

Artificial intelligence and social services

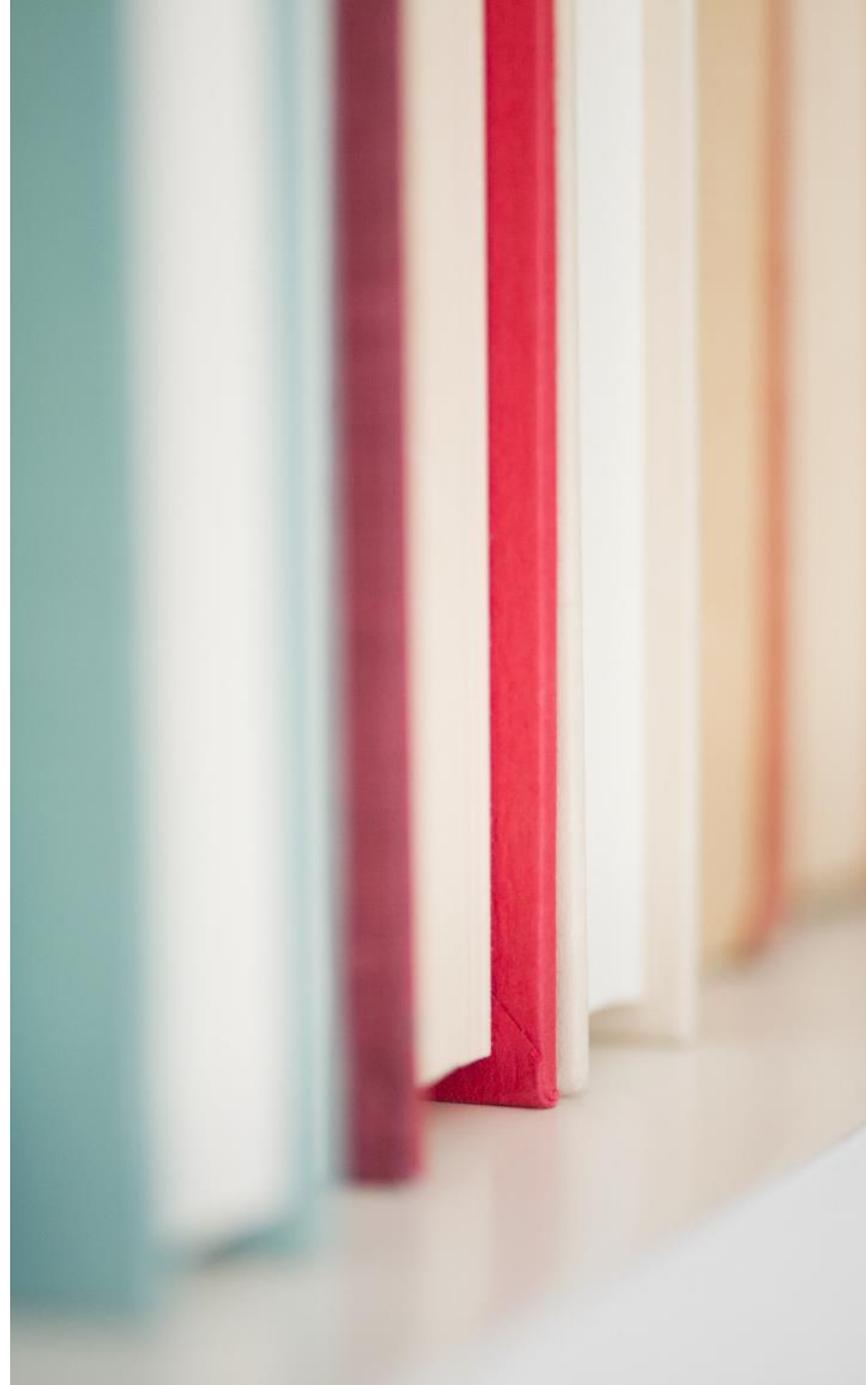
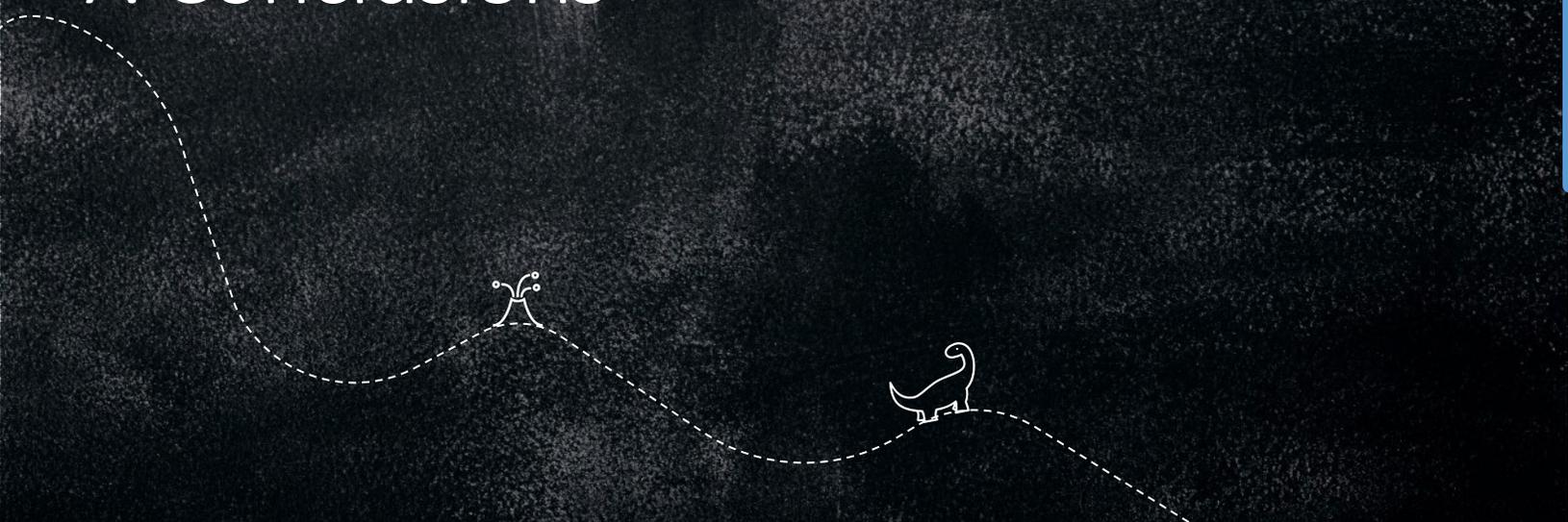
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Introduction

AI = computer systems that make tasks that require human intelligence, such as learning from experience, reasoning, problem-solving and understanding natural language.

Context in healthcare

- World's growing elderly population
- Increase of lonely people,
- Medical care costs,
- Decrease of medical experts.



Compassion and neuroscience

Cultivating compassion among medical staff reduces fatigue and increases resilience.

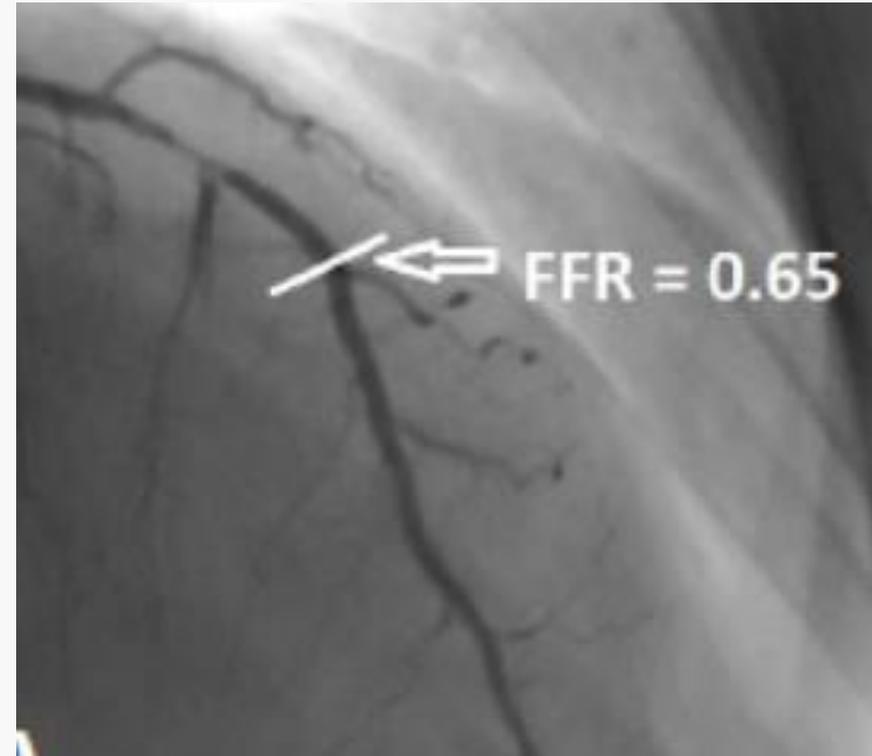
Polyvagal Theory

Compassion represents a behavior of social adaptation, which corresponds to the stimulation of the myelinated vagus nerve, which causes the slowing of the heart rate, causing the improvement of heart rate variability and important positive effects in the emotional status.

Generous people who participate in charitable activities show a distinct neurobiological profile, having a higher density of nerve cells in the temporo-parietal junction.

AI in medicine

1. Smart devices (smart insole, smart watches, etc)
2. Predictive health monitoring from wearable devices, medical records, etc – supporting elder care
3. Identify patterns and anomalies that may be difficult for human clinicians to detect,
4. Computer-aided diagnosis
5. Personalized treatment plans by analyzing data from various sources
6. Telehealth services



AI in social services

1. Autonomous wheelchair
2. Social robots
3. Rehabilitation of patients with neural diseases (Parkinson, multiple sclerosis and stroke).
4. Robots for rehabilitation of patients with neuromuscular disease
5. Cognitive games and a personalized motivational system to prevent mental disorders in seniors
6. Generative AI - chatbots and virtual therapy platforms
7. Detect potential mental health crises and enabling proactive interventions
8. Personalized learning experiences for children with autism.



1. Llarena, Adalberto & Rojas, Raul. (2016). I Am Alleine, the Autonomous Wheelchair at Your Service. 302. 1613-1626. 10.1007/978-3-319-08338-4_116
2. <https://images.app.goo.gl/eLZfTsJohT4YF3CX7>

Advantages and Disadvantages of AI

Advantages

- efficiency through task automation,
- reduction in human error,
- data analysis for informed decisions,
- transforming data into knowledge,
- assistance in medical diagnosis,
- processing large quantities of data,
- availability,
- perform repetitive jobs,
- usage in risky situations.

Disadvantages

- job displacement,
- high costs,
- energy consumption,
- ethical concerns about bias and data privacy,
- lack of explainability,
- cybersecurity attacks,
- fake information,
- make humans lazy,
- a lack of human-like creativity,
- no ethics,
- emotionless,
- no improvement,
- from a tool to a medium – changing the human mind.

Ethical AI

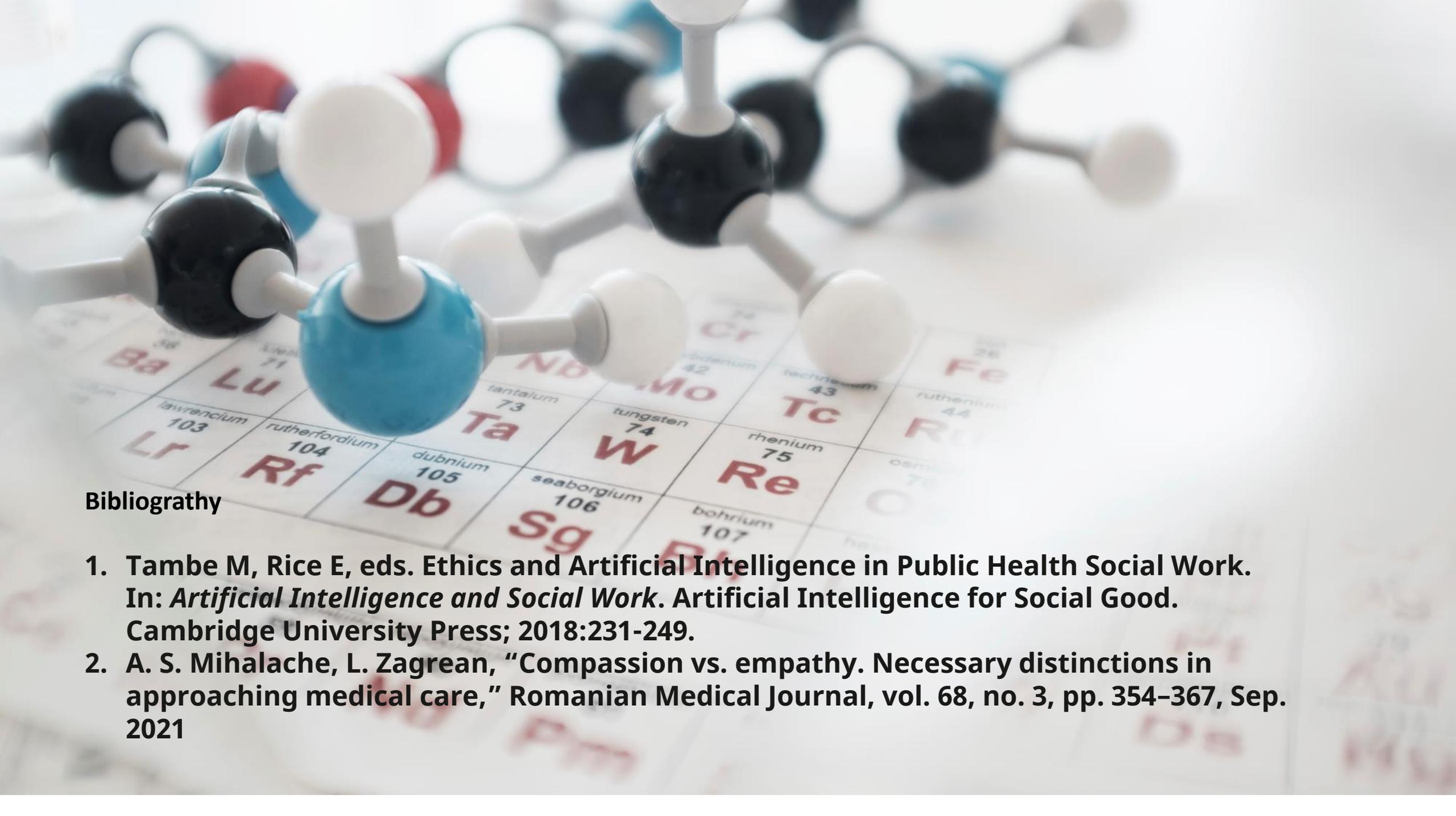
- protecting privacy,
- avoiding bias,
- fostering digital literacy among users
- employing diverse and transparent data sets,
- anonymizing sensitive information,
- human in the loop - maintaining the indispensable human touch in all AI implementations.



Conclusions

- Machines can perform tasks for what they have been programmed for; if they are demanded to perform anything else, they frequently fail or provide useless results.
- AI in healthcare - protecting patient privacy, maintaining data confidentiality, and preventing unauthorized access to personal health information are critical considerations.
- Concerns about the enthusiasm for using AI without solving the ethical principles.





Bibliography

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2. A. S. Mihalache, L. Zagrean, "Compassion vs. empathy. Necessary distinctions in approaching medical care," *Romanian Medical Journal*, vol. 68, no. 3, pp. 354-367, Sep. 2021



Thank You



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