Development and Industrial Application of Artificial Intelligence

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Abstract

Artificial intelligence has been used in more and more fields, bringing changes to human life and economic development around the world. Artificial intelligence technology is also used in many aspects of the industry. For example, defect detection, intelligent scheduling, preventive maintenance, and raw material combination optimization in the manufacturing industry are examples of AI applications. At this time, technology leaders lead innovation and early application. We have also seen that new companies such as voice assistants, face recognition, and medical image interpretation will make rapid progress in specific applications.

This speech will discuss the development of artificial intelligence from the aspects of industry, talent cultivation, and university research. It will introduce broad artificial intelligence technologies: deep learning algorithms, machine learning, data exploration, data extraction, big data analysis, and natural science. Language processing is used in smart manufacturing, smart finance, smart agriculture and other fields.

Biography

Sun-Yuan Hsieh received the PhD degree in computer science from National Taiwan University, Taipei, Taiwan, in June 1998. He then served the compulsory two-year military service. From August 2000 to January 2002, he was an assistant professor at the Department of Computer Science and Information Engineering, National Chi Nan University. In February 2002, he joined the Department of Computer Science and Information Engineering, National

Cheng Kung University, and now he is a chair professor. Dr. Hsieh has an extremely impressive record of research achievements in areas of algorithms and fault-tolerant computing for interconnection networks. His awards include the 2020 ACM Distinguished scientist, 2019 Kwoh Ting Li Honorable Scholar Award, 2016 Outstanding Research Award of Taiwan Ministry of Science and Technology, President's Citation Award (American Biographical Institute) in 2007, Engineering Professor Award of Chinese Institute of Engineers (Kaohsiung Branch) in 2008, National Science Council's Outstanding Research Awards in 2009, IEEE Outstanding Technical Achievement Award (IEEE Tainan Section) in 2011, Outstanding Electronic Engineering Professor Award of Chinese Institute of Electrical Engineers in 2013, and Outstanding Engineering Professor Award of Chinese Institute of Engineers in 2014. He is Fellow of the IEEE, Fellow of the British Computer Society (BCS), and Fellow of the Institution of Engineering and Technology (IET).

Dr. Hsieh is an experienced editor with editorial services to a number of journals, including serving as associate editors of *IEEE Transactions on Computers*, *IEEE Transactions on Reliability*, *IEEE ACCESS*, *Journal of Computer and System Science* (Elsevier), *Theoretical Computer Science* (Elsevier), *Discrete Applied Mathematics* (Elsevier), *Journal of Supercomputing* (Springer), Editor-in-Chiefs of *International Journal of Computer Mathematics* (Taylor & Francis Group), *Parallel Processing Letters* (World Scientific), *Discrete Mathematics, Algorithms and Applications* (World Scientific), and Managing editor of *Journal of Interconnection Networks* (World Scientific). In addition, he has served on organization committee and/or program committee of several dozens international conferences in computer science and computer engineering. His current research interests include design and analysis of algorithms, fault-tolerant computing, bioinformatics, parallel and distributed computing, and algorithmic graph theory.