"Having a fun name is a great ice-breaker at robotics events, and lets us come up with funny skits and dress up as 'Star Wars' characters," says Sanjay.

The team entered their first competition, the FIRST Lego League "Food Factor," in December 2011. That year, they won First Place Robot Performance, as well as Third Place Overall Champion.

"The Champion award is for the team that excels in all parts of the tournament. It was an inspiring start to our robotics career," says Arvind.

With a nod to the TV series "Dr. Who," the team's Razorback competition robot was named the TARDIS, which stands for Technically Advanced Robot Designed in Style. The robot was able to complete all of its missions in just two minutes and 30 seconds. The robot remained in first place until the second day of competition, when a team from Japan earned a better score. The brothers were pleased with their achievement.

"Winning the Champion's award at Razorback Invitational was amazing, not because of the prizes, but because of the friends we made," says Sanjay. "All our friends who were competing against us came and surrounded us when they announced the overall tournament champion. This was our favorite single moment of the event, because the best prize was making friends from around the world."

In June the team was named as a Top-30 finalist for MoonBots, a Google Lunar XPrize challenge for children ages 8-17, the only team from Pennsylvania to receive such an honor. For this worldwide competition, the brothers had to create a robot and simulate several lunar missions.

In addition, Lego invited Sanjay and Arvind to attend the World Maker Faire in New York in September to present their work with Mindstorms.

Even though he's not yet in high school, Sanjay already knows that he wants to be a robotics engineer.

He says, "When my parents tell me, 'Go do what you like,' I usually go to a computer – not to play games, but to develop a new way of coding a website or building an app." Sanjay already has three Android apps available on Google Play; iOS apps are in progress.

As for Arvind, he wants to focus on inventing, "like Thomas Edison or Dean Kamen." (Kamen invented the Segway device and founded the FIRST program.)

The brothers, who also spend "hundreds of hours" every year teaching classes to their peers, say that they want to inspire children and show them that even at a young age you can make an impact.

"We want to share our love for robotics and computer science and inspire other kids to try it out, too," says Sanjay. "We especially enjoy being able to teach other kids and see them get as excited about robotics as we are." ■

SHARING THE WEB OF KNOWLEDGE

In September of 2014, the Seshan brothers began sharing their own EV3 robotics resources online. One month later, the demand for their lessons became so high that they purchased the domain name EV3Lessons.com and turned their passion into a flourishing, comprehensive website. The site, which was developed as part of the 2014 FIRST Lego League World Class Project season, now has approximately 20,000 users from 124 countries and is attracting nearly 3,000 new users each month. The lessons are used by elementary, middle and high schools all over the world, as well as by Boy Scout merit badge clinics, robotics teams and summer camps.

The brothers say they had two goals in creating the website: to create a better way to learn to program the EV3, and to encourage EV3 users and robotics teams to share knowledge.

"If you look at our list of contributors, we have children, adults and robotics teams all over the world contributing knowledge. That's why we have the tag line 'Let's Learn Together.' We believe that if everyone shares their knowledge, we can all learn more," says Arvind.

The lessons they share are completely their own; they now have more than 40 lessons available and plan to write more. The site also features interactive tools and engineering resources the pair have created in addition to their programming lessons. After collaborating with educators, they added lesson objectives and discussion guidelines to make them suitable for use in a classroom setting.

"We looked at what was available and wanted to make improvements. Our research indicated that students today have declining attention spans and are reluctant to read. We wanted to create material that was concise, easy to understand, and to the point," says Sanjay. "No other source teaches as much material for intermediate and advanced users."

The brothers' next step is to continue to grow the content on EV3Lessons.

"We are collaborating with companies related to robotics to bring more resources to our users," says Arvind. "Our goal is to be the go-to site for robotics lessons, but also provide all Mindstorms users information to make good decisions."

"Getting long-term funding is also something we have to think about, since all our materials are free," added Sanjay.

For more information or to donate, visit EV3Lessons.com.