

Proposing A Mathematical Model with Two Sets of Population on Rumor Transmission in Social Networks to Reduce the Rumor

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Abstract

Rumor is an unverified proposition or account concerning individuals, events, or issues of public concern that circulates informally from person to person. By characteristic it lacks official confirmation of being it true or false, or a mixture of both. Rumor can be good if it acts as a "collective problem-solving" mechanism to help groups understand, adapt to, or cope with, the unknown else it can be very harmful or destructive if it is altered badly and wrongly reflecting the motivations and anxieties of the communicators. It can break the harmony of community, society and nation. Intensity of a rumor as being proportional to the importance of the subject to the individual is multiplied by the ambiguity of the situation surrounding the subject [Ralph Rosnow]. Inaccurate or intentionally misleading information framed as scientific, often spread via social media—pose significant dangers to public health, safety, harmony and the integrity of nation. It put public, society and nation in very worst situation. This kind of rumor need to stop or at least minimized up to a level that can harm least. This paper aim is to propose a mathematical model that can reduce the rumor to the least level. It deals with the two sets of population to achieve this goal. It highlights the rumor reproduction rate and how to stabilize that by doing mathematical simulation and result analysis. Researchers can use this paper to design and develop a model or enhance the capability of existing models of this area to stop the rumor intentioned bad.

Keywords: Rumor, Botnet, Endemic, Deepfakes, Stability, Analysis, Simulation, Machine Learning

1. INTRODUCTION

Rumors, defined as unverified and often false information spread among people, having far-reaching impacts. Unconfirmed information is circulated among people, typically through word of mouth or social-media platforms. It often spread rapidly and covers various topics, including gossip about individuals, newsevents, or conspiracy theories. They may contain elements of truth but are more often exaggerated, distorted, or entirely fabricated. It influences public opinion, create panic, and even incite violence. Parallel, repetitive and rapid spread of rumor makes situation worst within the day and sometime within the hour because it is circulated much faster and further than verified, true information. Scientific rumors often leverage emotional, simplistic, or fear-based, "science" language, which people are more likely to share and believe due to confirmation bias (preferring information that fits their existing beliefs. False rumors can have severe financial consequences, such as in 2013 when a fake