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 datasets have long been recognized as important assets 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 innovation, and ethical considerations.

In the paper “An Empirical Study of Factors Affecting Language-Independent Models” by Xiaotong Liu, Anbang Xu and Rama Akkiraju shed new light on language-independent models.

”The Role of Technical and Process Quality of Chatbots: A Case Study from the Insurance Industry” by Tommi Pirilä, Joni Salminen, Victoria-Sophie Osburg, Vignesh Yoganathan and Bernard J. Jansen investigates the factors that impact AI preference and adoption chatbots in a real customer service scenario.

The paper “Automated Defect Detection of Screws in the Manufacturing Industry Using Convolutional Neural Networks” by Johannes Breitenbach, Isabelle Eckert, Vanessa Mahal, Hermann Baumgartl and Ricardo Buettner presents how deep learning can help simplify the process of quality control and increase the velocity and volume of detected defects.

”Utilizing Active Machine Learning for Quality Assurance: A Case Study of Virtual Car Renderings in the Automotive Industry” by Patrick Hemmer, Niklas Kühl and Jakob Schoeffer propose an machine learning-based quality assurance system that requires fewer labeled instances to identify defective virtual car renderings without compromising performance.

Paper “An Innovative Approach to Modeling Aviation Safety Incidents” by Donghui Shi, Shuai Cao, Jozef Zurada and Jian Guan proposes a new approach to analyze aviation safety records using deep learning methods to improve incident classification.

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.

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