

# G.I.R.L. TECH NEWSLETTER #3

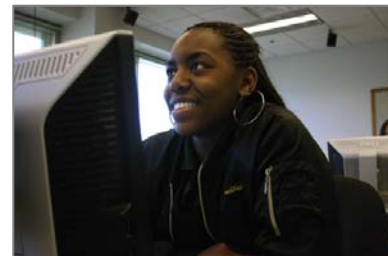
Hello interns and parents, and welcome to newsletter #3! We send these updates every Friday to let you know what's going on in the G.I.R.L. Tech internship program. If you would like to be added to the distribution list, contact Laura Lantz at [lantz@cmu.edu](mailto:lantz@cmu.edu).

## PREVIOUS WEEK IN RECAP

A lot of our activities thus far have focused on brainstorming and design, but this past Monday (March 23<sup>rd</sup>) the interns began programming and mechanical engineering in earnest. Interns on the programming track began learning how to code in Python with introductory exercises and examples, and interns on the mechanical engineering track used the Robotis Bioloids Expert Kit to build and test two robotic arms.



On Wednesday, March 25<sup>th</sup>, we talked about the definition of a robot and went over specific systems of robotic motion: forward kinematics and inverse kinematics. Then we broke out into our programming and mechanical engineering groups to build further on our learning from Monday. Programmers deconstructed a hangman computer game and wrote their own hangman classes in Python. Mechanical engineers modified the robotic arms to better replicate the arm we are using in the Children's Museum robotic painter exhibit, and then learned first-hand how difficult it is to control robot motion using forward kinematics!



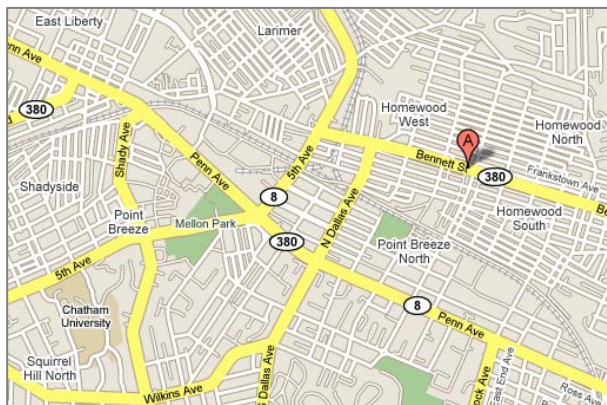
## COMING UP THIS WEEK

Now that our interns have had a chance to focus on either programming or mechanical engineering, it's time to branch out. This coming Monday (March 30<sup>th</sup>) we're reuniting to work on activities that require both sets of skills to cooperate together. We'll continue to improve our robotic arms and use Python and inverse kinematics to make them do cool things.

On Wednesday (April 1<sup>st</sup>) Marek Michalowski of BeatBots (<http://beatbots.org>) is coming to demo Keepon, a small yellow robot used to help children, especially those with developmental disorders such as autism. Keepon exhibits simple social behaviors and has cameras in his eyes and a microphone in his nose that collect information. He has also made appearances on NPR and Entertainment Weekly and starred in his own music video dancing to a song by Spoon. We'll get to interact with Keepon and talk with Marek about BeatBots' work creating robots for research, therapy, and entertainment.



## GENERAL ANNOUNCEMENTS



Congratulations to our intern bloggers of the week, Sasha and Erin! You can see their blog posts featured on the G.I.R.L. Tech website's News page at <http://www.etc.cmu.edu/projects/girl-tech/>. Check out all interns' posts at <http://www.etc.cmu.edu/projects/girl-tech/?q=intern-blogs>.

This Thursday, April 2<sup>nd</sup>, at 5:30pm, the YWCA is having a mandatory parents' meeting to talk about structure and evaluation tools for this program. As part of the meeting we will be there to talk about the G.I.R.L. Tech internship program and answer any questions you may have. Please join us at the YWCA Greater Pittsburgh Homewood-Brushton Center at 7140 Bennett St, Pittsburgh, PA 15208.