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Dear readers,

This special edition focuses on digitalization. As such, it also features articles presented at the Sustainability and Digitalization 2023 conference held in Dubrovnik, Croatia. This conference as well as the EuroDoble conference in Madrid featured panel discussions on Artificial Intelligence (AI), which is part of the digitalization umbrella. Many other events are being organised around AI and digitalization, proving that these are absolutely relevant topics that deserve our full attention.

Reflecting on these conversations, I'm reminded of my deep-rooted passion for artificial intelligence, a fascination that led me to delve into PhD research in this field fifteen years ago. As with everything else, I was initially captivated by its potential, over time I've gained some experience and become aware of its imperfections, limitations, and associated risks. Nevertheless, AI and digitalization undoubtedly offer remarkable opportunities.

I am not going to make a big analysis of the opportunities here, as they have been covered extensively in other articles, but I will just share where I saw the potential and why I decided to spend years researching it. It is data analytics around monitoring.

Data analytics is something that can be effectively managed with AI tools, which can work around the clock and detect failure mechanisms

There is a massive amount of data generated by transformer monitors, and a large part of it is never looked at by anyone, simply because we lack the skilled people even for the essential processes and we especially lack the people to analyse all that data. Data analysis is something that can be effectively managed with AI tools that are able to work 24 hours a day, 7 days a week and detect failure mechanisms. They do not replace people, but they help people. Such tools complement and augment human efforts, not replace them.

On the other hand, the potential for AI to replace human roles (jobs) is one of the greatest fears of AI sceptics. Even notable figures such as Stephen Hawking and technology pioneers such as Elon Musk have reportedly expressed concern that AI could pose an existential risk

to humanity if it goes beyond human control and develops goals that are not aligned with human values. While these concerns can be subjective, security risks and misuse are objective concerns, not only in relation to AI, but to digitalization as a whole. These issues are particularly pressing in times of political instability.

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Moving away from these broader societal concerns and political waters, there's a practical aspect of the AI in our industry that needs to be addressed: the transparency of AI tools. On the one hand, the inventors of AI tools will tend to keep their know-how secret, while, on the other hand, users, especially users of critical equipment such as a transformer, have a legitimate interest in knowing exactly what the AI is going to decide in crucial scenarios.

I think this is the area where we as an industry should focus our efforts. We cannot influence social movements and the political situation, but as professionals we can work together to reduce the barriers that are largely dependent on us. How do we do this? I believe by fostering collaboration and increasing transparency, understanding and trust around AI systems.

By fostering collaboration and increasing transparency, understanding and trust around AI systems we can reduce barriers to AI in our industry

This edition is packed with information on many other aspects of digitalization. I hope you'll find it both enlightening and entertaining.

Yours sincerely



Mladen Banovic, Editor-in-Chief

