

Annotated bibliography assignment

1. Hariri, R. H., Fredericks, E. M., & Bowers, K. M. (2019). Uncertainty in big data analytics: survey, opportunities, and challenges. *Journal of Big Data*, 6(1), 1-16.

In their article Hariri et al. discusses the issue of uncertainty in big data analytics. The authors provide a comprehensive survey of the literature on uncertainty in big data analytics, highlighting the various sources of uncertainty, such as data quality, model accuracy, and algorithmic bias. The article discusses the challenges associated with uncertainty, including the difficulty in identifying and quantifying uncertainty and the impact of uncertainty on decision-making. The authors also discuss the opportunities provided by uncertainty, such as the ability to identify new insights and patterns in data and the potential for improved decision-making through the use of uncertainty-aware models. The article concludes by discussing the future research directions in uncertainty in big data analytics, highlighting the need for new techniques and methods to address uncertainty. This article provides a valuable resource for researchers and practitioners interested in the issue of uncertainty in big data analytics, highlighting the challenges and opportunities associated with this issue and providing guidance for future research.

2. Lähnemann, D., Köster, J., Szczurek, E., McCarthy, D. J., Hicks, S. C., Robinson, M. D., ... & Schönhuth, A. (2020). Eleven grand challenges in single-cell data science. *Genome biology*, 21(1), 1-35.

The article by Lähnemann et al. presents an overview of the challenges and opportunities associated with analyzing single-cell data. The authors highlight the unique features of single-cell data, such as the sparsity and heterogeneity of the data, and the need for new computational methods to analyze this data. The statement discusses eleven grand challenges in single-cell data science, including the need for improved data quality control, the development of new methods for data integration, and the identification of rare cell types. The importance of reproducibility and the need for standardized benchmarking datasets and evaluation metrics is discussed by the authors. The article concludes by highlighting the potential impact of single-cell data science in various fields, including developmental biology, cancer research, and immunology. It provides a valuable resource for researchers interested in the challenges and opportunities associated with single-cell data analysis and highlights the need for new computational methods and approaches to address these challenges.

3. Mikalef, P., Boura, M., Lekakos, G., & Krogstie, J. (2019). Big data analytics and firm performance: Findings from a mixed-method approach. *Journal of Business Research*, 98, 261-276.

Mikalef, Boura, Lekakos, and Krogstie's (2019) article examines the relationship between big data analytics (BDA) and firm performance. The authors use a mixed-method approach, combining quantitative and qualitative data from surveys and interviews of 211 Greek firms. The article contributes to the literature on BDA by highlighting the importance of the right BDA strategy, which should be aligned with

the firm's goals and objectives. The authors found that firms that have a well-defined BDA strategy tend to perform better than those that do not. The study also revealed that BDA helps firms improve their decision-making processes, innovate, and create new products and services. The authors also address the challenges that firms face in implementing BDA, such as data quality, security, and privacy concerns. The article provides insights on how firms can overcome these challenges by investing in technology infrastructure and employee training. Overall, the article provides valuable insights for managers and practitioners who are interested in implementing BDA in their organizations. The mixed-method approach used in the study adds depth and richness to the findings, making it a significant contribution to the literature on BDA and firm performance.