CONL722: Assignment 2 – Report

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# Abstract

Big Data is undeniably influencing how we use, process, store, and exploit opportunities from data, both in the present age, and going forward in future. This report evaluates a hypothetical scenario provided by Vic Grout [1], where a passer-by in future is analysed and reports back to users what results it finds; not only if technology and data is or will be available to conduct, but implications of such coming to fruition. Additionally, literature reviews are conducted on disparate sources to research related information determining such possibilities. Current findings indicate we are in infancy of having the technology and data we need for such events to occur. Additionally, this scenario could impact society, economy, politics, and ethics to name a few. Finally, more work is required to explore this topic in more detail further to uncover other impacts the scenario could have upon a population. However, if data is not governed, accurate and precise, the views of how big data can be used will change dramatically.

**Keywords—Big Data, Technology, Data, Scenario**

# Introduction

This report provides perception and analysis from a scenario presented by Grout [1]. Not only evaluating feasibility of one person assessing another in this way in future but impacts this could have on advancement in life. Firstly, to ascertain if advancing technology and data available could make the situation presented viable. Secondly, the impressions such a hypothetical future a proposed synopsis could entail. Finally, whether this perspective of the future could execute, as well as if it should.

# Technology and data to make this achievable

## Technology

Presently, technologies bring such scenarios into fruition; with adoption in facets of life already. One such instance, Internet of Things (IoT), where connected internet-enabled devices collect and share data [2], such as IoT objects such as smartphones, smartwatches, and fitness sensors [3, p. 309], [4, p. 17], [5, p. 221], [6]. Expanding further, a theory Internet of Everything (IoE) - GeeksforGeeks [7] expresses future technology further enmeshed between people, processes, data, and things. However, IoT is still in infancy, with challenges present, such as interoperability between systems on complex wireless networks alongside increases of devices, and ensuring different manufacturers interact seamlessly as illustrated by multiple sources [8], [9, p. 62], [10], [11, p. 81], [12].

Continuous real-time analytics, known as streaming analytics, another evolving technology that could develop, as users can receive instant notifications when data acquired, and events occur [13],[14],[15],[16]. Using the situation presented by Grout [1], this technology would be feasible alongside IoT devices, such as smart glasses. As mentioned by E.Gupta and E.Al [17] - smart glasses were tested to alert users to anyone within 30cm behind them. Another example stems from google from iterations of the google glass product; whilst at first saw a short public presence at stated by Gvora [18], variations of this product still being used within commercial settings [19]. Although initial resistance, if endorsed in future, this type of device combined with real-time analytics could permit users to view others data instantly, provided it's availability online.

## Data

No matter what technology used, this scenario requires data, a fundamental element both in present day and future. The internet tracks information about individuals, such as IP addresses, sites visited via Cookies, a user’s location, and advertisements clicked [20],[21]. Additionally, data gathered from social media, where personal information, interests and social networks are retrievable freely [22] and sold between companies alike [23]. It Is technically possible to scan data across platforms about a passing person. However, one challenge hindering the effectiveness of such a system eludes the scenario already: data quality. Cai and Zhu [24] – echoed by Almeida and Calistru [25] - mention that diversity of data source increases complexity of integration, volumes too large to judge quality in a timely fashion, and data changes occur rapidly leading to its obsolescence. Considering the above, data captured about a passer-by could be completely inaccurate, or about another person altogether, depending the parameters on how and where data is collected.

# **Impressions from multiple perspectives**

In this scenario, the public could be distrustful, based on how data is used and whether the data is accurate. Berman [26, pp. 419–427] suggests amongst other areas, a view on restriction of freedom; with personal information available for all to see, governments, corporations, and the public alike. Additionally, this could lead to further spreads of misinformation based on sources used to collect data about a person; with folks accepting everything they see as ground truth, which is not only inapt but incorrect throughout its lineage before reaching the consumer, with instances of fake news, post-truths and other fabricated information would be hard determining what material for average individuals should be deemed truthful, particularly where it can be argued things are easier to believe when they share a person beliefs, rather than objective truth.[27, 28,29,30].

Asadi Someh et al [31] implies several ethical concerns could arise through this scenario, such as over-dependence on algorithmic decision-making, profiling of individuals and increased exposure to discrimination - for example judgment placed on a person about the data they have – whether even correct or not – before knowing that person themselves. Similarly, Howe and Elenberg [32] somewhat agree, advising on three principles big data needs to support before some ethical concerns can be quashed: respecting a person’s autonomy by obtaining consent, achieving equity where all populations are represented, and protecting privacy of its users. The elements above need consideration, from businesses using people’s data to exploit opportunities, government ensuring data is used fairly, and for the public to know - with as much transparency as possible - as to how their data is being used.

One element this scenario can affect the future outside of technology could be the economy. Gortz [33] suggests that future technological advances and opportunities announced could impact future growth in Gross Domestic Product (GDP) and the stock market. [34]. However, as Gortz also suggests, this may cause fluctuations in both booms and recessions, depending on how these new technological advancements are viewed by society, which could reflect the stock market itself.

The future opportunities for relevant powers to both exploit the opportunities and manipulate the masses the scenario presents. Illing [35] as well as Lys [36] states that Big data has already changed the way in which campaigns are conducted, allowing campaigner’s to identify most likely voters, targeting them with advertisements and favoured content; this leads to suggest exacerbation could be further ensued when a person can read about content of another, including their political views – which either are assumed about them, or falsely correlated based on other activities.

From a legislative point of view, this scenario is problematic. The most pertinent issue is that regulations like the Data protection Act 2018 governing how organisations and government use personal data [37]. In its current state, the scenario presented by Grout [1] could be blocked or limitations of how data from one person can be shared to another, without their consent or knowledge. For instance, Mortier [38] proposes big data analytics may challenge the principles of "purpose limitation", "data minimisation" and "storage limitation" given that big data applications typically collect from diverse data sources, without careful verification of relevance or accuracy of data thus collected; and relying on consent may prove unpractical in a big data context. However, in some areas of the world – say the United States of America, there no national rules currently regulating Big Data unambiguously, but rather privacy laws complied by companies for data involved in their operations [39].

# Conclusion

While the scenario provided by Grout is of hypothetical nature, it would be naïve assuming it is going to become more of a reality soon. The evidence is clear regarding the role technology and data possible plays to conjure such a scenario, in that it is technically feasible; the more influences and implications this could have however, where it can be envisaged to have an impact on societal views and ethical complications, it remains nuanced in many areas. Additional research should explore these impacts further. Nevertheless, if the main element of this scenario – data – is not governed, accurate and precise, the views of how big data can or will be used will change dramatically.

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