Protective research: Implementation of FAIR and GDPR

Abstract

Aligning the storage of healthcare databases with the FAIR principles expedites data sharing and scientific research. However, it raises significant concerns associated with the potential disclosure of sensitive information. This paper addresses the challenges in healthcare databases' compliance with the General Data Protection Regulation (GDPR) and its GDPR compliance solution that can be implemented without the requirement of having systematic knowledge of data protection regulations. We propose a robust GDPR-compliant privacy pipeline, based on the text in Recital 26 of GDPR and Article 29 Working Party's Opinion 05/2014 on Anonymisation Techniques (WP216). With the incorporation of privacy-preserving techniques and mechanisms, this pipeline enables the evaluation of GDPR compliance levels for databases through a P29 Score. This score is evaluated for its robustness in mitigating privacy risks in an open-source medical database. We show that the implementation of this metric effectively mitigates the three primary privacy risks articulated in WP216 while preserving data utility through moderate parameter selection. Importantly, with a novice-friendly web interface, it further facilitates the realisation of GDPR-required data privacy levels by diverse users without any legal expertise.

Description and purpose of the project : You will be working on a pipeline that other students have worked on. This pipeline already has metrics to cover the implementation of different datasets and make them FAIR and GDPR compliant for research. An UI/UX protocol was also already implemented and would be interesting if you could create something new for this. Your purpose in this is to come up with optimization protocols for the metrics put in place but also implement/create a new backend for this tool which will be useful for research.

Expectations: Law and website development knowledge is not a prerequisite, but you will learn the meaning behind the laws and understand what this translates to for research. All our students usually end with at least one publication of their work in a peer-reviewed journal or conference. You are expected to be able to explain your results/methods in Layman speech (able to explain to a kid in normal everyday words).