Qua Vadis AI?

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During the last two decades, profound technological changes have occurred around us, supported by disruptive advances both on the software and hardware sides. Additionally, we have witnessed a cross-fertilization of concepts and an amalgamation of information, communication, and control technology-driven approaches. This has led to what is termed as digital transformation, i.e., the integration of digital technology into all areas of business, fundamentally changing how companies operate and deliver value to customers. The most recent development is integrating Artificial Intelligence (AI) in digital transformation as the primary enabler and the facilitator. It is expected that the applications of AI will truly transform our world and impact all facets of society, economy, living, working, healthcare and technology.

The study of artificial intelligence (AI) has been a continuous endeavor of scientists and engineers for over 65 years. The simple contention is that human-created machines can do more than just labor-intensive work; they can develop human-like intelligence. AI has been very appealing as it aligns with the nature of human beings in terms of their never-satisfied demands for higher productivity on the one hand and, on the other hand, the curiosity of how we understand and try to change the world. Having gone through several historical stages with several winters, AI has become a leading technology today and plays novel roles like never. Therefore, it is time to discuss the past, the present, and the future of both the AI tools and the AI "beings" at this juncture. In this presentation, in addition to the technical aspects of AI technology in short to mid-term, thoughts and insights are also presented regarding the symbiotic relationship of AI and humans in the long run.

Short Biography of Okyay Kaynak

Okyay Kaynak received the B.Sc. degree with first-class honors and Ph.D. degrees in electronic and electrical engineering from the University of Birmingham, UK, in 1969 and 1972, respectively.

From 1972 to 1979, he held various positions within the industry. In 1979, he joined the Department of Electrical and Electronics Engineering, Bogazici University, Istanbul, Turkey. He is currently a Professor Emeritus of this university. He has held long-term (near to or more than a year) Visiting Professor/Scholar positions at various institutions in Japan, Germany, the U.S., Singapore, and China. His current research interests are in the broad field of intelligent systems. He has authored three books, edited five, and authored or co-authored more than 450 papers that have appeared in various journals and conference proceedings.

Dr. Kaynak has served as the Editor in Chief of IEEE Trans. on Industrial Informatics, IEEE/ASME Trans. on Mechatronics and as the Co-Editor in Chief of IEEE Trans. on Industrial Electronics. He presently serves as the Founding Editor-in-Chief of Springer journal Discover Artificial Intelligence. Additionally, he is on the Editorial or Advisory Boards of several scholarly journals. He has received the Chinese Government's Friendship Award, Humboldt Research Prize, Doctor Honoris Causa, Obuda University, Hungary (2020) and the Academy Prize of the Turkish Academy of Sciences (2020). He is a member of this Academy.