



ヒューマノイドロボット百科事典 **Humanoid Robotics: A Reference**

Edited by **Ambarish Goswami & Prahlad Vadakkepat**

2018年9月出版予定 2650ページ ￥172,790

Published by Springer U79999 ISBN: 9789400760455

- ◇ ヒューマノイドとして知られている人間型ロボットに関する最新のトピックスに焦点をあてる初めての包括的な参考図書です
- ◇ サービス産業、ヘルスケア、宇宙、危険な環境、教育、エンターテインメントなどにおけるヒューマノイド技術の応用について詳細な情報を提供します。
- ◇ 電気工学、機械工学、バイオメカニクス、材料工学、コンピュータ科学、生物学などを含む関連分野の科学者、技術者、院生レベルの学生に広くお勧めいたします。
- ◇ 理論と実践的な事例をバランスよく提供しております。

Humanoid Robotics provides a comprehensive compilation of developments in the conceptualization, design and development of humanoid robots and related technologies.

Human beings have built the environment they occupy (living spaces, instruments and vehicles) to suit two-legged systems.

Building systems, especially in robotics, that are compatible with the well-established, human-based surroundings and which could naturally interact with humans is an ultimate goal for all researches and engineers.

Humanoid Robots are systems (i.e. robots) which mimic human behavior. Humanoids provide a platform to study the construction of systems that behave and interact like humans.

A broad range of applications ranging from daily housework to complex medical surgery, deep ocean exploration, and other potentially dangerous tasks are possible using humanoids.

In addition, the study of humanoid robotics provides a platform to understand the mechanisms and offers a physical visual of how humans interact, think, and react with the surroundings and how such behaviors could be reassembled and reconstructed.

Currently, the most challenging issue with bipedal humanoids is to make them balance on two legs, the purportedly simple act of finding the best balance that enables easy walking, jumping and running requires some of the most sophisticated development of robotic systems- those that will ultimately mimic fully the diversity and dexterity of human beings.

Other typical human-like interactions such as complex thought and conversations on the other hand, also pose barriers for the development of humanoids because we are yet to understand

fully the way in which we humans interact with our environment and consequently to replicate this in humanoids.

About the Author

Prof. Goswami joined Intuitive Surgical, California, in 2016 where he is a Principal Systems Analyst.

Before Intuitive Surgical Ambarish was a Principal Scientist at Honda Research Institute in California. At Honda, Ambarish performed research in humanoid robots, assistive exoskeletons, mechatronics and vehicles. He also led the System Integration and Control Group for the self-driving car activities (AD/ADAS) and in 2015 his team successfully demonstrated sensor and GPS mediated autonomous driving in an experimental urban setting.

Ambarish received the Bachelor's degree from Jadavpur University, Kolkata, India, the Master's degree from Drexel University, Philadelphia, PA, and the Ph.D. degree from Northwestern University, Evanston, IL, all in Mechanical Engineering.

For four years following his Ph.D. Ambarish worked at the INRIA Laboratory in Grenoble, France, as a permanent scientific staff (Charge de Recherche). He was a member of "BIP" Project which developed the first anthropomorphic biped robot in France. Subsequently, he became an IRCS Fellow at the Center for Human Modeling and Simulation at the University of Pennsylvania. He then worked as a core animation software developer for 3D Studio Max at Autodesk.

Ambarish is an originator of the Compass Gait Model and the Reaction Mass Pendulum (RMP) model which are used to study gait of biped robots and human. Ambarish has also contributed to the understanding of humanoid robot balance and has introduced the Foot Rotation Indicator (FRI) point and Centroidal Moment Pivot (CMP). Ambarish has more than 80 publications with a total of more than 7000 Google Scholar citations; he has 21 patents. Ambarish is in the Editorial Board of Robotica (Cambridge University Press) and is the Editor-in-Chief of the forthcoming Humanoid Robotics: A Reference, from Springer.

Ambarish is an ASME Fellow (2013).

Prof. Vadakkepat, an Associate Prof. at the National Univ. of Singapore is the founder secretary of the Federation of Int'l Robot-soccer Assoc. and currently it's General Secretary. Prof. Vadakkepat received his M.Tech and PhD from Indian Institute of Tech. Madras, in 1989 and 1996 respectively. While pursuing Post-Doctoral studies at the Korea Advanced Institute of Science and Tech. (KAIST, 96-98), he was awarded the Korea Science and Eng. Foundation (KOSEF) fellowship. Since 1999, he is with the National Univ. of Singapore. His research interest include Distributed robotic systems, Humanoid robotics, Biomorphs, Neuro-Fuzzy Controllers and Intelligent Control techniques and, has publications in several leading international journals. He is an associate editor of the Int. Journal of Humanoid Robotics.



有限会社 **ブックマン**

〒113-0033

東京都文京区本郷3丁目4-8-501

Tel 03-5684-0561 Fax 03-5684-0562

E-Mail : sales@e-bookman.co.jp

ホームページ : <http://e-bookman.co.jp/>

ご注文・お問い合わせは下記へお申し
込み下さい。

(有)ブックマン

関西・中部・東海統括事務所

Tel 052-740-1829

Fax 052-782-4771

chubu@e-bookman.co.jp / kansai@e-bookman.co.jp

広島海外株

Tel 082-236-3522

Fax 082-236-3530

books@dear.ne.jp

福岡海外株

Tel 092-741-2685

Fax 092-741-8418

fkagai@lime.ocn.ne.jp