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Biorobotics and Bionics: New Frontiers for Robotics Science and Engineering

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Venue: 231 3F, Faculty of Engineering Bldg. 2

Abstract:

Biorobotics and bionics science and engineering are a new frontier of biomedical engineering and biorobotics. The term Biorobotics refers to both bio-inspired and bio-applied research and application of robots. The term "bionics" is increasingly used at international level to indicate the research area which integrates the most advanced bioengineering and robotics technologies with life sciences, such as medicine, biology and neuroscience, with the ultimate goal of using robotic artefacts as tools to validate scientific hypotheses, as well for inventing and deploying a new generation of biomimetic machines, human-centered healthcare, neuro-controlled limb prostheses, advanced artificial organs, and rehabilitation and assistive technologies. In this talk the history, definitions and evolution of bionics science and engineering will be illustrated, and numerous examples of research lines and medical applications will be given. The frontiers of this emerging area are extraordinarily promising and are receiving increasing attention also from policy makers because of their societal impact and ethical and legal implications. This seminar will outline some of those exciting new frontiers.

