7BDIN006W.1 BIG DATA THEORY AND PRACTICE

Week 2 Seminar Tasks

Features of Big Data. Ethics and Risks in Big Data

This week's seminar aims to facilitate bonding among peers, gauge individual participation in discussions, and understand the dynamics of group collaborations for future coursework.

During the seminar, attendees will be divided into small groups, each consisting of 5-6 members, to engage in group activities.

TASK 1: INTRODUCTION

Each group member is to introduce themselves to their peers. The introduction should ideally last no more than 5 minutes per person. As part of the introduction, participants should discuss:

- Personal background
- Academic and/or professional experience
- Reasons for enrolling in this particular course

This will provide everyone with an opportunity to get acquainted and understand each member's unique perspective and contribution to the course.

TASK 2: THE SERIAL-KILLER DETECTOR USE CASE

"The Serial-Killer Detector" is a New Yorker article that profiles a former journalist, Thomas Hargrove, who developed an algorithm to identify patterns in unsolved murders across the United States. Using the largest collection of murder records in the country, Hargrove's algorithm helps detect potential serial killers by analysing patterns and similarities in different cases. The article explores how this tool can aid law enforcement in solving crimes and highlights some of the challenges and successes encountered by Hargrove.

[The New Yorker: The Serial-Killer Detector]

Critically analyse and discuss the use of Big Data in identifying patterns in crime, using "The Serial-Killer Detector" as a case study.

Discussions Topics:

1. Algorithm Analysis:
   - Discuss how Thomas Hargrove's algorithm functions to identify serial killers. What patterns and data does it analyse?
   - Evaluate the efficiency and accuracy of the algorithm. Are there limitations or potential improvements?

2. Big Data Theory:
   - How does this case study exemplify big data's Volume, Velocity, Variety, Veracity, and Value characteristics?
   - Discuss the role of data mining and pattern recognition in this context. How can these be utilised or improved for criminal detection?

3. Ethical Considerations:
   - Explore the ethical implications of using such an algorithm. How can privacy and individual rights be balanced against public safety?
   - Discuss potential biases in the data set and the implications of these biases on the results. How can these biases be mitigated?

4. Practical Implications:
   - How can law enforcement agencies implement this algorithm effectively? What challenges might they face?
   - Discuss the potential impact of this technology on the criminal justice system. How might it change investigative approaches?

5. Future Prospects:
   - Explore the potential for further development and application of similar algorithms in other areas of crime detection.
   - Discuss the future of big data in crime analysis and prevention. What other innovations might be possible?

TASK 3: CAMBRIDGE ANALYTICA AND FACEBOOK USE CASE

Cambridge Analytica used Facebook user data to build psychological profiles and deliver personalised political ads, without explicit user consent. This case exemplifies several critical issues related to big data ethics, including consent, privacy, and misuse of data for manipulation.

A detailed article from The Guardian titled "The Cambridge Analytica Scandal: Explained" provides a comprehensive overview of this incident. It presents a practical and detailed use case for considering Big Data Ethics Issues. Here's the link to the article:

[The Cambridge Analytica Scandal: Explained]

Discussions Topics:

1. Consent & Transparency:
   - How was consent violated in this case, and how could a higher level of transparency have prevented the unethical use of data?
   - Discuss the measures that companies should implement to ensure informed consent and transparency in data collection and usage.

2. Data Privacy & Security:
   - What were the main data privacy and security concerns in the Cambridge Analytica scandal?
   - How could Facebook have better-protected user data, and what steps should social media platforms take to safeguard user information?

3. Responsibility & Accountability:
   - Who should be held accountable for the unethical use of user data in this case, and why?
   - Discuss the responsibilities of different stakeholders, including data collectors, data brokers, and end-users, in preventing such incidents.

4. Regulation & Policy:
   - What role did existing regulations play in this incident, and were they effective in addressing the ethical issues raised?
   - How can regulations and policies be improved or enforced to protect user data and privacy better?

5. Impact & Consequences:
   - What were the immediate and long-term consequences of the scandal for users, Facebook, Cambridge Analytica, and the wider industry?
   - How can companies and regulators mitigate the negative impacts of such incidents on individuals and society?

6. Future Implications:
   - How has this incident influenced the public's perception of big data and privacy?
   - What lessons can be learned from this case, and how can they be applied to avoid similar ethical issues in the future?