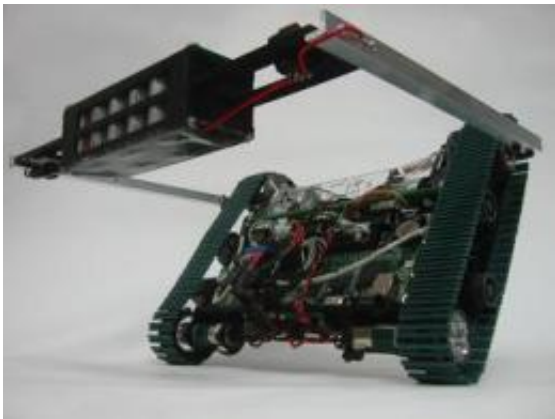


UCSD Robots Take Center Stage at National Robotics Conference

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, a robot created by UCSD's Coordinated Robotics Lab, received rave reviews during NI Week, the popular annual robotics conference in Austin, Texas.

Novel agile robots created by mechanical engineers at UC San Diego recently made their way to Austin, Texas, and took center stage during a keynote address at NI Week , the annual robotics extravaganza hosted by National Instruments.

“NI Week exposed us to 3,000 of the world’s leaders in robotics,” said Tom Bewley, a Mechanical and Aerospace Engineering professor at the UCSD Jacobs School of Engineering. “As we recently filed patent disclosures with UCSD’s IP office, we finally had the opportunity to go public on a large scale with some of our most exciting new designs, and to begin seeking partnerships with industry for commercialization.”

During their keynote address, Bewley and his Ph.D. students Christopher Schmidt-Wetekam and Nick Morozovsky of the UCSD Coordinated Robotics Lab gave live demos of their third-generation multimodal hopping rover, iHop, and their miniature treaded rover, Switchblade. Both designs feature feedback control to stabilize various maneuvers, trading off static stability for significantly enhanced agility. They also introduced iceCube, a self-propelled, self-guided sphere, which is actuated via internal control moment gyros and was designed by Jacobs School Ph.D. student Andrew Cavender.

“Our robots can stand up and jump, greatly increasing their reach, while less advanced robots are often limited to statically stable configurations,” Bewley said. “Using advanced feedback control, we can give our robots a sense of balance. Feedback means, essentially, that our robots can detect when they are about to fall over, and figure out how to shift their weight appropriately so they don’t. With such feedback incorporated, we can simplify our robots mechanically while remaining agile. This will ultimately lead to effective miniaturization and facilitate a variety of useful applications, such as enhanced 3D mapping of buildings and tunnels in dangerous or remote environments.”

A short video of the keynote address is available at zone.ni.com/wv/app/doc/p/id/wv-1705/upvisited/y

If you have just a few moments, check out the Switchblade [robot](#) at the 10 minute mark. You'll see Switchblade pop a wheelie, maneuver its boom, and climb stairs.

Provided by UC Davis ([news](#) : [web](#))

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