LUGS ON TOUR

Pi Wars

Deciding the ultimate Raspberry Pi robot!

The Raspberry Pi's small size, low power requirements and accessible GPIOs make it a great device for robotics. It forms the brains of the robot, and all manner of hardware can be attached to the outside to create everything from sailing boats to flying machines. The vast majority of Raspberry Pi robots though move on solid ground, and it was these land-based Pi-powered robots that came together on a frosty morning at the start of December in Cambridge University's Institute for Astronomy to compete in nine challenges to find out which would be crowned champion.

The events were:
- Three point turn.
- Speed test.
- Obstacle course.
- Sumo.
- Line follower.
- Robot golf.
- Proximity alert.
- Code quality.

Together, these tested a range of qualities, and no one style of robot dominated all events. Big, powerful robots had the upper hand in sumo, but line-following and proximity alert (getting as close as possible to a wall without touching it) favoured smaller, more deft machines.

Entries ranged in size from the University of Plymouth's bot, which had the same footprint as a Raspberry Pi A+, to a behemoth decked out as a pirate ship. The only restriction in the rules was that the robots had to have a footprint smaller than a sheet of A3 paper.

The overall results were split into two categories: those that cost under £75 to make, and those that cost more. The competitors
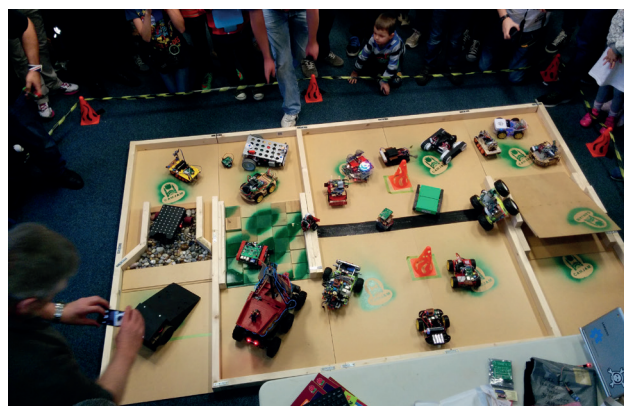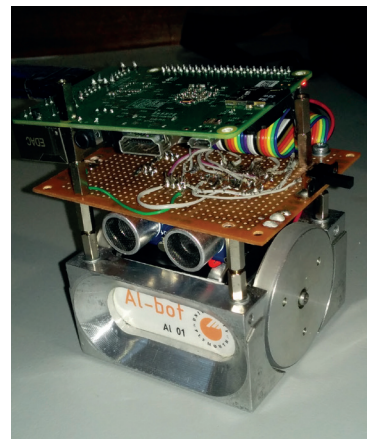
The range of events meant that every robot had a chance of doing well at Pi Wars. Good show everyone!

were split roughly evenly between those two categories. This kept the playing field even despite people entering from a wide variety of backgrounds. There were schools, university students, professional hardware designers and more present.

When Tim Richardson and Mike Horne (the Pi Wars organisers) totted up all the scores, TractorBot came out on top of the under £75 competition, and Psiclops won the over £75 category. Both of them walked away with a huge selection of Raspberry Pi goodies. There were also prizes for the winners in

each event, and a few special prizes such as the most innovative and best-looking. In the end, almost every entrant left with something to show for their efforts.

If there's enough interest, Pi Wars may become a regular competition. Keep an eye on **www.piwars.org** for details of future events.

TELL US ABOUT YOUR LUG!

We want to know more about your LUG or hackspace, so please write to us at **lugs@linuxvoice.com** and we might send one of our roving reporters to your next LUG meeting

Literacy On Linux: The Global Learning XPRIZE

Jono Bacon launches a competition from his new position as Senior Director of Community at XPRIZE.

In September the $15 million Global Learning XPRIZE (**http://learning.xprize.org**) launched. The concept of the competition is simple at its core. Teams around the world are challenged to create an application that will run on an Android tablet that will teach a child basic reading, writing, and arithmetic, within 18 months, autonomously. For Linux and Open Source fans though, here is the neat part. The winner of the competition and the four runner-up teams will all be expected to release their code as open source, complete with all of the included assets, unique content and materials.

It doesn't end there. Teams are being asked to build their solutions using the hugely popular Android platform. This means that every solution will be built on an open source platform, using open APIs, and running an entirely open educational codebase. As you can imagine, the impact of this technology could be great.

According to the United Nations Educational, Scientific and Cultural Organisation (UNESCO), there are 250 million children around the world who cannot read. We simply cannot build enough schools or train enough teachers to serve our global literacy needs.

Make the world better

As such, the Global Learning XPRIZE is exploring how technology may be utilised to challenge some of the noted causes of illiteracy due to the lack of access to traditional models of education by creating a bridge to those thought unreachable. This technology could be deployed around the world, bringing learning experiences to children who do not have access to quality education, and supplementing the learning experiences of children who do.

Anyone is welcome to form a team and compete. This is a competition that is open to all,

irrespective of approach. As you can imagine, this is a complex challenge that teams are being asked to solve. The competition has been structured with extensive development and field-testing phases. The overall competition will conclude in 2019.

How to enter

Team registration is currently open and closes on 31 March, 2015, then the solution development phase begins on 1 April, 2015 and will run until October 2016. These solutions will be judged and five finalists will be chosen, each of which will be awarded $1 million. The finalists will then enter the field-testing phase of the competition where their solutions will be tested with real kids in rural villages from June 2017 until the end of 2018. Finally, a winner will be picked and awarded the $10 million prize purse in early 2019. For more information or to enter simply visit: **http://learning.xprize.org**.

If you're interested in competing, the first step is to form a team. We recommend that you put together a team that comprises developers, testers, designers, artists, scientists, content developers and others that will help build a comprehensive solution. If you're looking for team

members, it might be useful to reach out to your local Linux User Groups, educational groups, universities, visit the forum (**http://forum.xprize.org**) and more.

Next you should take a look at the prize guidelines and rules at **http://learning.xprize.org/about/guidelines** – this will answer many of the questions you may have about the specifics of participating. Finally, go and fill in an Intent To Compete form at **http://learning.xprize.org/about/registration**. This notifies the XPRIZE Foundation of

Put a team together and help create an application that will autonomously teach kids literacy.

"This technology could bring learning to children who do not have access to education."

your desire to participate and keeps you up to date with the progress of the prize. You will be notified if your application to participate has been successful.

We hope to see some Linux Voice readers creating teams and striving to not just win the $10 million, but to put their stamp in truly making this rock we live on a nicer place for everyone.

Global Learning Homepage – **http://learning.xprize.org** LV