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Embodied Intelligence and Robot, AI Robots and Future Directions

Abstract

There are many ways to make research and development of intelligent robotic systems. Focusing “Embodied Intelligence and Robot” based on the co-evolution and self-organization capabilities, I will show a new initiative on AI and Robot, Moon Shot Programs aiming on the Mega-Trend problems. Based on the Society 5.0, it is a new and challenging program aiming at the AI robotic system in 2050. I will introduce some of the projects in this program for realization of the Society 5.0 by back-casting technologies from the 2050 to the current ones. It is important to have international cooperation with many research institutions.

About Toshio Fukuda

Toshio Fukuda received Dr. Eng. from the University of Tokyo, Tokyo, Japan, in 1977.
Currently, He is Professor Emeritus Nagoya University, Professor Waseda University and Vice President of E-JUST. His major is bio-robotics, especially Micro and Nano Robotics.

Dr. Fukuda is IEEE President and CEO (2020), the IEEE Director of Division X, Systems and Control (2017-2018), IEEE Region 10 Director (2013-2014) and served President of IEEE Robotics and Automation Society (1998-1999), Director of the IEEE Division X, Systems and Control (2001- 2002), Co-founding Editor-in-Chief of IEEE / ASME Transactions on Mechatronics (2000-2002) and Editor-in-Chief of ROBOMECH Journal, Springer (2013-). He was Founding President of IEEE Nanotechnology Council (2002-2003, 2005).He was elected as a member of Science Council of Japan (2008-2013). IEEE Robotics and Automation Pioneer Award (2004), IEEE Robotics and Automation Technical Field Award (2010), Chunichi Culture Award(2019). IEEE Fellow (1995), SICE Fellow (1995), JSME Fellow (2001), RSJ Fellow (2004), Honorary Doctor of Aalto University School of Science and Technology (2010), Member of the Japan Academy of Engineering(2013), Medal of Honor on Purple Ribbon (2015), The Order of the Sacred Treasure, Gold Rays with Neck Ribbon (2022).