

Invitation

You are cordially invited to the public defence to obtain the academic degree of

DOCTOR OF BUSINESS ECONOMICS

by Georgios Georgiadis

GDPR COMPLIANCE IN BIG DATA ANALYTICS: A HOLISTIC APPROACH FOR DATA PROTECTION IMPACT ASSESSMENT

Supervisors:

Prof. dr. Geert Poels

Prof. dr. Frederik Gailly

Thursday, 13 June 2024 at 16h00

In the Faculty Board Room, Campus Tweekerken, Tweekerkenstraat 2, 9000 Ghent

Please confirm your attendance no later than **Friday 07 June 2024** by email to

georgios.georgiadis@ugent.be

EXAMINATION BOARD

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Abstract

This dissertation presents a groundbreaking investigation into the alignment of big data analytics (BDA) with the General Data Protection Regulation (GDPR) within the complex landscape of modern data processing and strict data protection laws. At its essence, this research addresses the challenge organisations face in harmonising the capabilities and unique opportunities offered by BDA with the need to safeguard individuals' freedoms and rights, especially under the stringent directives of the GDPR. The dissertation undertakes this exploration through a meticulous methodological framework that incorporates a systematic mapping review (SMR), a systematic literature review (SLR), a Delphi study, and semi-structured interviews with experts across relevant fields. The objective is to uncover the diverse challenges, assess existing frameworks, and ultimately propose a comprehensive data protection impact assessment (DPIA) modelled on the EU's DPIA, aligning the innovative potential of BDA with GDPR compliance requirements. Central to the dissertation is the emphasis on the strategic importance of enterprise architecture management (EAM) as a critical mechanism for ensuring GDPR compliance within BDA contexts. The research explains how EAM can serve as a key bridge, aligning the technical capabilities of BDA with the legal requirements of GDPR, thereby facilitating a harmonious balance between advanced analytical capabilities and strict data privacy and protection standards. Through this scholarly effort, the identification of nine privacy touch points (PTPs) specific to BDA provides a detailed understanding of the privacy and data protection risks inherent in BDA processes. The dissertation concludes by proposing practical enhancements to the DPIA framework, customised to address the specific challenges of BDA, thus improving the significance and efficiency of data processing activities within the GDPR framework. This comprehensive study not only addresses a significant gap in existing literature by offering an empirically grounded framework for GDPR compliance in the field of BDA but also stands as a testament to the dynamic interplay between data analytics and data protection regulations. It provides invaluable insights and practical strategies for practitioners and policymakers alike, guiding them through the complexities of GDPR compliance within the constantly evolving technological landscape of artificial intelligence (AI) and BDA.

Curriculum vitae

Georgios Georgiadis, a native of Piraeus, Greece, is a distinguished academic and accomplished professional with over two decades of experience in European institutions. He holds a Bachelor of Science degree in Computer Science and Information Management from the University of London, UK, and has consistently demonstrated a commitment to lifelong learning and academic excellence. Georgios's outstanding academic achievements include a Master of Science degree in Management from Vrije Universiteit Brussel (VUB), Belgium, and a Postgraduate degree in Big Data Analytics from KU Leuven, Belgium. He is currently pursuing another master's degree in Cybersecurity at the University of Skövde, Sweden, further solidifying his expertise in this critical field. Georgios has made significant contributions to the academic community, presenting his research insights on data analytics, governance, and data protection compliance at renowned conferences such as the 8th IEEE International Conference on Big Data Computing Service and Machine Learning Applications in San Francisco (2022), the Privacy Symposium in Venice (2023), and the 9th Annual Meeting of SIG Big Data Applications at ICIS2023 in Hyderabad (2024). His work has also been published in prestigious journals, namely *Information Systems and e-Business Management* (Springer) and *Computer Law and Security Review* (Elsevier). Currently, Georgios serves as the Head of the Information Unit for the Directorate for Communication of the European Parliament. His extensive career in national and European bodies reflects his dedication to fostering an informed and connected European community. In addition to his professional and academic accomplishments, Georgios is a passionate mentor to emerging professionals and data scientists. He is deeply committed to advancing data protection and security practices through the application of his extensive knowledge and experience in information management and governance.