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Sommario/riassunto

Biologically inspired robotics is an interdisciplinary subject between robotics and biology that involves how to apply biological ideas and phenomena to engineering problems in robotics (biomimetics), and how to apply robotics technology to understanding of biological systems and their behaviors (bio-robotic modeling/analysis). The efforts in biologically inspired robotics are not just restricted to research work in laboratories, their novel applications are also being extensively explored in services, education, rehabilitation, medical care and other sectors. The objective of this book is to introduce the latest efforts in research of biologically inspired robotics, covering both biomimetics (with chapters in biologically inspired robot design and control, bio-sensing, bio-actuation, and micro/nano bio-robotic systems) and bio-robotic modeling/analysis (discussing human hand motion recognition using biological signals, modeling of human brain activities, characterization of cell properties using robotic systems). In order to provide readers a better understanding on organization of this book, the content is classified into four parts: (1) biologically inspired robot design and control, (2) micro/nano bio-robotic systems, (3) biological measurement and actuation, and (4) applications of robotics technology to biological problems--