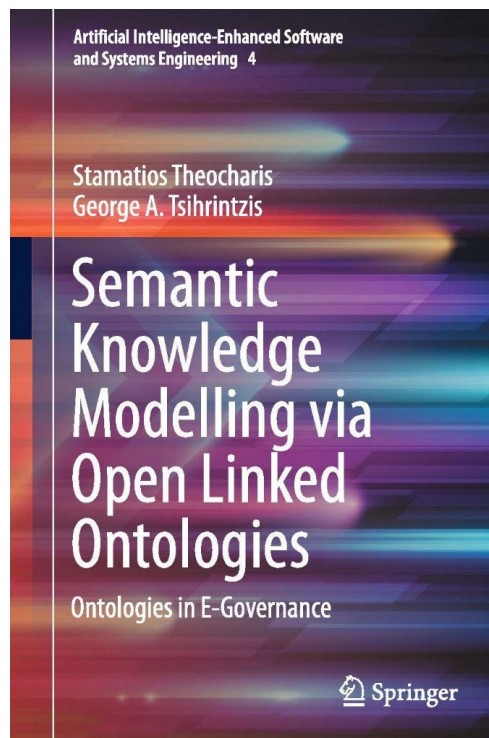# Book Review

Semantic Knowledge Modelling via Open Linked Ontologies – Ontologies in E-Governance
Authors: Theocharis, Stamatios; Tsihrintzis, George A.; Springer 2023, pp. 372, ISBN 978-3-031-20584-2
Vol. 4 in Springer Book Series entitled ***Artificial Intelligence-Enhanced Software and Systems Engineering*** (https://www.springer.com/series/16891)

Dr. Stamatios Theocharis and Prof. George A. Tsihrintzis's monograph is an excellent contribution to the field of e-government. It addresses the challenges faced by governments across the globe in implementing administrative reforms to improve the efficiency of their public sectors, especially in the wake of various crises that have severely tested social cohesion. The authors' novel approaches to modeling and managing vast amounts of administrative data and procedures within public sector bodies, which combine the semantic web and linked open data, are significant contributions to the field. The authors' analysis of both the technical novelties developed and evaluated and the public sector expertise makes the manuscript an essential read for anyone interested in explainable AI-empowered software methods for e-government. Additionally, the real data from the Greek case serves as a model for similar challenges in many other countries.

Indeed, in the past two decades, the world has undergone a series of crises, including economic and financial turmoil, a global health pandemic, and an ongoing energy crisis. The occurrence of such crises has placed a strain on social structures and resources that are collectively shared, leading societies to difficult situations. As a result, governments worldwide have been challenged to implement administrative

reforms to enhance the efficiency of their public sectors. To address this, many governments have turned to Information and Communication Technologies (ICTs) to streamline and modernize their operations.

The Greek government, in particular, faced significant pressure to adopt ICTs and catch up with other Western countries' technology standards, as its public sector had comparatively lower technology infusion. In recent years, the need for administrative reforms and increased efficiency in public sectors has become even more critical due to the various crises, leading Greece to take drastic measures to reduce public spending while simultaneously implementing innovative approaches to modernize its public sector.

The initial steps taken to modernize computer infrastructure and information systems have paved the way for rapid advancements in **Artificial Intelligence-empowered Software,** which offers significant potential for **e-government** to promote collaboration, exchange best practices, and disseminate administrative knowledge at national and international levels.

The book contains eight chapters that are well-written and provide relevant bibliographic references for further exploration. In addition, the appendices offer sections of configuration files of the applications developed and used, making this book an excellent resource for professors, researchers, scientists, engineers, and students in the field of e-government, artificial intelligence, and other computer science-related disciplines. What makes this book unique is that it highlights new methods for managing and modeling administrative data and procedures in the public sector. Specifically, the authors combine two cutting-edge technologies, the semantic web and linked open data, to achieve more efficient and effective e-government systems. The semantic web is an extension of the World Wide Web that allows data to be shared and reused across multiple applications, platforms, and websites and linked open data is a set of principles for publishing and interlinking data on the web so that it can be easily discovered, accessed, and integrated.

This is a novel approach to e-government that has not been extensively explored in previous research, making the book contributions significant for those interested in the field. The use of these technologies enables the efficient and effective management of administrative data, improving the transparency and accountability of public sector bodies. The authors' work is especially relevant in the aftermath of crises, that challenge the stability of societies and present an opportunity for governments to modernize and optimize their operations, while also achieving cost savings. Moreover, by combining artificial intelligence and explainable AI-empowered software methods, the authors provide a new way of approaching e-government that can serve as a model for similar challenges in other countries. In general, their work is an important contribution to the field of e-government and has the potential to benefit governments worldwide.

As the Editor of the *Artificial Intelligence-Enhanced Software and Systems Engineering* series of Springer, I believe that this monograph is an excellent contribution to research communities worldwide, but even non-specialist readers from other disciplines who are interested in the recent developments in e-government are expected to benefit from this book. I congratulate the authors for their superb work and encourage them to extend this research further and update the research communities with their further research results.

April 2023

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