

# Risks Posed by Wearables to Data Protection in Sports Science as Identified by User Studies

A Systematic Literature Review

Dr. Juraj Sikra

**RQ** “What are the risks posed by wearables to data protection in sports science as identified by user studies?”

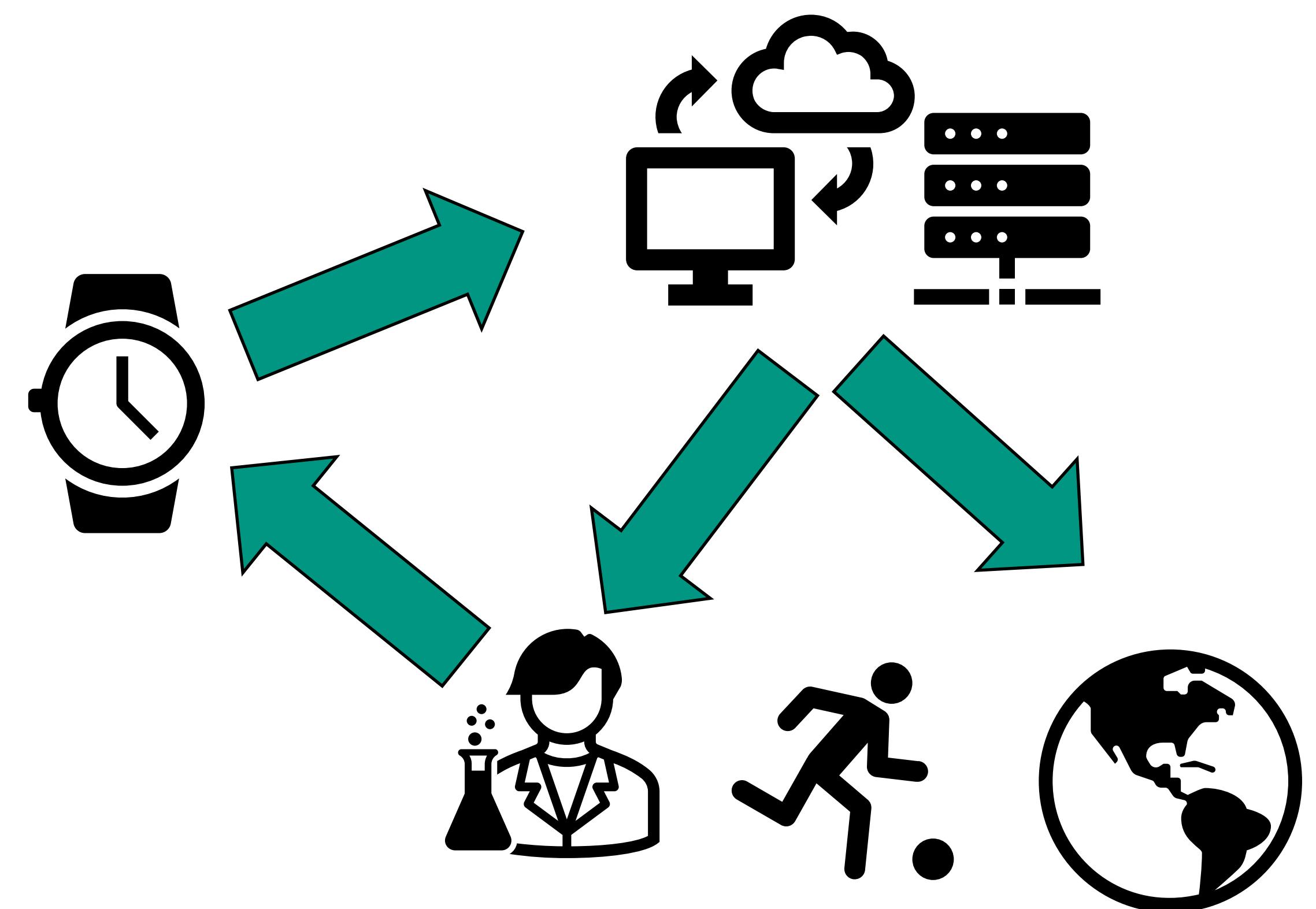
**Methods** Databases of Google Scholar ( $n=387$ ), ProQuest ( $n=87$ ), ACM-DL ( $n=74$ ) were searched according to the approach of Pickering et al. [4].

**The search query** “risks” AND “wearable” AND “data protection” AND “sports science” was used.

**Results** 13 user studies that identified **10 different risks**.

## The 10 Data Protection Risks Posed By Wearables

1. The risk of data being stored commercially outside of the country [3].
2. The risk of data ownership uncertainty [7].
3. The risk of “*being constantly watched* [8].”
4. The risk of third-party sharing [9].
5. The risk of loss of control over personal data [10].
6. The risk of data being accessed by insurers (who could deny claims) [11].
7. The risk of lack of awareness of relevant laws [12].
8. The risk of data collection with Apple devices that “*call home* [13,14].”
9. The risk of data storage on Google platforms [15-17].
10. The risk of complicated procedures obstructing informed consent [18].



*Figure 1. Sports scientists use wearables to analyse and improve performance. Wearables (e.g., smart watches) send data to be analysed via an extensive network of cloud-based servers. Some of the data returns to researchers as measured performance. However, the data also continues to be monetised by the wearables’ manufacturers and sold around the world as analytics to different stakeholders. Therefore, it is important to raise awareness of data protection risks posed by wearables during sports science research.*

**Discussion and Conclusion** Sports science research gives rise to various data protection risks that stem from the unregulated wearables’ market environment (see: *Figure 1.*). Privacy protection specialists and sports scientists should collaborate to reduce the data protection risks that arise as a part of research. The prioritization should be on raising awareness of data protection risks to vulnerable populations during sports science research with wearables.

## Reference

Sikra, J. (2025). Risks Posed by Wearables to Data Protection in Sports Science as Identified by User studies. *DiTraRe Symposium 2025*. Available at: [https://www.ditrare.de/sites/default/files/2025-11/17\\_camera-ready.pdf](https://www.ditrare.de/sites/default/files/2025-11/17_camera-ready.pdf)

**juraj.sikra@kit.edu**