

学术报告通知

题 目：Applications of robust and adaptive control schemes on robotic manipulators: An overview

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邀请人：张卫东教授

Abstract

Once the robot architecture is chosen, its optimal design parameters (w.r.t. given specifications) must be found. However, a robot is not only a mechanical architecture, but is also slaved by a controller that impacts its performance. Robot manipulators similar to many engineering applications, it is impossible or very difficult to obtain an exact dynamic model of the robot, due to many unavoidable reasons. Moreover, presence of external disturbances is inevitable in robots. Good performance cannot be reached without advanced controllers. Therefore, this talk presents an overview of performance analyses of different advanced motion controllers using nonlinear and intelligent schemes to increase the robot accuracy. However, this talk focusses primarily on the research carried out at the Indian Institute of Technology Indore presenting recent developments in motion control techniques, application of these techniques on laboratory based prototypes to demonstrate the effectiveness and scope of future work extending these developments in mobile manipulators and medical assistitive robots.

About the Speaker: Santhakumar Mohan (PhD, IIT Madras, 2010) is an Assistant Professor of Mechanical Engineering at the Indian Institute of Technology Indore, India. His previous positions include post-doctoral researcher at the Korean Advanced Institute of Science and Technology, Daejeon, Republic of Korea; Visiting Faculty, Indian Institute of Science, Bangalore; Assistant Professor at the National Institute of Technology Calicut, India. His current research interests include underwater robots, vehicle manipulator systems, service robots, parallel manipulators, rehabilitation robots, nonlinear motion control, robust and adaptive control, and medical assistive devices. He is a recipient of the Alexander von Humboldt Fellowship (Germany) (2016-2017), Korea Robotics Society (KROS) Outstanding Young Researcher award (2014) and satellite across virtual institutes (SAVI) fellowship from the National Research Foundation of Korea (NRF), Republic of Korea (2013-2015).