AI-enabled transformations in telecommunications industry

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Artificial intelligence (AI) is making a significant impact in our rapidly evolving world. It is no longer science fiction and is transforming and disrupting all walks of life. The recent launch of ChatGPT is a clear manifestation that AI is moving beyond the hype. As we usher in the fifth industrial revolution (5IR), where humans and machines will work in greater harmony and synergy to create a better planet, AI is expected to create new realities filled with a variety of unprecedented opportunities.

It is becoming increasingly apparent that AI is bringing improvements in productivity and efficiency to all industries, resulting in a corresponding surge in profitability. As with other industries, the telecommunications sector has historically faced a myriad of challenges stemming from an array of issues that include regulatory, technical, and business-related requirements. With its profound socio-economic impact, AI has been viewed as a panacea for addressing those challenges intelligently and efficiently. Telecom companies are harnessing AI to enhance customer base and retention, provide automated services, identify faults and perform remote maintenance, and enable a seamless flow of the ever-increasing amount of data. This has never been possible before, but AI-enabled innovations are now drastically transforming the telecom sector. The future is being defined by cognitive and predictive AI, which will support emerging technologies and realities such as 5G/6G, IoT, Cloud, Fog, Edge, Metaverse, Blockchain, etc.

According to estimates, the AI market will surpass USD 1.5 trillion by 2030 and may help revive the world's shattered economy. The World Economic Forum predicts that 97 million new AI-related jobs will be created by 2025 as humans, machines, and algorithms increasingly work together. There is a possibility that we will have many new job roles that have never existed before. On the other hand,

the AI sector is receiving considerable attention from investors, increasing the number of unicorns in recent years. It is expected that necessity-driven AI innovations will birth cutting-edge business models that will benefit mankind. It should be noted, however, that AI is likely to face a global skills crisis and talent shortage that could undermine its large-scale proliferation in research, innovation, and development. Therefore, the telecom industry is likely to experience its ripple effect as well, and should be prepared to deal with it in advance.

On the other hand, AI is a double-edged sword that also has its vulnerabilities and can be misused and manipulated. Therefore, it should only be used in a responsible and ethical manner to empower humanity and maintain transparency, fairness, and accountability. The telecom industry has a huge responsibility on its shoulders to practice the responsible use of AI, which should be inculcated by design into products, systems, platforms, and applications. Lack of standards and governance is a stumbling block to ethical practices of AI, but it is our social responsibility that must never be forgotten.

As we embark on a new year's journey, the opportunity to set new goals and targets has presented itself. I think we can put AI on the agenda for the new year to gain new skills, hands-on experience, and knowledge. Moreover, I hope the contributing authors of our journal will consider papers that offer theory and applications of AI to telecommunications research and practice. In addition, I would welcome surveys, tutorials, and reviews too. If you have any ideas or potential topics to discuss, please don't hesitate to contact me.

Through this editorial, I would like to share some updates about our journal with you. In the preceding year, Springer-Nature rolled out a brand-new editorial system called Snapp, which has replaced "Editorial Manager." All papers are now submitted and reviewed through Snapp. Initially, it was quite challenging to move to the new system as all authors, reviewers, and editors were quite familiar with Editorial Manager. However, Snapp appears to be very efficient at making decisions and notifying authors. This system is

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designed to simplify the submission, review, and acceptance processes for authors, editors, and reviewers. Snapp is something I hope we all take advantage of. I would like to take this opportunity to compliment the diligent work, perseverance, and contributions of the Snapp team in launching this newly-developed editorial system.

Here, I would like to thank the editorial staff for providing exceptional services to authors, referees, and editors. I am indebted to our editorial board and reviewers for their remarkable service to the journal. Likewise, my appreciation is extended to Roshini Selvam, who plays a crucial role in the smooth editorial process. Our production editor, Radika Devakumar, helps us publish content on time. Ash Highfill has been extremely helpful in relation to the journal's editorial work. Last but not least, Matthew Amboy, executive publisher at Springer-Nature, deserves huge gratitude for his operational support to keep the journal running smoothly.

At the end, I wish everyone a happy, healthy, and fruitful new year!

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