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City Tech Students Take First Place in International Design Competition in Shanghai, China

Brooklyn—August 28, 2014—This spring, City Tech students Eugene Babkin, Bijan Mokhtari, and Angjelo Kuka won first place in the regional Digilent Design competition hosted by City Tech. With that win they earned the opportunity to compete in the Digilent Design Worldwide Contest in Shanghai, China, where they again took first place against strong international competition earlier this month. The City Tech team competed against 12 teams: six from China, one from Japan, two from Romania, one from Hungary, and one other team from the United States—the U.S. Air Force Academy, which had finished second in the U.S. competition.

The Digilent Design Contest is an international hardware design competition open to students who are passionate about electronics, digital design and electrical engineering in general. The contest provides an opportunity for students to present their work and receive feedback from international industry representatives. At the same time, students improve their skills and face new challenges in developing projects using the latest technologies.

“China was beautiful, the people were lovely, and the food was delicious. Above all, it was a pleasure participating in the Digilent competition, and I am thrilled to take home first place,” says Babkin, the only student able to travel to China to present the team’s design. Teammate Mokhtari had already left for Finland to pursue his master's degree in mechanical engineering at Aalto University in Helsinki, and Kuka was unable to make the trip.

The City Tech team developed TOBiAS (Tele-Operated Bi-Manual Augmented System), a virtual reality-style immersive experience that allows human input to dictate the movement of a remote robotic torso. The Control Unit is the heart of TOBiAS and is a wearable control mechatronic device in which the user sits and is able to control the robot.

The control of the robot is unlike conventional control interfaces where the operator manipulates joysticks, pedals, levers and buttons to move the robot. TOBiAS reads the movement of the operator sitting inside it and mirrors the movements. Somewhat similar to an exo-suit, the operator straps the control arms and gloves to his/her arms, wears the helmet and controls the robot. The hand-control units on TOBiAS were made with 3-D printer technology. Applications include nuclear clean-up, explosive handling and disposal, and exploration of unknown territories.

The team and their faculty advisor credit City Tech’s Mechatronics Technology Center (MTC), where they had access to state-of-the-art technology, for providing the tools needed to create their design. “The MTC, funded by the National Science Foundation, created a platform for students from different engineering fields to collaborate, and that, in part, made it possible for the TOBiAS team to win the top prize,” says Professor Andy Zhang, Department of Mechanical Engineering Technology.

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New York City College of Technology (City Tech), of The **City University of New York**, is the largest four-year public college of technology in New York State and a national model for technological education. City Tech has an enrollment of nearly 17,000 students in 65 baccalaureate, associate and specialized certificate programs. <http://www.citytech.cuny.edu>