



*This article is a partial summary of sources on data science and analytics. This is written to highlight some of the key challenges and risks associated with ethics in analytics. Interested readers are suggested to refer to references and further readings therein, for a broader discussion and for insights.*

**Summarised by David Hawe PhD on behalf of the Examinations Team for Strategic Level – Data Analytics for Finance, March 2023.**

## **Ethics in the Practice of Data Analytics**

### **Introduction**

With the arrival of the European Union’s General Data Protection Regulation (EU GDPR) [1], much of the discussion around ethics has focused on data protection. This regulation provides clear instructions in terms of protecting individuals when their data are processed and limiting the free movement of these data. This article will touch briefly on several topics that have been of general interest in recent years. For a more in-depth treatment, the reader is referred to literature.

### **Digital Age of Consent**

In terms of what is considered ethical, the EU GDPR defines what is needed in terms of consent from a data subject, as well as requirements when it comes to attaining consent to process the data of children. The regulation defines sixteen as the age that a data subject can consent to their data being processed. This is noteworthy as previously, there were discussions in Ireland regarding the “Digital Age of Consent”, with proposals to have this set as low as 13 years of age [2]. The differences in views around where the digital age of consent should lie is one key example which shows that ethics are, to some degree, dynamic. In terms of ensuring that an analysis is compliant with modern ethics, there are sources of guidance available in literature [1,2,3,4,5].

### **Discrimination – Gender and Race**

In an Irish context, there has been much debate around both insurance and pensions, particularly how companies in the industry had been using gender as a basis for determining premia for customers. This has since been forbidden by the European Union [6]. Prior to this, insurers argued that there was actuarial evidence to justify men paying a higher premium for their car insurance, due to a higher likelihood of claiming or women paying more when buying pension annuities, due to their average lifespan being longer. However, many would argue that discrimination such as this was unacceptable. It is noteworthy that this change came about just ten years ago. Discussions such as this one could have readers wondering if there are scenarios where discrimination based on gender remains today.

An article published this month by the Wall Street Journal [7] discusses outcomes based on different treatment protocols for prostate cancer. One line in the article that may catch a reader’s attention states, “It is the second-most-common cancer among men in the country after skin cancer and disproportionately affects Black men.” Here, an analysis has been conducted around the likelihood of different groups in acquiring this disease. The conclusion is that there is a higher probability of acquiring this disease if you are black and male. This is in a sense highlighting differences between

groups based on race. It does however potentially help clinicians in diagnosis and treatment and is therefore considered appropriate. There are alternative views on this topic. In a recent article, Dordunno *et al.* [8] argue that race should not be used in this context, arguing that confounding variables are the main driver of the disparities with race.

This author suspects that there will be much discussion on this topic in the coming decade and would expect that this is a question that will be answered after much scientific discussion. Social scientists, who in some cases argue deprivation in minority communities is the driver in the differences in outcomes will feed into these discussions [9]. It is worth noting that the use of race in analysis, is limited, as it is considered a special category of data in the EU GDPR. Care should be taken to ensure that if race is to be considered, it is done in line with both what is considered ethical and that which is legally permitted.

## Discussion

While this article has reviewed several sources in literature, it is worth noting that what is considered acceptable at one point in time can change dramatically in a short window. Anyone who has a hand in analysing data, reviewing data analysis, conducting surveys, or working in any area that is in some way related to data analytics is strongly encouraged to keep up to date with the ethics of the day. Articles from professional bodies such as the Royal Statistical Society and Institute and Faculty of Actuaries [10] and American Statistical Association [11] would be good references in this regard, as these organisations by their nature will be expected to keep their ethical standards in the practice of analytics up to date. Readers are also encouraged to avoid absolutes when it comes to the topic of ethics. Many would argue the use of race in analytics is not appropriate, however as is seen in some of the material reviewed in the previous section, this is widely used for example in healthcare and generally this is seen as ethical, as it has the potential to have a positive impact on subjects' outcomes.

## References:

- [1] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).
- [2] Data Protection Commissioner, Public consultation on the processing of children's personal data and the rights of children as data subjects under the General Data Protection Regulation 2019. ([https://www.dataprotection.ie/sites/default/files/uploads/2018-12/DPC\\_ChildrensRights\\_2019\\_English.pdf](https://www.dataprotection.ie/sites/default/files/uploads/2018-12/DPC_ChildrensRights_2019_English.pdf)), Accessed 12 March 2023.
- [3] L. Pasquale, P. Zippo C. Curley et al., Digital Age of Consent and Age Verification: Can They Protect Children?, TU Dublin School of Media Articles. (<https://arrow.tudublin.ie/cgi/viewcontent.cgi?article=1104&context=aaschmedart>) Accessed 10 March 2023.
- [4] J Thompson Ethics in The Digital Age: Protect Others' Data as You Would Your Own Available at: (<https://www.forbes.com/sites/jeffthomson/2019/07/01/ethics-in-the-digital-age-protect-others-data-as-you-would-your-own/?sh=3c42b1b54e14>), Accessed 1 August 2021.
- [5] G. Buttarelli, Debating Ethics in the digital age, Available at ([https://edps.europa.eu/press-publications/press-news/blog/debating-ethics-digital-age\\_en](https://edps.europa.eu/press-publications/press-news/blog/debating-ethics-digital-age_en)) Accessed 10 Mar 2023.
- [6] EU rules on gender-neutral pricing in insurance industry enter into force, Press Release, 2012, Available at ([https://ec.europa.eu/commission/presscorner/detail/en/IP\\_12\\_1430](https://ec.europa.eu/commission/presscorner/detail/en/IP_12_1430)), Accessed 10 Jan 2023.

- [7] A. Perez-Castelles, Men With Prostate Cancer Can Thrive for Years With Less Aggressive Treatment, Wall Street Journal Available at (<https://www.wsj.com/articles/prostate-cancer-men-aggressive-treatment-2be2a9e9?mod=mhp>) Accessed 12 March 2023.
- [8] D. Dordunoo, P. Abernethy, J. Kayuni, S. McConkey, M.L. Aviles-G., Dismantling “Race” in Health Research. Canadian Journal of Nursing Research. 2022;54(3):239-245. doi:10.1177/08445621221074849.
- [9] L.E. Egede, Race, ethnicity, culture, and disparities in health care. J Gen Intern Med. 2006 Jun;21(6):667-9. doi: 10.1111/j.1525-1497.2006.0512.x. PMID: 16808759; PMCID: PMC1924616.
- [10] Institute and Faculty of Actuaries and the Royal Statistical Society, A guide for ethical data science, Available at (<https://rss.org.uk/RSS/media/News-and-publications/Publications/Reports%20and%20guides/A-Guide-for-Ethical-Data-Science-Final-Oct-2019.pdf>), Accessed 12 March 2023.
- [11] American Statistical Association Ethical Guidelines for Statistical Practice, Prepared by the Committee on Professional Ethics of the American Statistical Association Approved by the ASA Board in February 2022 Available at ([https://www.amstat.org/docs/default-source/amstat-documents/ethicalguidelines.pdf?Status=Master&sfvrsn=bdeefdd\\_6/](https://www.amstat.org/docs/default-source/amstat-documents/ethicalguidelines.pdf?Status=Master&sfvrsn=bdeefdd_6/)), Accessed 12 March 2023.