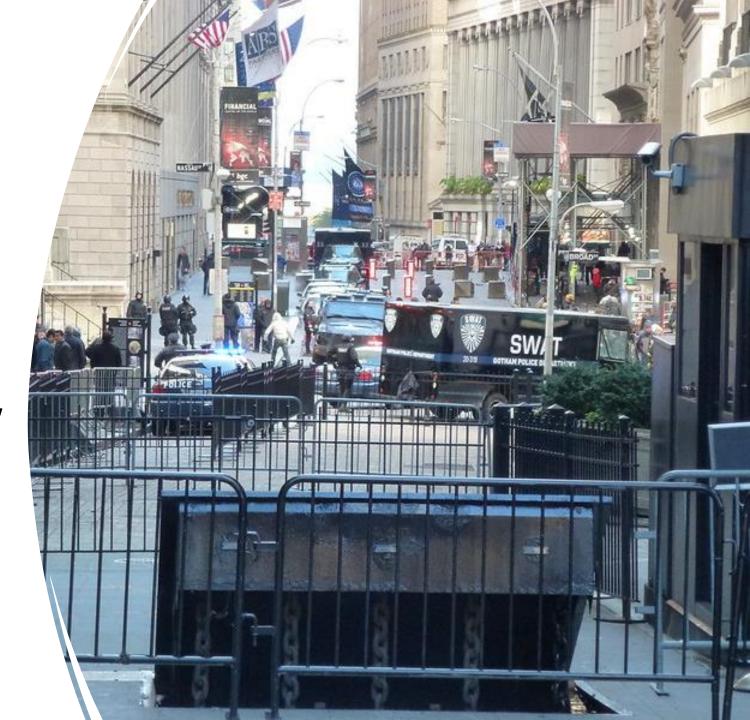


Governance and Anarchy

- We have reached a point in history where we don't know how to govern ourselves
- As individuals we struggle with what to believe and how to survive in an increasingly unfair world
- As a society we struggle with issues of power and information in the face of multiple global crises





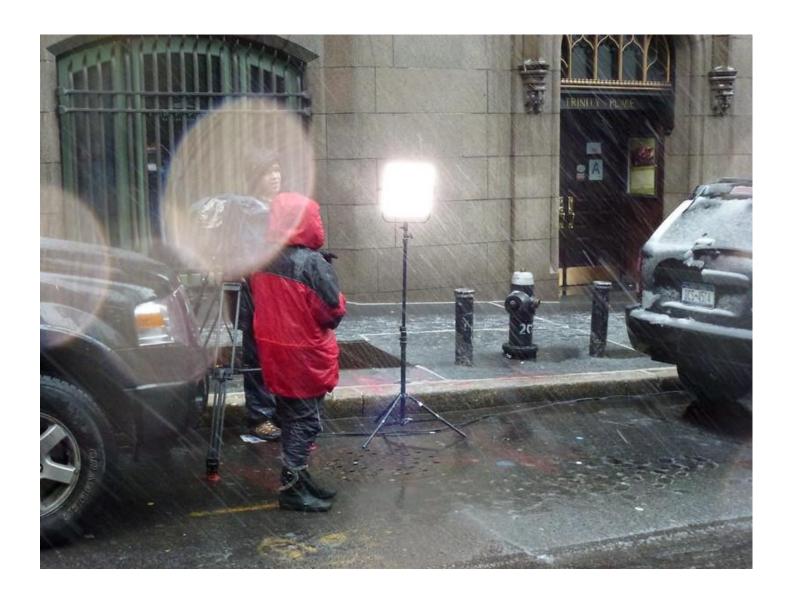
Complexity and Chaos

- Rapid change
- Information moving at the speed of light
- Globalization (and global problems)
- Division and polarization
- Breakdown of communities and institutions
- Mismanagement of complex events

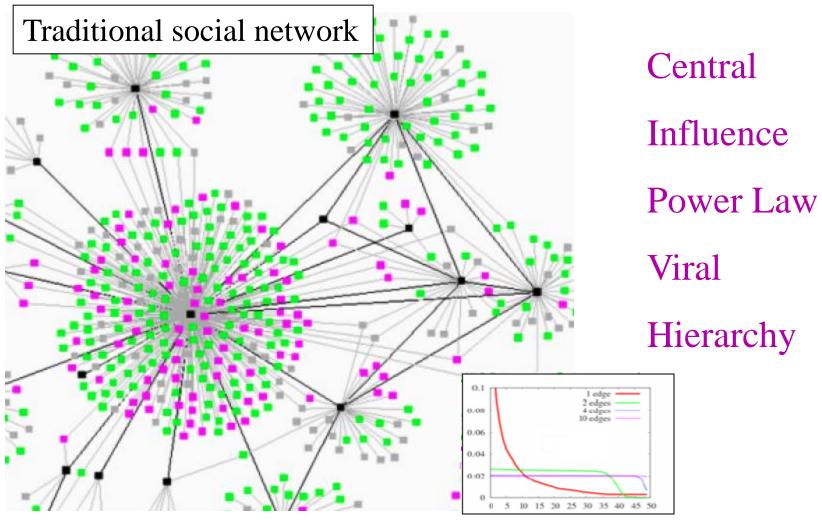
The Paucity of Our Response

- We need to view 'analytics' much more widely, as (say) "using data about students and their activities 'to help institutions understand and improve educational processes, and provide better support to learners'" (Sclater)
- We need a deeper understanding of 'ethics' as more than just a set of rules and principles. "Colleges should teach ethical reasoning rather than just ethical principles." (Sternberg)
- All of this is happening in a climate of change we have yet to fully grasp...

Society is transforming from a tree to a mesh

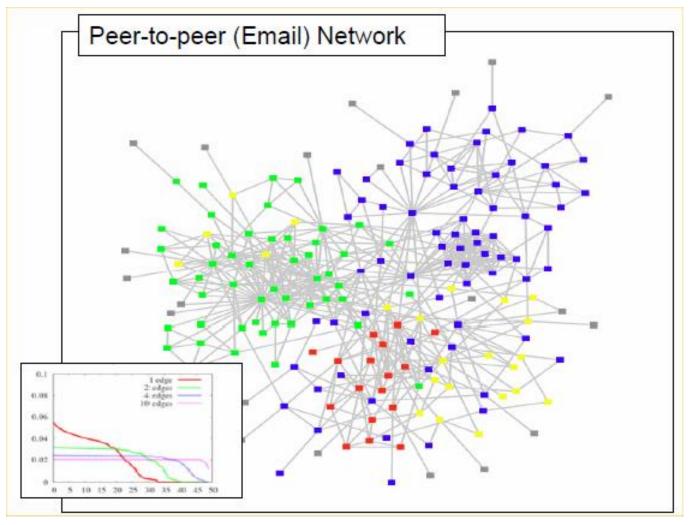


Network Structures - Tree



http://middleburydemocrats.wordpress.com/2008/09/28/college-democrats-getting-obama-to-go-viral-no-really/

Network Structures - Mesh



Distributed

Discussion

Balanced

Reflective

Democracy

http://www.daniel-lemire.com/fr/abstracts/DIVERSITY2008.html
http://www.mailchimp.com/blog/using-email-to-uncover-hidden-social-networks/

What is it Like to Live in a Mesh?

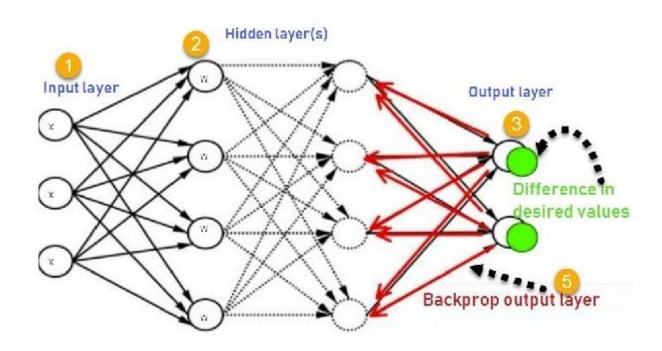
- What matters?
- How do we know?
- What can we do?
- Etc.

We are only beginning to learn



AI / Neural Networks

- Inputs and outputs
- The study of algorithms that add or strengthen/weaken connections
- Also: activation functions, topographies, etc
- The intent is to produce the set of algorithms that will produce the best result
- E.g. Hinton, Rumelhart & McClelland, etc.

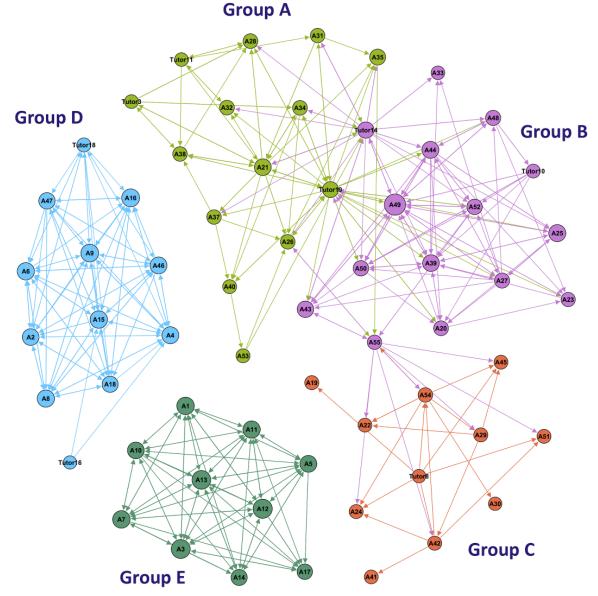


https://www.guru99.com/backpropogation-neural-network.html

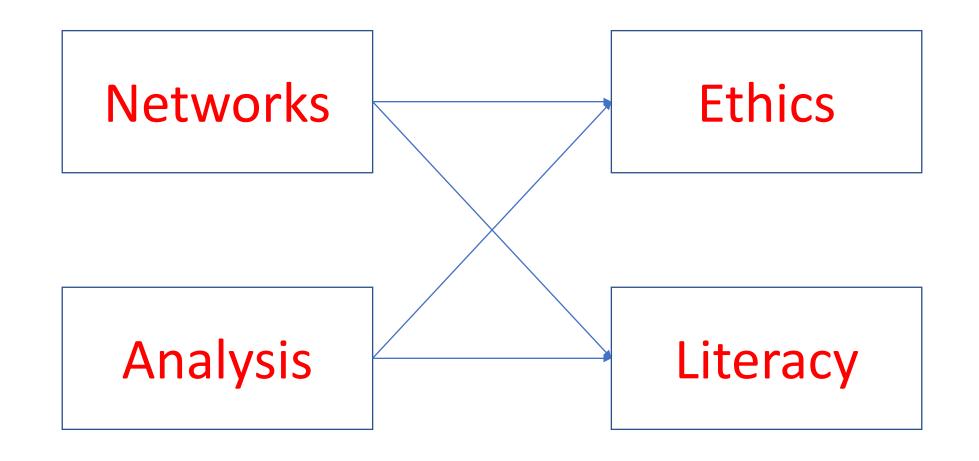
Learn more: https://machinelearningmastery.com/

Neural & Social Network Analysis

- The study of networks in the world
- Identification of entities and the connections between then
- Studies network topology and also the growth and development of networks
- Objective is to explain why things are the way they are
- E.g. Watts, Barabasi, Krebs, etc.



Learn more: https://towardsdatascience.com/how-to-get-started-with-social-network-analysis-6d527685d374



Ethics, Analytics & the Duty of Care

- MOOC October to November 2021 https://ethics.mooc.ca
- AIP-CoP AI in Learning Subcommittee Report (Government of Canada internal)
- NRC Research Ethics Board https://nrc.canada.ca/en/corporate/values-ethics/research-involving-human-participants/research-ethics-board
- Data Equity Working Group (NRC internal but see
 https://drive.google.com/drive/folders/1tjLyb6R18GTh4mR5Q56TX2ZVFz2rDgk8
- Creative Commons Ethics of Sharing Report https://docs.google.com/document/d/1GRx7V2utoVV-bd2ALzYv5fSxlIMNmMHAftEHHPbYMJQ/edit
- Ethical Codes and Learning Analytics https://www.downes.ca/post/71041

Data Literacy

- MOOC February to March, 2022
- DRDC Data Literacy Project (DRDC internal but see https://cradpdf.drdc-rddc.gc.ca/PDFS/unc362/p813314 A1b.pdf
- FAIRsFAIR book project
 https://docs.google.com/document/d/1_xs3mMDKGybSbOxHBslbH8qpTaf4gjuW6z_GSZYMk_c/edit
- What Does It mean to Enrol in a Course?

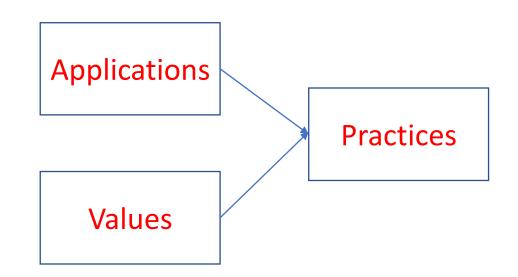
 https://docs.google.com/document/d/1kbhkWzl99-7v0G6AokTHWZr98IrPzLwqYBezb mW0wg/edit
- CovidEA Reports https://www.foggs.org/covidea/
- Blockchain and Consensus
 https://docs.google.com/document/d/1P3UbO7MaOX8N51QvQB06uMifCWiykleU0JQ2ID8fySM/edit#heading=h.34e9fogs01b4

Critical Literacies

- Applications (Self-Organization, Consensus, Learning Theory)
 - Syntax patterns, regularizes, classes, etc (where Al is now)
 - Semantics sense, reference, value, meaning, goals (where AI is moving)
- Values (Diversity, Openness, Interaction, Autonomy)
 - Use actions, persuasion, interrogations, scientific method, propaganda
 - Context alternatives, vocabulary and labels, frames, community, culture
- Practices (Aggregate, Remix, Repurpose, Feed Forward)
 - Cognition argument, explanation, definition, description
 - Change connections, flow, sequence, progression, cycles

Ethics

- Involves a comprehensive study of what the ethics actually are and how they are established
 - How We Apply Al
 - Applications of Al in Learning
 - The Decisions We Make
 - The Ethical Dimension
 - Ethical Issues Identified
 - Approaches to Ethics
 - The Duty of Care
 - Practices
 - Ethical Codes Across Domains
 - Ethical Practices in Learning Analytics



Literacy

- Applications
 - Data Literacy Models
 - Elements of Data Literacy
- Values
 - Benefits of data Literacy
 - Operational Requirements
- Practices
 - Measuring and Assessing
 - Enhancing Data Literacy

