Designing for Friction: Using Strategic/Desirable Inefficiencies to Address the Emerging Privacy Challenges of AI

Abstract

This abstract provides a high-level overview of a research paper which is currently being finalized by the authors. The paper aims to explore the concept of 'Desirable Inefficiency' in privacy engineering, highlighting its significance and limitations in product design, particularly in designing and developing AI and machine learning applications. The paper will focus on the analysis of existing privacy features, such as cookie consent interfaces, and will provide recommendations for implementing desirable inefficiency without hindering usability. Furthermore, it will examine use-cases in data analytics and assess the legislative landscape in Europe and the US, proposing potential changes to promote adoption of desirable inefficiencies in critical digital workflows.

Embracing Desirable Inefficiency for Enhanced Privacy in AI and Machine Learning Applications

Well-designed interfaces should help users understand the upstream and downstream implications of their actions. For a long time, the focus of customer-facing platforms was almost exclusively centered around feature development that would increase user adoption and few paid attention to the exponential amount of personal data that was being collected and processed as a result thereof. This focus historically granted software companies considerable leniency, and led to products being designed in ways that obscured the consequences of user actions[1]. These dark patterns have allowed companies to increase their collection of personal data and to leverage that asset to profit at the cost of transparency to end-users.

In response to the growing awareness surrounding data governance, notable progress on implementing privacy protecting workflows has been made across the industry with some corporations taking a proactive approach by embedding corporate privacy management practices. These changes have also occurred in jurisdictions with limited legislation or regulation on the matter and have led organizations to pursue meaningful reform through voluntary establishment of privacy frameworks.

The field of privacy engineering as a dedicated function within privacy-friendly product development has resulted in a multitude of innovative approaches, including 'nudging' users to make better-informed decisions. One such engineering practice has been coined as 'Desirable Inefficiency'[2],, and the research paper will argue that while inefficiency is seemingly counterproductive, embedding such features into product designs (of consumer and enterprise software), especially those which leverage Artificial Intelligence and Machine Learning, can enhance privacy while achieving business goals more accurately. This is particularly relevant, in the light of the increased interest in the use of such technical capabilities in decision-making workflows. These workflows, which are sought after by private and public organizations alike, will further expand the need for privacy-protecting product design as well as data usage transparency in developing and deploying Machine Learning models. In addition, it remains critical that product design be paired with legal guidelines in order to increase the effectiveness of technical solutions and ensure a more homogenous approach across industry verticals with the aim of creating a positive impact for data subjects and businesses alike.

The research paper will be divided into the following sections: It will first analyze existing product features that were originally designed to increase data privacy for individuals. More specifically, it will look at examples of desirable inefficiency such as cookie consent interfaces, how these have helped but have also fallen short of fulfilling their promised results. It will subsequently take a closer look at products and features which leverage machine learning and highlight why desirable inefficiency will be paramount to incorporate in product design cycles. Furthermore, recommendations will be provided on how to implement desirable inefficiency to ensure success whilst not hampering critical adoption of such software products. To provide more concrete examples, the research paper will rely on use-cases in the data analytics software development space. It will examine desirable inefficiency as it pertains to machine learning model integrations, and their configuration in operational workflows across sectors, such as healthcare. Finally, it will assess the current legislative landscape in Europe and the U.S and propose potential legislative changes that would streamline trustworthy product development by promoting the adoption of desirable inefficiencies, especially on critical and sensitive digital workflows.

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[1] Waldman, Ari Ezra, Cognitive Biases, Dark Patterns, and the 'Privacy Paradox' (September 18, 2019). 31 Current Issues in Psychology 2020, Available at SSRN: https://ssrn.com/abstract=3456155

[2] Paul Ohm and Jonathan Frankle, *Desirable Inefficiency*, 70 FLA. L. REV. 777 (2018).
Available at: https://scholarship.law.ufl.edu/flr/vol70/iss4/2