

Toyota Partner Robots: Current Status & Future Direction

Abstract

With the aging of society, we believe there will be increasing need to secure a stable labor force and alleviate workloads, and, as lifestyles change, people will desire relief from the pressure of household chores. We feel that enhanced mobility will also be in demand, using compact personal mobility systems that can move freely both indoors and outdoors, expanding the functions of present-day vehicles. To respond to these future demands, we started the development of Toyota Partner Robots (TPRs), designed to support human beings. The development of Toyota Partner Robots which possess the two key technological elements, "intelligence" and "gentleness", necessary to serve and co-exist within society is demanded in order to place these Toyota Partner Robots or service robots under symbiotic environments. There are several directions in which Toyota would like to take the development of "Toyota Partner Robots" as mentioned below, and the main four directions are:

- 1) Assistance -- help human-beings in housework and chores.
- 2) Welfare -- care for the elderly and disabled at hospitals, nursing homes, hospices, etc.
- 3) Manufacture -- support machine operators with dangerous or strenuous tasks, such as the transportation of heavy objects.
- 4) 3-Dimensional Mobility -- move around freely and easily whenever and wherever desired.

Curriculum Vitae



Dr. Susumu Shimizu

TOYOTA MOTOR EUROPE NV/SA

Hoge Wei 33, B-1930 Zaventem, Belgium

Tel: +32 2 712-3368

Fax: +32 2 712-3399

Email: Susumu.Shimizu [at] toyota-europe.com

- 1992 Graduated with Bachelor of Engineering, Department of Mechano-Informatics, The University of Tokyo
- 1992/4 Entered Nippon Telegraph and Telephone Corporation, joined Software Laboratories
 - Specialized on research of software engineering
- 1994 Started research on the Internet search and indexing, computer networking
- 1998 Worked at Cisco Systems (San Jose, USA) for developing link layer protocol development
- 2000 Worked at France Telecom R&D (Lannion, France) for joint research activity of high speed optical networks
- 2003 Started doctoral work on the measurement technology for the Internet security, at Waseda University
- 2005/7 Entered Toyota Motor Corporation, joined Partner Robot Development Division
 - Specialized on development of System software of robots
- 2006 Received Degree of Engineering (Information Systems) from Waseda University
- 2009/1 Appointed to Toyota Motor Europe, Belgium (Brussels)
 - Collaborative Research Projects with various European Research Institutions

