Learning Guide Unit 5

Description

Learning Guide Unit 5

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Overview

UNIT 5: Big data and privacy

Topics

- Big data privacy issues
- Big data security issues
- Threats to data security

Learning Objectives

By the end of this Unit, you will be able to:

1. Identify the issues surrounding privacy and big data
2. Examine the issues and challenges of big data in terms of security
3. Explain the threats to data security

Tasks

- Peer assess Unit 4 Written Assignment
- Read the Learning Guide and Reading Assignments
- Participate in the Discussion Assignment (post, comment, and rate in the Discussion Forum)
- Complete and submit the Written Assignment
- Make entries to the Learning Journal
- Take and submit the Self-Quiz

Introduction

Big data adds complexity when it comes to issues surrounding security and privacy issues. The amount of data captured by itself is of concern to security and privacy experts. This data must be closely monitored and secured to avoid leaks or compromise data structure and contents. For years the information technology field has struggled with setting standards for privacy and data security, and in the big data realm, it is just as important. In this era of internet technology, organizations are capturing data at an alarming rate. With that comes the responsibility to be good stewards of this data, ensuring it is secure and that the information is not compromised in any way, ensuring privacy.

At times organizations struggle with compromises between data quality and data security. Having quality data is extremely important for businesses today, it helps ensure they are addressing customer needs and wants adequately, but it can't come between the need for ensuring data privacy is intact. Remembering that data privacy is a part of the CIA triad, which defines conditions for data confidentiality, integrity, and availability is especially important for big data simply due to the volumes of data being captured.

Treats to an organization's data are always at the forefront of the data security policies and safeguards, and that is no different with organizations that collect and disseminate big data. These organizations face the same threats as others, and they may be exponentially greater given the sheer amount of data, much sensitive, that is collected and stored. With this in mind, these organizations must take extra steps to ensure the security of this big data repository in ways they may not use for their normal data collection efforts.

In this unit, we will learn about big data privacy issues and how they can affect organizations, as well as threats to big data security that organizations must work to defend against and mitigate. We will also touch on threats to data security for organizations that collect, analyze, and process big data.

Reference

Barbhuiya, T. (2021). [Image]. Unsplash. https://unsplash.com/photos/FnA5pAzqhMM

Reading Assignment

Gupta, N. K. (2018). Addressing big data security issues and challenges. *International Journal of Computer Engineering & Technology, 9*(4), 229-237. https://iaeme.com/MasterAdmin/Journal_uploads/IJCET/VOLUME_9_ISSUE_4/IJCET_09_04_025.pdf

- This article addresses some of the challenges around big data security, and the challenges faced.

Hoeren, T.,& Kolany-Raiser, B. (2017). The Importance of Big Data for Jurisprudence and Legal Practice. In Dopke, C (Ed.), *Big data in context: Legal, social and technological insights.* (pp 13-19). SpringerOpen. https://link.springer.com/content/pdf/10.1007/978-3-319-62461-7.pdf

- Read from Pages 13-19: The Importance of Big Data for Jurisprudence and Legal Practice.

Huang, K. (2021). Big data security and privacy protection. In *International Journal of Higher Education Teaching Theory* 1(2), pp 200-203. Http://www.acadpubl.com/Papers/Vol%202,%20No%201%20(IJHETT%202021).pdf#page=208

- Read Big Data Security and Privacy Protection from pages 200 through 203. This article discusses some security and privacy protection afforded to big data.

Koo, J., Kang, G., & Kim, Y.G. (2020). Security and privacy in big data life cycle: A survey and open challenges. *Sustainability*, *12*(24), 10571. https://doi.org/10.3390/su122410571

- This article discusses the issues around the security and privacy of big data and presents a survey of open challenges.

Mills, K. A. (2019). *Big data for qualitative research.* Routledge focus. https://doi.org/10.4324/9780429056413

- Read Chapter 5 - Big data ethics, privacy, and dataveillance. This chapter discusses issues surrounding big data privacy, evaluates the idea of ethics with data and shows how the process that monitors and collects data (and metadata) through social networks and various other online platforms works.

Sriram, G. K. (2022). Security challenges of big data computing. *International Research Journal of Modernization in Engineering Technology and Science*, *4*(1), 1164-1171. https://www.irjmets.com/uploadedfiles/paper/issue_1_january_2022/18527/final/fin_irjmets1643004117.pdf

- This article provides a comprehensive discussion of the security challenges of big data computing.

Talha, M., El Kalam, A. A., & Elmarzouqi, N. (2019). Big data: Trade-off between data quality and data security. *Sciencedirect,151,* 916-922. https://doi.org/10.1016/j.procs.2019.04.127, licensed under CC BY-NC-ND 4.0

- This article shows the trade-off between choosing data quality over data security.

Zhang, D. (2018). Big data security and privacy protection. *Proceedings of the 8th international conference on management and computer science (ICMCS 2018),77*, 275-278. https://www.atlantis-press.com/article/25904185.pdf, licensed under CC BY-NC 4.0

- These articles discuss some of the challenges in big data security and privacy, as well as threats to big data security.

Video Resource:

Serious data solutions. (2020, March 5). *Data security vs. Data privacy* [Video].   YouTube. https://www.youtube.com/watch?v=rxF99MPnIyk

- This video discusses the differences between data security and data privacy.

Discussion Assignment

Different fields have different security requirements around big data capture and use. Identify one of the four areas noted in the article by Gupta (2018) and discuss the issues faced by that industry, and compare those issues to one of the other industries noted in the article. Eg. If you are choosing the medical industry, then you can compare its issue with either the Internet, telecommunication, or E-commerce industry.

Your Discussion should be a minimum of 200 words in length and not more than 300 words. Please include a word count. Following the APA standard, use references and in-text citations for the textbook and any other sources.

Use APA citations and references for the textbook and any other sources used; you should use at least 1 APA citation and reference, but you can use more if needed. Refer to the UoPeople APA Tutorials in the LRC for help with APA citations. You are required to post an initial response to the question/issue presented in the Forum and then respond to at least 3 of your classmates' initial posts. You should also respond to anyone who has responded to you. Don't forget to rate the postings of your classmates according to the Rating Guidelines. Review the Discussion Forum rating guidelines to see how your classmates will be rating your post.

 After posting an appropriate, meaningful, and helpful response to your three classmates, you must rate their posts on a scale of 0 (unsatisfactory) to 10 (excellent).

10 (A) - Excellent, substantial, relevant, insightful, enriching, and stimulating contribution to the discussion. Also, uses external resources to support the position where required and/or applicable.
8 - 9 (B) - Good, quite substantial, and insightful, but missing minor details which would have otherwise characterized it as an excellent response.
6 - 7 (C) - Satisfactory insight and relevance, but required some more information and effort to have warranted a better rating.
4 - 5 (D) - Limited insight and relevance of the material; more effort and reflection needed to have warranted a satisfactory grading.
0 - 3 (F) - Unsatisfactory insight/relevance or failure to answer the question, reflecting a poor or limited understanding of the subject matter and/or the guidelines of the question.

The rating scores are anonymous; therefore, do NOT mention in your remarks the separate rating score you will give the peer. The instructor is the only person who knows which score matches the comment given to a peer. Some classmates may worry that some peers will not provide a fair rating, or be unable to provide accurate corrections for grammar or other errors. It is the instructor's responsibility to ensure fairness and accuracy.

Reference

Gupta, N. K. (2018). Addressing big data security issues and challenges. *International Journal of Computer Engineering & Technology, 9*(4), 229-237. https://iaeme.com/MasterAdmin/Journal_uploads/IJCET/VOLUME_9_ISSUE_4/IJCET_09_04_025.pdf

Written Assignment

For this week's written assignment, answer the following questions:

- Explain the three main threats to big data security for organizations.
- Identify and explain three steps organizations need to take to ensure they address these threats with appropriate plans to mitigate in case of a breach.

You will be assessed based on:

- Explanation of three main threats to big data security
- Identification of steps organizations needs to ensure they address these threats with appropriate plans to mitigate in case of a breach.
- Organization and style (including APA formatting)

Submit a paper that is at least 2 pages in length exclusive of the reference page, double-spaced using 12-point Times New Roman font. The paper must cite a minimum of two sources in APA format and be well-written. Check all content for grammar, and spelling and be sure you have correctly cited all resources (in APA format) used. Refer to the UoPeople APA Tutorials in the LRC for help with APA citations.

Learning Journal

Big data security encompasses many different items that can effectively make big data vulnerable, and if not properly structured can allow threat actors to gain access to this data, which at times can contain very private customer/client information.

- Identify at least two areas affecting big data security and provide a description of those threats. Compare the two areas and provide details on how they affect organizations.

 The Learning Journal entry should be a minimum of 400 words and not more than 750 words. Use APA citations and references if you use ideas from the readings or other sources.

The rubric detailing how you will be graded for this assignment can be found within the unit's assignment on the main course page.

Self-Quiz

The Self-Quiz gives you an opportunity to self-assess your knowledge of what you have learned so far.

The results of the Self-Quiz do not count towards your final grade. However,the quiz is an important part of the University's learning process and it is expected that you will take it to ensure understanding of the materials presented. Reviewing and analyzing your results will help you perform better on future Graded Quizzes and the Final Exam.

Please access the Self-Quiz on the main course homepage; it is listed inside the Unit.

Checklist

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