



Social Media Misinformation and Human-Machine Decision Making Systems

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Biographical Sketch

- Dr. Joshua Alton Sipper is currently assigned to the Air Force Cyber College as a Professor of Cyberwarfare Studies. He completed his Doctoral work at Trident University in September of 2012, earning a Ph.D. in Educational Leadership (emphasis, E-Learning Leadership). Dr. Sipper's previous degrees were obtained from Troy University (M.Ed. Education) and Faulkner University (B.S. English). Dr. Sipper is a veteran who served honorably in the U.S. Air Force in the intelligence career field, and worked for Lockheed Martin in a similar capacity on the U2 program. More recently, Dr. Sipper shifted his focus into the cyber realm as a Systems Engineer for General Dynamics at the Air Force's 26th Network Operations Squadron, followed by an eight-year stint as a civil servant in the Air Force cyber career field at the Curtis E. LeMay Center for Doctrine Development and Education. Dr. Sipper currently serves as a Professor of Cyber Warfare Studies at the Air Force Cyber College, Air War College, Air University, Maxwell AFB. Dr. Sipper's research interests include cyber ISR, policy, strategy, and warfare.





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- Introduction
- Social Media and Misinformation
- Human and Machine Systems
- Human Systems Thinking
- Recommendations
- Conclusion

Types of false information



Disinformation
deliberate lie to mislead

Misinformation
honest mistake

Hoax
“deliberately fabricated falsehood made to masquerade as truth”
Wikipedia

Introduction

- Social Media misinformation is one of the most virulent types of cyberattack today
- Has only increased with COVID-19
- Bots and machines spread misinfo
- Human decision-making is largely responsible for spread as well

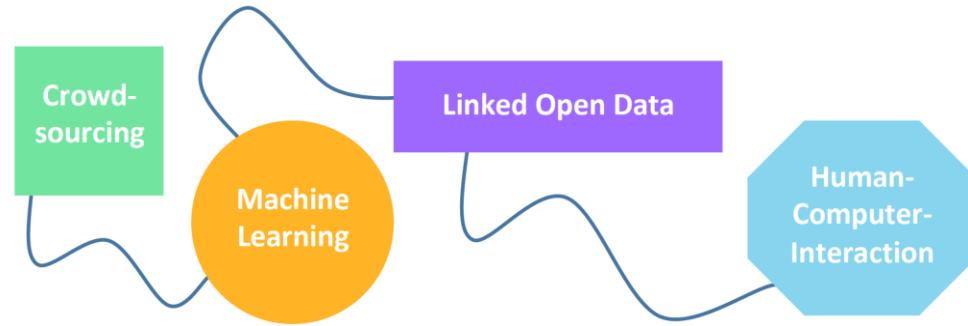




Introduction



- Misinfo propagated through human and machine interaction/cooperation
- “Misinformation Society”
- “Cyber Ghettos”
- Digital misinformation ...has been listed by the WEF as one of the main threats to human society

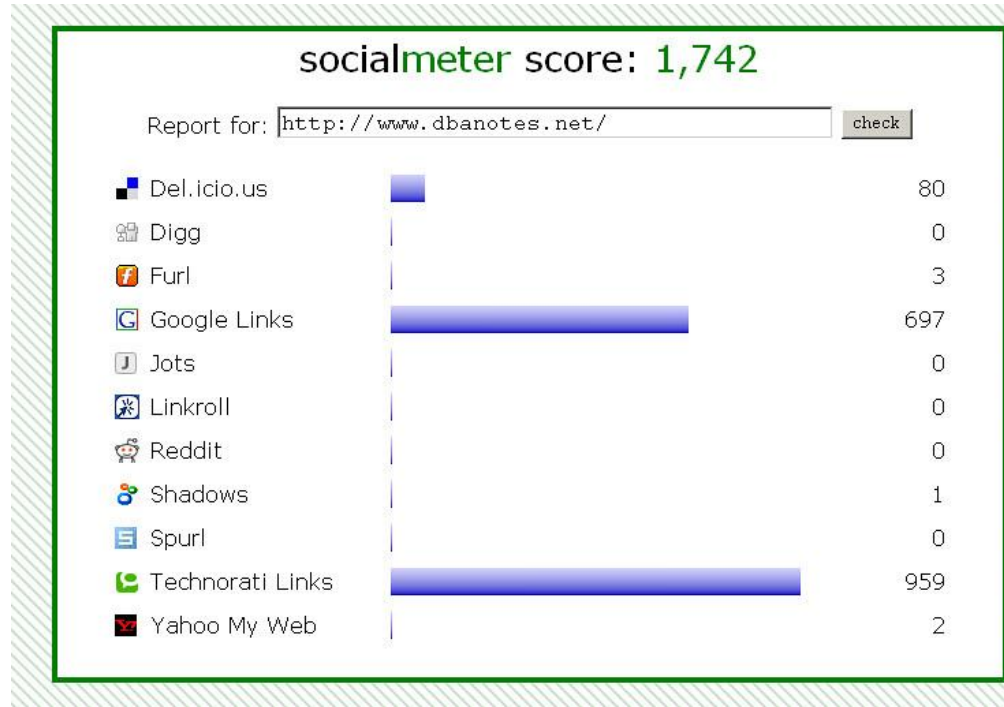




Social Media and Disinformation



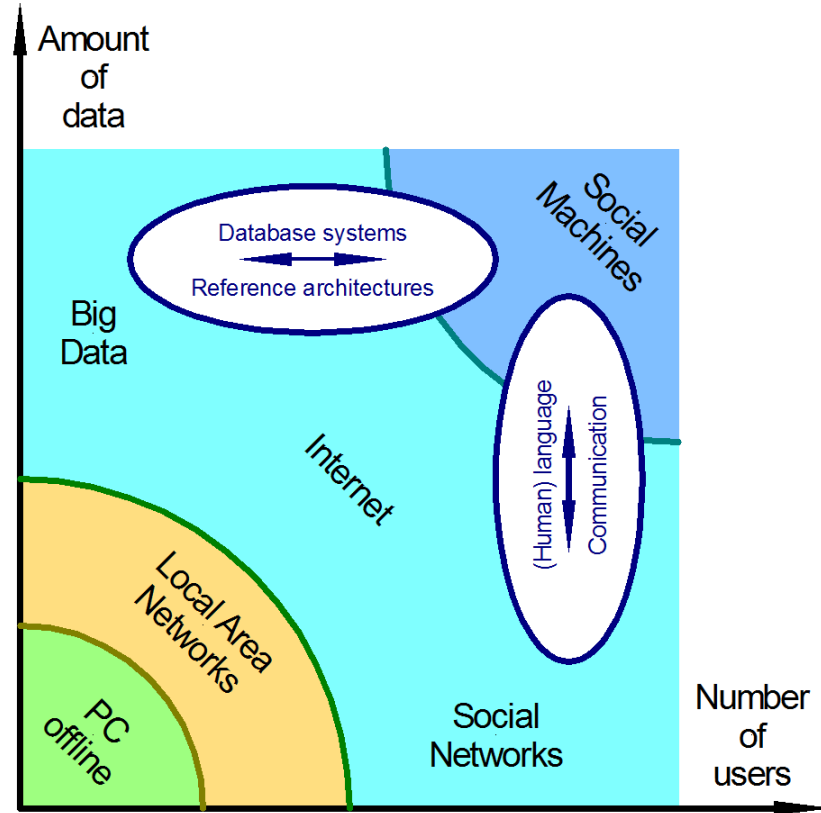
- Social Media is the “what”
- Misinformation “signaling”
- Russian Social Media influence e.g., US elections, reflexive control
- Senator Cirenga case
- Google “trustworthiness score”





Human Machine Systems

- Bots and AI
- Machine autonomy
- “Bubbles of experience”
- Automation
- Trust
- Human machine collaborative decision-making and teaming
- AI, ML, DL, and AA



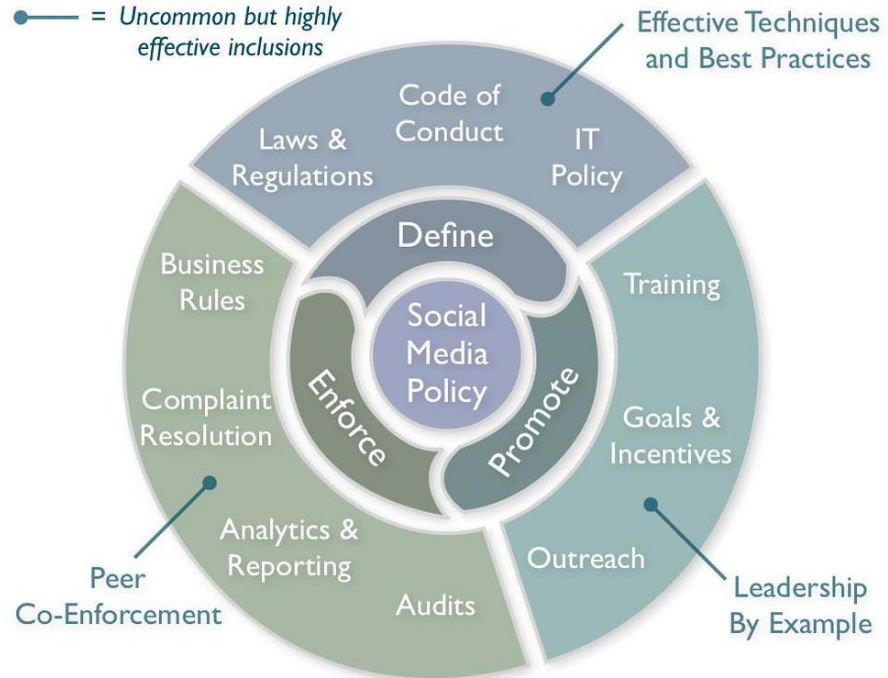


Recommendations



An Effective Policy Lifecycle Enables Social Media in Regulated Industries

- Education
 - Confirmation bias
 - Positive sharing habits
- Policy
 - Best-practices
 - Fact-checking
- Heuristics
 - Countermeasures
 - Correction and guidance





Conclusion

- Social media and internet content profusion has fundamentally changed the way human beings think, research, write, talk, and accomplish many other basic communicative functions
- Responsibility to use critical System 2 type thinking (thinking slow) and processing to overcome impulses that lead to increased damage to truth and honest, thoughtful discourse

