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KCVI's 'Basket-Bot' to hit the world stage

Posted Mar 22, 2012 By Hollie Pratt-Campbell

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EMC News - A couple months ago, the EMC told you about KCVI's Robotics team "K-Botics", which was hard at work designing a basketball-playing robot for this year's FIRST Robotics World Championship.

The team had an extremely successful weekend March 10-11, taking home awards for Engineering Excellence and Engineering Inspiration at the Greater Toronto (East) Regional event. The awards recognized exceptional engineering design and innovation, as well as the team members' efforts to promote science and technology in their community, they also secured K-Botics a spot at the World Championship in St. Louis, MO, April 25-28. This marks the second year in a row the team has been recognized for its exceptional engineering.

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Grade 10 student Sam Tabor says that it was the unique combination of the team members' creative free-thinking and the knowledge of their Queen's engineering student mentors that allowed them to be so successful in this category.

"We don't tend to shut down ideas as often as a bunch of engineers would," he says. "The kids will come up with some crazy ideas and stuff that you wouldn't normally see on a robot built by people who have gone through university...You don't really know what kind of limits there are, so you can think as broadly as you want."

"The fun of it is to make crazy things work," says mentor and Queen's engineering student Kevin Hughes.

"I'm here to pass on my knowledge, but I'm also here to learn. I gain a lot of valuable experience by teaching others and also by pushing the limits of what I've done before."

Tabor explains that one of the unique engineering components of the team's robot is its detachable electrical box.

"We keep all our electrical things...inside a nice box so we can take it away (easily). That way we can keep everything organized and clean while (we) work on the robot."

Hughes notes that another unique feature of the robot is a custom printed circuit board.

"It's got little lights that go on...and we can physically see how the sensors are behaving with these lights. We also (installed) little buttons to change them manually, so it makes it really, really handy to debug any kind of electrical issues."

In addition, Hughes notes that K-Botics' robot was distinguishable at the competition for its automatic features.

"We actually used a camera to figure out where the targets are and then it positioned our ball launcher appropriately," he says. "That's a lot more advanced than a lot of teams did."

Tabor remarks that the experience is always extremely rewarding for the high school students, who get to compete on teams with students from other schools at the robotics competitions while the abilities of the robots to perform their assigned tasks are assessed.

"This isn't my first competition, but I find them getting better and better each time," he says. "It was great seeing all the newer kids just beam up when they saw all the action. And it was great being able to interact and help with the other teams as well, which is also one of the reasons why I love these competitions."

Refusing to rest on their laurels after Toronto, the students were hard at work through last week's March break, and plan on continuing to tweak the robot until the world championship next month.

"It's pretty exciting, but we've got a lot of work to do before we get there," says Hughes. "There are a number of small improvements we'd like to make."

The students are also competing at the Waterloo Regional competition March 22-24 in preparation for the World Championship. You can follow their progress at www.kbotics.ca/blog or Twitter feed @FRC2809.

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