

MISINFOMATION AND CONSUMER/PRODUCER STRATEGIES

CYBER PHYSICAL SECURITY

Daniel Frankini

Binghamton University

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Part I

BEGIN

INTRODUCTION

Misinformation in the news has become a major problem in recent years, as the proliferation of social media and online news sources has made it easier for false or misleading information to spread.



INTRODUCTION

MISINFORMATION

► Misinformation-

refers to false or misleading information that is intentionally or unintentionally disseminated to others. It can be spread through various channels, such as social media, news outlets, and even personal conversations .



GAME THEORY

is a branch of mathematics that studies decision-making in situations where individuals or groups interact with each other. It is based on the idea that individuals and organizations make decisions based on their own self-interest, and that these decisions can have impacts on others.



INTRODUCTION

MODEL

The chart below is the stage game payoff matrix for misinformation from the study paper

		Transmitter	
		Transmit fake	Transmit true
Receiver	Consume	$(-C, b_f)$	(B, b_t)
	Do not consume	$(0, 0)$	$(0, 0)$

Table S1: Stage game payoff matrix

MATH

EQUATIONS

Transmitter Equations

- ▶ Sharing true information probability equation:

$$rkt = \alpha + \Upsilon * (k/N) \quad (1)$$

- ▶ Sharing false information probability equation:

$$rkf = \beta + \Theta * (k/N)$$

MATH

EQUATIONS

Receiver Equations-

$$Q(ij) = a_0 * \delta(lt) + (1 - a_0)(1 - a_1)p_0 + (1 - a_0) * a_1 * p(ij)$$

- $a_0 * \delta(lt)$ - knowledge of veracity
- $(1 - a_0)(1 - a_1)p_0$ - inattentive engagement
- $(1 - a_0) * a_1 * p(ij)$ - memory of past stories

IMPLICATIONS

The findings of this study have several implications for understanding the spread of misinformation and how to combat it.

1. Consider the strategic interaction between consumers and producers
2. Consider the role of producers of false information,
3. Importance of addressing the algorithms and platform



FUTURE RESEARCH

The spread of misinformation on social media platforms has become a major concern in recent years, One potential area of focus for future research in this area could be to examine the specific mechanisms



CONCLUSION

In conclusion, the spread of misinformation is a major problem that can have serious consequences for public discourse and decision-making. Understanding the spread of misinformation requires considering the strategic interactions between consumers and producers of news.



REFERENCES

- ▶ Title -The distorting effects of producer strategies: Why engagement does not reliably reveal consumer preferences for misinformation
- ▶ Authors - Alexander J. Stewart, Antonio A. Arechar, David G. Rand, Joshua B. Plotkin
- ▶ Year - November 2022,

Part II

END