

FEATURES

- 26 Medical and Health-Care Robotics**
 Achievements and opportunities
By Allison M. Okamura, Maja J. Matarić and Henrik I. Christensen
- 38 Modular Robot Systems**
 From self-assembly to self-disassembly
By Kyle Gilpin and Daniela Rus
- 56 The GRASP Multiple Micro-UAV Test bed**
 Experimental evaluation
 of multirobot aerial control algorithms
By Nathan Michael, Daniel Mellinger, Quentin Lindsey, and Vijay Kumar
- 66 Flexible Vision**
 Mobile agent approach
 to distributed vision sensor fusion
By Stephen S. Nestinger and Harry H. Cheng
- 78 The RoboCup Cup**
 A look at mechatronics education in 2009
By Jonathan Fiene
- 83 A Beginner's Guide to 6-D Vectors (Part 1)**
 What they are, how they work, and how to use them
By Roy Featherstone

DEPARTMENTS

- | | |
|--------------------------|--------------------|
| 2 From the Editor's Desk | 22 Competitions |
| 4 President's Message | 23 ROS Topics |
| 8 From the Guest Editor | 95 Editor's Corner |
| 10 Student's Corner | 96 Society News |
| 17 News and Views | 100 TC Spotlight |
| 18 Industrial Activities | 101 Calendar |
| 20 Education | 104 Turning Point |

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In this issue, we celebrate 50 years of robotics, following up on the theme from this year's IEEE International Conference on Robotics and Automation held in Anchorage, Alaska. This issue features three articles drawn from presentations given at the "Celebrating 50 Years of Robotics" symposium at the University of Pennsylvania in December 2009, which describe new directions for robotics research.

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