

How Do Facebook and YouTube Exacerbate the Spread of Misinformation?

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On my honor as a University Student, I have neither given nor received
unauthorized aid on this assignment as defined by the Honor Guidelines for
Thesis-Related Assignments

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Since the inception of the internet, the speed of access and transmission of data has reached new heights and as a result has generated both a variety of opportunities and problems associated with the collection and supervision of data online. The primary motivation of the STS research described in this paper is to highlight the mechanisms through which misinformation can spread online, specifically within the context of the social media platforms Facebook and YouTube. The primary motivation for the technical research described in this paper is to demonstrate the value of collecting granular data in agriculture by utilizing low power, wide-area sensor networks. Both components of this research represent the growing need to develop more effective methodologies to make data-driven operations more efficient while also developing the proper safeguards to prevent unexpected social consequences.

Compared to other agricultural operations, vineyard owners must be prepared to handle a variety of unpredictable factors in order to protect the quality of their harvest. For example, vineyard managers must be able to mitigate damage from threats such as low temperatures, pests, diseases, and improper irrigation. While experience-based judgment is heavily relied on when implementing mitigation actions, data, typically collected from a single weather station in the vineyard, is also currently used by many vineyard managers to inform decisions. Considering that these decisions are affected by soil conditions and microclimates that vary significantly within a single vineyard, a single weather station does not provide the necessary data to optimize decisions. The focus of the technical portion of this paper is to develop and describe an effective and cost-efficient monitoring system that collects more spatially-granular data to reflect the soil conditions and microclimates within a single vineyard. More specifically, this portion of the paper introduces the key functional characteristics of a vineyard monitoring system using low power wide-area sensor networks through ethnological research methods.

The STS research portion of this paper investigates the social and technical factors that contribute to the spread of misinformation online in the context of actor network theory. This research aims to define and approach the issue of misinformation from both a technical and social context. More specifically, the paper investigates the technical mechanisms, such as recommendation engines and advertisements, through which misinformation can spread more quickly. In the social context, this paper will aim to use survey results to combine the opinions of policymakers, social media representatives, and scholars to obtain a more holistic understanding of the social impact of misinformation. Furthermore, the paper aims to identify the key actors and stakeholder involved with the spread of misinformation on Facebook and YouTube and utilizes new paper articles to describe the political and financial motivations behind this issue.

Having worked on both the STS and technical research projects concurrently, I not only gained familiarity with the research and development process involving an emerging technology but I also gained a newfound awareness of how quickly our society must adapt to the potential ethical issues these emerging technologies may bring with their adoption. Without this opportunity of working on both the subjects concurrently, I would not have had the opportunity to apply a socio-technical perspective to my technical research.