TOPIC	**Design of a Home Multi-Robot System for the Elderly and Disabled**
ORGANIZERS	Student Leadership Council and Faculty of the TECHLAV
AREA	Robotics, control systems, multi-agent systems, Robot Operating System (ROS)
SPEAKER	Patrick Benavidez, (Phd)
DATE	May 27
TIME	11-12EST
VENUE	Room 410, Fort IRC Bldg, North Carolina A&T State University, UTSA and SIPI are joining through video-conferencing.
FEES	No Charge

SYNOPSIS

Home-based assistive robotic care for the elderly and disabled has long been a goal of robotics researchers. Unfortunately, no single group has solved the problem of making robots that will perform a set of tasks sufficient enough to warrant the cost to the end consumer. Numerous advances and improvements in computing, communication and related robotic technologies have been paving the way towards cheaper, more capable robots. We propose a home robot system consisting of a set of heterogeneous robots with different task spaces, cloud computing to enhance the abilities of the system, integration with existing home infrastructure, and compatibility with mobile technology. A high level of integration with the open source software of the Robot Operating System (ROS) is proposed to accelerate the design process. For the exact types of robots, we propose to use an enhanced floor cleaning robot and a mobility and vision assistance robot in the form of an improved rollator walker.

ABOUT THE SPEAKER

Patrick Benavidez received the B.S. degree in electrical engineering from the University of Texas at San Antonio in 2007. In 2007, Patrick began working on his masters' degree while working for Southwest Research Institute. He received a M.S. degree in electrical engineering at the University of Texas at San Antonio and concluded his internship in 2010.

He is currently pursuing his Ph.D. in electrical engineering at the University of Texas at San Antonio with initial funding provided by a Valero Graduate Research Fellowship and Scholarship. Mr. Benavidez recently received the following two awards for volunteering and outreach: "Most Exceptional Graduate Student" by the UTSA College of Engineering and a University Life Award for "Most Outstanding Graduate Student in the College of Engineering" by the UTSA Student Government. His current research is supported in part by a Valero Research Excellence Award and through the UTSA Graduate School with Graduate Student Research Scholarship.

Mr. Benavidez has supported professors in several grant writing efforts. He has also mentored numerous students for Master thesis, projects and undergraduate capstone projects. His areas of interest include communication systems, control systems, robotics, cyber-physical systems, and systems of systems.