Washington/Northern Virginia RAS Chapter Activities

Raj Madhavan

The Washington Section of the Robotics and Automation Society (RAS) Chapter was formed in May 2007 and then expanded as a joint Chapter of the Northern Virginia Section in June 2008. The mission of the Chapter since its inception has been twofold: 1) serve as a forum for discussions, dissemination of ideas and 2) enhance and foster collaborations and partnerships between researchers, graduate students, practitioners from industry, academia, and government agencies, enabling their personal and professional growth, while serving as an ambassador to the Society and the IEEE at large.

The efforts of the officers (Chair Raj Madhavan, Vice Chair Leon Escobar, Treasurer Robert Noteboom, and Webmaster Paul Ferret) members in the area, and support from RAS have enabled the Chapter to make significant strides in less than two years, created awareness among the general public, school students, and researchers. It has become a focal point for anyone interested in robotics and automation in general, and has variously engaged the RAS/IEEE Members in the Greater Washington area (Washington DC, Northern Virginia, and Maryland) via the following activities.

Speaker Series

Technical talks are brought to the Chapter members via two different speaker series: 1) Member Speaker Series brings local speakers to present interesting robotics, intelligent systems, automation research, and implementations, and 2) Guest Speaker Series brings experts to educate the Chapter members on the state of the art and grand challenges in specialized fields. Some of the speakers of these series have included Prof. Henrik Christensen (Georgia Tech.), Dr. Edward Tunstel [Johns Hopkins University Applied Physics Laboratory (JHU-APL) formerly of JPL], Dr. Robert Grabowski (MITRE), and Mr. John Palmisano [International Conference on Robotics and Automation (ICRA'07) Best Paper Award Winner].

Competitions

We strongly believe that competitions are an effective means of stimulating interest and participation among students by providing exciting technological problems to tackle. The Virtual Manufacturing Automation Competition (VMAC), organized by Stephen Balakirsky, Raj Madhavan, and Chris Scrapper, was motivated by lowering the traditional high-entry barrier into robotics and to encourage participation from minority institutions by the creation of a manufacturing automation regional competition using simulation systems and open source software. With funding from RAS under the New

Initiatives Competition initiative and support from NIST, seven teams from regional universities in the Greater Washington area consisting of faculty mentors and both undergraduate and graduate students participated in the competition. For 2009, with continued funding from RAS and NIST, this competition has been expanded to a national competition [1] and is expected to include teams from several states. Also for 2009, VMAC is part of the Robot Challenge to be held at ICRA'09 in Kobe, Japan [2]. See [3] for a detailed description of VMAC and the winning teams.

The Autonomous Robot Speedway Competition (Organizers Melanie Vida and Raj Madhavan) focused on mobile robots autonomously navigating a course that included a double-sided, elliptical course of orange cones. The autonomous platform that navigated between the cones at the fastest pace whilst displacing the fewest number of cones (in addition to a number of scoring metrics) was deemed to be the winner. The first place prize of US$500 and the third prize of US$100 were made possible by an RAS local Chapter grant which also supported some of the infrastructure costs. University of Maryland Department of Electrical and Computer Engineering (ECE) was a coorganizer of this event. More details on scoring metrics and competition rules can be found in [4].

Workshops and Events

The Chapter has been a technical cosponsor of two Performance Metrics for Intelligent Systems (PerMIS) workshops (2008 and 2009) [5] and a spring symposium [6]. The PerMIS series, started in 2000, is aimed toward defining measures and methodologies of evaluating performance of intelligent systems. The spring symposium focused on how technology can help people lead a more independent life in their golden years.

Community Outreach

Members of the Chapter have served as judges for competitions for FIRST, LEGO league, and Montgomery County Public Schools Career, Engineering, and Technology Student Challenge. The Section and the Chapter are active in terms of funding and participation in local robotics club activities at IEEE Washington DC High School Clubs, Community Colleges, and encouraging participation in the workshops and events organized by the Chapter.

Professional Development and Service

Professional development seminars are organized within the Member Speaker Series to give the Chapter members a good balance between technical content and professional skills. Examples are a recent presentation by Doug Holly on "Project Management

Tools" and an upcoming seminar on how to obtain licensure for a professional engineer planned for later this year.

Section and Region Engagement

The Chapter has actively leveraged the expertise and funds from its parent Washington Section. The Section has provided sponsorship for workshops (the aforementioned PerMIS and Golden Years Symposium) and has participated in many of our activities including assistance with judging and reviews of competitions, and technical matters. The Chapter also provides value for the Section by participating in educating the members of IEEE at the Section and Region level via grant writing workshops, and publishing articles in the National Capital Area Scanner.

Keeping Members Engaged and Informed

The Chapter maintains a diligently updated Web site that serves as a portal for members to stay abreast of Chapter-related news (http://ewh.ieee.org/r2/washsec/ras/). A monthly e-newsletter containing newsworthy items related to robotics, sensing, and automation is mailed out to members in the geographic area (reaching far beyond the core RAS membership in the area). These have enabled the Chapter to bring in new audiences many of who have gone on to become members and senior members of RAS.

The Chapter has continually provided excellent publicity, outreach, and exposure to RAS in this geographic region by bringing together engineers from diverse backgrounds resulting in increased memberships and renewed interest in the Society's related activities.

With robots poised to play an increasingly vital role in assisting humans in a variety of domains ranging from innocuous daily chores around the household to potentially harmful situations, we sure do live in interesting times! I welcome your feedback and comments.

References

[1] Virtual Manufacturing Automation Competition (VMAC) [Online]. Available: http://vmac.hood.edu/
[2] ICRA'09 Virtual Manufacturing Automation Challenge [Online]. Available: http://icra.wustl.edu/?q=2009vmac/
[3] R. Madhavan. (2008, July–Aug.). Virtual automation competition features open source code, IEEE National Capital Area Scanner. [Online]. 23(4). Available: http://ewh.ieee.org/r2/capitalarea/eSCANNER/Scan08n4.pdf
[4] First Annual Robot Speedway Competition [Online]. Available: http://www.robotronics.org/competitions.html/ and http://exploring.external.lmco.com/Robotics2009/Speedway/speedway.html
[5] R. Madhavan and E. Messina, Eds., *Proceedings of the Performance Metrics for Intelligent Systems (PerMIS) Workshop* [Online]. Available: http://www.isd.mel.nist.gov/PerMIS_2007/ and http://www.isd.mel.nist.gov/PerMIS_2008/
[6] Technology for the golden years: Leading an independent life in the 21st century [Online]. Available: http://ewh.ieee.org/r2/no_virginia/embs/Past_Event_Details_files/goldenyears/goldenyears_summary.html

2010 IEEE-RAS/IFRR School of Robotics Science
Call for Proposals

2007 IEEE-RAS/IFRR Summer School on Robot Learning, Lazise, Italy (Photo by Dana Kulic)

The **IEEE Robotics and Automation Society** and the **International Federation of Robotics Research** (www.ifrr.org) invite proposals for topics and sponsorships for the IEEE-RAS/IFRR School of Robotics Science.

The purpose of the one-week intensive schools is to provide outstanding graduate students and post doctoral scholars the opportunity to study an emerging area of robotics with leading researchers. Schools typically provide laboratory experience and a living/learning environment to facilitate interaction among the students and faculty.

Please contact Paolo Fiorini or Daniela Rus (paolo.fiorini@unvr.it, rus@csail.mit.edu) for more information.