google reinforces hegemonic narratives and the ways in which it discursively

reflects hegemonic social power and racist as well as sexist biases. The study purports the importance of a critical race theory perspective that decenters whiteness and maleness is the lens through which results about black women are interpreted.

Google Search and its Hyper-Visibility



Safiya Umoja Noble, in her 2013 work 'Google Search: Hyper-Visibility as a Means of Rendering Black Women and Girls Invisible' points toward the cultural hegemony within Google's results on racialized and gendered identities.

The Algorithmic Bias

- Google's search engine results display an algorithmic bias by misrepresenting identity in its commercial search and interests.
- It does not provide social, historical and contextual meaning to Black women who have been historically marginalized and have been portrayed in racialized and hyper-sexualized ways.

Hyper-Visibility of Black Women Online

- Cultural images and symbols inject dominant social biases into search engine results by transmitting a coherent set of meanings that evolve historically.
- The media mis-representations of Black women being associated with pornography are typically seen in Google search results of Black women which underscores the fetishization and racialization of Black women in the genre.
- Based on the "truth" of Google search, Black women serve specifically as the deviant of sexuality when mapped in opposition to White women's bodies.

Sources: jimcrowmuseum.ferris.edu

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Google search engine results display an algorithmic bias by misrepresenting identity in its commercial search and interest. It does not provide social historical and contextual meaning to black women who have been historically marginalized and have been portrayed in hypersexualized and racial ways. Cultural images and symbols inject dominant social biases into search engine results by transmitting a coherent set of meanings that evolve historically. The media misrepresentation of black women being associated with pornography are typically seen in Google search results of black women which underscores the fetishization and racialization of black women in the genre. Based on the so-called objective truth of Google search, black women serve specifically as a deviant of sexuality when mapped in opposition to the bodies of white women.

The pictures given show one dominant narrative of black women called the Jezebel whore depicted in more than 100 years of cultural artifacts. By foregrounding pornography as the most important kind of information about black women as Google dated the 2011 ranking, these narratives are made more meaningful. We co-construct content within the technology itself by clicking on links and through hyperlinking websites.

Google Search and its Hyper-Visibility

Critical Race theory and Critical Discourse Analysis allow for a deeper reading of what it means for identity to be in the dialectical tension between the struggles for social justice organized around collective identities and the commercialization of such identities to sell ideologies.




Understanding Identity Online

- The narrative of 'Whiteness as normality' configures information technologies and software designs and is reproduced through digital technologies.
- Google's search results on "Black girls" point to the commodified nature of Black women's bodies on the web and the little agency that Black female children have had in securing non-pornified narratives about their identities; shows the visible representation of the ways in which Black girls as a sector of society are represented in Google's search process.

Colour-Blindness and Neutrality

- The ideologies of 'colour-blindness' portend a non-racist worldview and multiculturalism that obscure social and structural oppression in computer and information sciences that are shaping technological practices.
- Keyword searching reflects Blacks' and women's status online in the constructs of the internet.
- The internet is a contested space that masks itself as a 'neutral' communication environment but in reality, it privileges the male, pornographic gaze and marginalizes women as objects.

Source: ivc.Lib.Rochester.edu


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So, critical race theory and critical discourse analysis allow for a deeper reading of what it means for identity to be in the dialectical tension between the struggles for social justice organized around collective identities and the commercialization of such identities to self-ideologies. The narrative of whiteness as normality, configures information technologies and software designs and is reproduced through digital technologies.

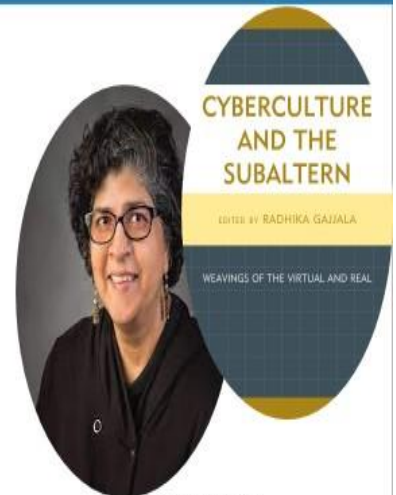
Google search results on black girls point to the commodified nature of black women's bodies on the web and the little agency that black female children have had in securing non-pornified narratives about their identities. It shows the visible representation of the

ways in which black girls as a sector of society are presented in the process of Google searches. The ideologies of color blindness, portend, a non-racist worldview and multiculturalism that obscure social and structural operation in computer and information sciences that are shaping technological practices. Keyword searching reflects blacks and women's status online in the constructs of the internet. The internet is a contested space that masks itself as a neutral communication environment, but in reality it privileges the male pornographic gaze and marginalizes women as objects.

Critical race theory perspective asks questions about the quality and content of racial hierarchies and stereotyping that appear in results from commercialized search engines like Google. Safiya Umoja Noble talks about how this expansion of commercial control over information and identity deserves attention as identity markers like black girls are for sale on the web to the highest bidder. It is because of these hierarchies forged through the internet today that people and communities use digital technologies in ways that are influenced by their cultural backgrounds, identities, and social context. This is what Radhika Gajjala, a scholar known for her work in the field of digital media studies calls as technocultural agency.

Technocultural Agency

- Radhika Gajjala, in her work *Cyberculture and the Subaltern: Weavings of the Virtual and the Real* (2012) refers to Technocultural Agency as the capacity of individuals and communities to actively shape and negotiate their experiences with digital technologies within the broader framework of culture.
 - It examines “how voice and silence shape online spaces in relation to offline actualities” (Gajjala, 1).
 - How we become technocultural agents reveals how we are ‘placed’ and in turn how we place ourselves within and in relation to cyberspace.
 - It clearly shows how our subjectivities are placed within unequal power relations manifested through hierarchies of literacies and connectivity and how technologies have repercussions not only within virtual spaces but also in our offline lives.



Radhika Gajjala

Sources: www.facebook.com, www.amazon.com

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It examines how voice in silence shape online spaces in relation to offline actualities. How we become technocultural agents reveals how we are placed and in turn how we place ourselves within and in relation to the cyberspace. It clearly shows how our subjectivities are placed within unequal power relations manifested through the hierarchies of literacies and connectivity and how technologies have repercussions not only within virtual spaces but also in our offline lives. Let us take an example of the 2002 film *Minority Report* that racializes digital information access and production by depicting scenes of white and male users experiencing direct relations with computer interfaces while users of color are relegated to the background and are relatively distant from technologically mediated relationships to their hardware and software.

Marginal Blackness in Spielberg's *Minority Report* (2002)

- Steven Spielberg's, *Minority Report*, dramatizes the ways that the post-millennial social body has become an object of surveillance via biometrics and crime databases.
 - It envisions the future regulation of the criminal body as the work of dataveillance and the gradual indoctrination of its white hero into this system's critique.
 - The whole destruction process is seen as a part of re-racialization that calls the notion of the 'whole' or singularly racialized body into question.
- The movie illustrates what the postcolonial theorist, Paul Gilroy, calls as the 'crisis of raciology' engendered by biotechnological revolution and how Black and Asian bodies are significant determinants in fixing the social optics of race as they are figured and imaged differently.



The implantation of Asian eyes into the face of the protagonist shows how race has become a networked commodity, whose imaging is different in the surveillance systems.

Marginal blackness in *Minority Report*

Source: www.youtube.com/watch?v=1jpb-Z2-FwQ, Lisa Nakamura

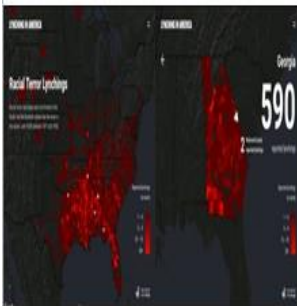


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We will compare two instances racial terror lynching maps and map of white supremacy mob violence in America.

Racism and Visualization Ethics



- Lynching in America, a promotional website made by Google for the Equal Justice initiative (EJI), contains an interactive map titled 'Racial Terror Lynchings'.
- The map draws on the dataset compiled by EJI for their report of '4075 racial terror lynchings of African-Americans'. It is focussed on the southeastern United States.
- The polygons represent the number of lynchings per state and county, with the most counties marked in bright red.
- The visual argument represented by the colour scheme, ranging from dark to bright red, references the racial terror and the violence inflicted upon African-Americans in this region as well as the geopolitical argument on White supremacy.

- Map of White Supremacy Mob Violence, is an interactive map based on the research of the sociologist Monroe Work, who systematically documented lynchings in the United States.
- Geographic lines are indicated subtly using pale colours; the dots represented by bright colours highlight individual lynching; the individual deaths are more significant than the geographical boundaries.
- The timeline provides a visual cue that racial superiority-motivated occurred continually over a long time-span.
- These elements show a strong visual argument of how discourses of white supremacy have been historically enforced through lynching and mob riots.



Sources: www.monroeworktoday.org, lynchinginamerica.eji.org



The first map draws on the data set compiled by EJI for their report of 4075 racial terror lynchings of African Americans and it is focused on the southeastern United States. The visual argument represented by color schemes ranging from dark to bright red references the racial terror and the violence inflicted upon African Americans in the region as well as the geopolitical arguments on white supremacy. The second map discusses white supremacy mob violence. It is an interactive map based on the research of the sociologist Monroe work who systematically documented incidents of violence in the United States.

The timeline provides a visual cue that racial superiority motivated occurred continually over a long time span. These elements show a strong visual argument of how discourses of white supremacy have been historically enforced through lynching and mob rights. However, in the grand scheme of racial violence lynching represented only one small piece in a complex puzzle of institutional and structural racism. It is important to understand that structural ways of racism and sexism specific to women, people of color and other kinds of societal bias are encoded in algorithms. This is what Sophia Umoja Noble has termed as algorithmic oppression or algorithms of oppression which we will

discuss in the next module.

In short, there should be an intersectional internet infrastructure that resists the oppressive representations from the neoliberal narratives of digital technologies.

Conclusion

- Neoliberal narratives of digital technologies and the internet suggest that the web is a panacea for social liberation and empowerment. But these ideas are refuted by critical theorists.
- The goal of theorizing an intersectional approach to the digital humanities will heighten awareness of how the global communication infrastructure is not made equally and equitably to all people.
- Intersectional analyses examine how digital technology intersects with socially constructed categories like gender, class, race, sexuality etc. in a matrix of relations that create conditions of inequality or oppression.



Neoliberal narratives of digital technologies and the internet suggest that the web is a panacea for social liberation and empowerment, but these ideas are refuted by critical theorists. The goal of theorizing an intersectional approach to the digital humanities will heighten awareness of how the global communication infrastructure is not made equally and equitably to all people. Intersectional analysis examine how digital technology intersects with socially constructed categories like gender, class, race, sexuality, etc in a matrix of relations that create conditions of inequality or oppression. In the next module, we will continue with intersectional digital humanities by incorporating aspects of postcolonial DH and South Asian DH.

It seeks to critically engage with issues of colonialism, imperialism and their ongoing impacts on culture, identity and knowledge production in the digital age. Thank you. .