Prof. Dr. Jan Krämer

**Lehrstuhl für Wirtschaftsinformatik
mit Schwerpunkt Internet- und
Telekommunikationswirtschaft**

UNIVERSITÄT PASSAU

Wirtschaftswissenschaftliche Fakultät

Easing the Tension Between Data Use and Data Protection: A Review of Methods for Privacy-Preserving Data Analysis [Working Title]

Supervisor: Nikolai Sachs <nikolai.sachs@uni-passau.de>
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Type: Bachelor's Thesis, Master's Thesis
Language: German or English

Motivation:

Tech giants like Google and Facebook, but also comparably smaller firms like Spotify, collect extensive amounts of user data. This data is vital for generating revenue and providing consumers services, such as automatic photo tagging or personalized playlists. On the one hand, consumers benefit from these highly individualized services, which are often provided for free, subsidized by targeted ads. However, on the other hand, these fine granular data sets can reveal very sensitive information about individuals, such as frequently visited locations, personal tastes, or even health-related behavior. Consequently, consumers are becoming increasingly concerned about firms' collection of their personal data.

In order to ease the tension between the benefits of data collection and users' unease with it, numerous methods have been developed that promise the possibility to analyze data while reducing the necessary infringement of individuals' privacy. However, these methods also have inherent trade-offs and might sometimes only be imperfect alternatives.

Goal:

This thesis should first characterize the tension between the usage of personal data and the protection thereof based on the existing scientific literature. It should then give an overview of how firms can use customer data without infringing their privacy. A set of technical methods that have been developed for this purpose should be selected and discussed in detail. The different methods should be categorized along technical and economic dimensions, and their potential trade-offs should be discussed in order to derive recommendations on their use. Finally, it should be analyzed to what extent the currently existing methods can solve the initially described tension.

References and Related Literature:

Schneider, M. J., Jagpal, S., Gupta, S., Li, S., & Yu, Y. (2017). Protecting customer privacy when marketing with second-party data. *International Journal of Research in Marketing*, *34*(3), 593-603.

Wieringa, J., Kannan, P. K., Ma, X., Reutterer, T., Risselada, H., & Skiera, B. (2021). Data analytics in a privacy-concerned world. *Journal of Business Research*, *122*, 915-925.