Case Studies of Artificial Intelligence, Business Intelligence, Data Analytics Technologies for Industry Platforms

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The purpose of this mini track is to introduce case studies of applications of artificial intelligence (AI), business intelligence (BI), and data analytics (DA) technologies across industries and societies. What are the real-life examples/use cases that inform our understanding of how AI/BI/DA are currently being used to improve processes and outcomes?

AI/BI/DA technologies have continued to make substantial inroads across industries influencing digital transformation of economies and governments. Operational, managerial and strategic corporate decision-making processes have all benefitted from advances. BI incorporate rapidly advancing AI and DA capabilities to identify insights that matter most to decision-makers. With all of the focus given, many are seeking a better understanding of the benefits that it could provide to their organizations, governments and society. These technologies combined with industry platforms such as cloud, mobile, and IoT/5G – are driving use case innovations across industries from retail to energy and from finance to healthcare.

Open data has long been recognized as an important asset to boost AI/BI/DA research and practice and also stimulate industry use cases. The emergence of open access data and open source software for cloud enabled AI/BI/DA services and systems has extended the range of solutions available on the market favoring platform-based ecosystem models. While these bring tremendous benefits, AI/BI/DA has also raised increasingly concerns. The main concerns are data responsibility and ethical implications (security, privacy, bias, explainability, lineage, transparency, etc.) of using vast amounts of personal data and industry data with different levels of knowledge of the legal and social consequences.

We will consider results of recent research with focus on applying AI/BI/DA technologies in different industries and addressing a wide range of business and societal challenges, including digital transformation, open datasets, open source software, and ethical considerations.

In the paper “Technology as Actors in Service Systems” by Abul Kalam Siddique, Kazuyoshi Hidaka, Youji Kohda – defines service systems as dynamic configurations of resources (people, organizations, technology and shared information), interconnected internally and externally by value propositions with other service systems. This research aims to clarify that how and when service system entities become responsible actors addressing the question: Under what conditions does a technology such as a Cognitive Assistant (CA) become a responsible actor?

“Cloud-based ML Technologies for Visual Inspection: A Case Study in Manufacturing” by Timo Koppe and Jonas Schatz demonstrates different approaches to develop a ML-based visual inspection system in the manufacturing industry utilizing MLaaS platforms. It also demonstrates the value of AI and shows how to use data and models to improve production processes.

“A Real-world Case Study of Process and Data Driven Predictive Analytics for Manufacturing Workflows” by Petros Papapanagiotou, James Vaughan, Filip Smola and Jacques Fleuriot presents a novel application of business process modelling and simulation of manufacturing workflows. The simulation uses advanced analytics from live IoT monitoring and an ERP system to provide predictive business intelligence.

“Business Intelligence in the Database Marketing – A Case Study of a German Insurance Company” by Claus-Peter Ernst and Frauke Geiger is a case study of the BI practices of database marketing departments in insurance companies and the challenges they face.

“The Responsible Innovation Framework: A New Framework for Integrating Trust and Delight into Technology Innovation” by Alka Roy makes a case for a framework to innovate innovation and bring social considerations to technology decision making.

We hope you enjoy the papers and their presentation at this first HICSS online conference. We thank the authors for submitting their work to make this minitrack successful. We also thank the reviewers for their valuable feedback.