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Nota di contenuto	Analysis of the Current State of Robot Hands -- Analysis of the Human Hand -- The Awiwi Hand: An Artificial Hand for the DLR Hand Arm System.- Results.
Sommario/riassunto	Humanoid robotics have made remarkable progress since the dawn of robotics. So why don't we have humanoid robot assistants in day-to-day life yet? This book analyzes the keys to building a successful humanoid robot for field robotics, where collisions become an unavoidable part of the game. The author argues that the design goal should be real anthropomorphism, as opposed to mere human-like appearance. He deduces three major characteristics to aim for when designing a humanoid robot, particularly robot hands: - Robustness against impacts - Fast dynamics - Human-like grasping and manipulation performance Instead of blindly copying human anatomy, this book opts for a holistic design methodology. It analyzes human hands and existing robot hands to elucidate the important functionalities that are the building blocks toward these necessary characteristics. They are the keys to designing an anthropomorphic

robot hand, as illustrated in the high performance anthropomorphic Awiwi Hand presented in this book. This is not only a handbook for robot hand designers. It gives a comprehensive survey and analysis of the state of the art in robot hands as well as the human anatomy. It is also aimed at researchers and roboticists interested in the underlying functionalities of hands, grasping and manipulation. The methodology of functional abstraction is not limited to robot hands, it can also help realize a new generation of humanoid robots to accommodate a broader spectrum of the needs of human society.
