

are also available in a GUI utility called NeXT Tools on both Mac OSX and Linux. I also have made a number of fixes and enhancements to the LEGO NXT firmware and make it freely available in binary and source code form as the enhanced NBC/NXC firmware which is 100% compatible with the standard firmware and can be used when programming with NXT-G using the LEGO® MINDSTORMS NXT software.

In addition to the tools that I provide to the community, I also have participated on blogs and forums, such as on news.lugnet.com, the old nxtasy blog and forum, and, now, the newly created MINDBoards website at www.mindboards.net, forums.mindboards.net, and blog.mindboards.net. I try to help people learning about LEGO MINDSTORMS when they either have questions about one of my tools or programming languages or generally about firmware issues or hardware problems.



Name: Ralph Hempel
Age: 48
Occupation: Electrical Engineer specializing in Embedded Systems
Nationality: Canadian
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How did you get involved in MINDSTORMS?

When the RCX came out, I was one of the people who, within a few weeks of it being released, cracked the firmware code, and then I made one of the first replacement firmwares – pbLua. Marcus Noga made the legOS firmware and we were all invited to the Extreme Mindstorms panel at Mindfest [1].

After that, I kept in touch with Michael Andersen and I kept showing him updates to the pbForth tools, such as a servo driver, and even a DCC train controller.

He passed this on to Flemming Bundgaard and (I'm guessing here) when it came time to get the NXT ready for release, LEGO contacted a group of known community leaders that had individual specialties. John Barnes had the third party sensor development, Steve Hassenplug and Dave Schilling were builders and robot competitors, and I had lots of firmware experience.

So basically, keeping in touch with LEGO insiders over the

I also have had the privilege of writing a book about programming the NXT using Not eXactly C. It's called "NXT Power Programming, Robotics in C", published by Variant Press. The 2nd edition was released in September of 2009 and is available for purchase from Amazon.com and other online bookstores.

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Interview: Ralph Hempel

By Hispabrick Magazine

years made it possible for the original MUP to participate and grow into the MCP program.

How do you contribute to the MINDSTORMS community?

I have been involved with MINDSTORMS since the early RCX days when I wrote pbLua which I continue to maintain. In 2006, a few weeks after LEGO released the source code for the NXT firmware I had pbLua working on the NXT. I also created the pbForth firmware for the NXT, which allows you to write software that is compiled on the brick itself.

In 2007, I helped Chris Anderson (Editor in Chief of Wired) with decoding raw GPS signals from the Bluetooth port. Although Chris went on to use RobotC in his project, my contributions helped to make the project a reality.

I'm a co-author of a chapter in "Lua Programming Gems" available on Amazon...

I also co-authored a book entitled "Extreme MINDSTORMS", together with Dave Baum and Luis Villa and I wrote a book on Spybotics, another programmable LEGO brick.

[1] <http://www.hempeldesigngroup.com/lego/mindfest/panel.html>

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