



**Green Mountain
IEEE Computer
Society Chapter**

Insight Racing and the DARPA Grand Challenge

Grayson Randall, IBM

6:00 PM, October 2, 105 Votey, UVM

Driven by a Congressional mandate to convert one-third of the military vehicles to driverless computer-driven mode by 2015, the Department of Defense who authorizes and runs the DARPA Grand Challenge, believes the future holds great promise for autonomous vehicles to perform missions that put our men and women in uniform at risk. The \$2 million prize goes to the vehicle that completes the 175 mile desert course the fastest within a 10 hour time period.

Raleigh, NC based, Insight Racing team's Desert Rat computer driven Chevy Suburban was one of the last 3 robots on the DARPA Grand Challenge Course on October 8, 2005. A finalist in the historic Defense Advanced Research Projects Agency (DARPA) Grand Challenge Race, the Desert Rat was still running after 17 of the 23 team field had stopped mid course in the Mojave Desert course. Insight Racing earned a spot in the finals during a week long set of grueling elimination rounds held in California, from which DARPA whittled the field of 43 semi-finalists to the 23 best who ran on the Mojave Desert October 8th. The field was narrowed down to 23 participants from almost 200 entrants. The sensors on the 1987 Chevrolet Suburban permit it to drive unknown terrain, regulate its speed, and avoid obstacles just like a human driver but without any human intervention.

Grayson will talk about the team, what it took to develop the robot, and has lots of pictures and video of the qualification and race events in California.

DARPA has recently announced another Grand Challenge to take place in November 2007. Grayson will give an update on the Urban Challenge, where driverless vehicles tackle driving in city traffic.

More information at <http://www.insightracing.org>.



Speaker: Grayson Randall, IBM

Grayson Randall is the team leader of Insight Racing. He is responsible for the overall system design and architecture of their Grand Challenge entry. Specific development responsibilities include vision processing and sensor data management. Grayson started the team in early 2003 in response to the initial DARPA Grand challenge. Grayson is a senior software engineer at IBM. He has 24 years experience in systems design and architecture. At IBM, he has worked on projects involved with manufacturing automation, digital video processing, set top box designs, as well as network processors for high speed network communications. He is currently involved in PowerPC processor development. Grayson's work includes 9 patents and several publications. Prior to IBM, Grayson had 5 years experience in the development of commercial and military flight simulators. Grayson holds a BS in Aerospace engineering from Parks College of St. Louis University. He is chairman of IEEE Robotics and Automation chapter for Eastern North Carolina. He also mentors a FIRST high school robotics team which won 1st place in the 2004 international FIRST competition as well as numerous other awards.