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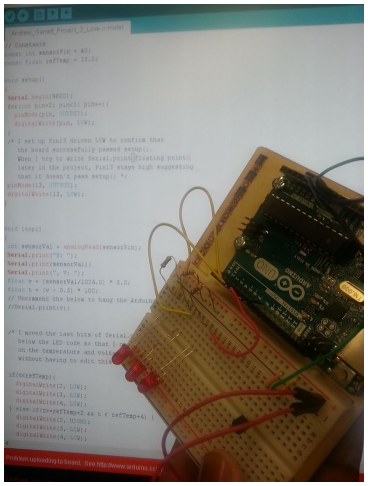
UF Summer Research
7272015

# Andrew's Summer of Research

Over the summer I had the luxury of working with Dr. Juan Gilbert at the University of Florida located in Gainesville, Florida. I was given the task of learning various softwares and hardwares. I was also given the challenge of teaching a class of Middle School students some of the many softwares and hardwares I learned. Doing this answers the scientific question, how can us more underrepresented minorities into the computing disciplines. Target the youth, and underrepresented minority population in the computing disciplines will increase.

My research mentor, Dr. Juan Gilbert, who is the chair of the Computer & Information Science Engineering Department at the University of Florida, is an American Scientist, researcher, inventor, and educator. A role model of diversity in the computing sciences, Dr. Gilbert's success in increasing the number of underrepresented minorities in the computing disciplines have been recognized by professional engineering organizations all around and the United States.

I learn how to use the following softwares and their applications: Arduino, Scratch, HTML & CSS, and Choregraphe. [1]Arduino is a software and hardware that come with a robotics kit and microcontroller board to build technological projects. Arduino comes with a software that allows the user to program the functionalities of the microcontroller board. The software derives from C++ programming language.

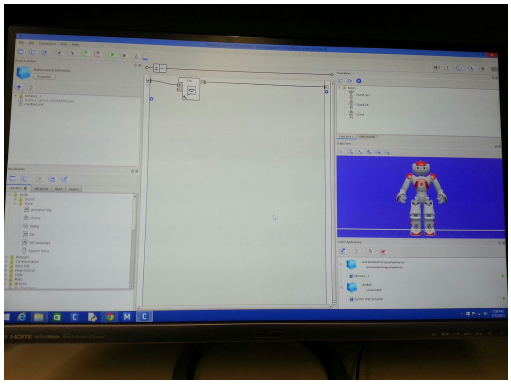


(pictures of Arduino the software & hardware)

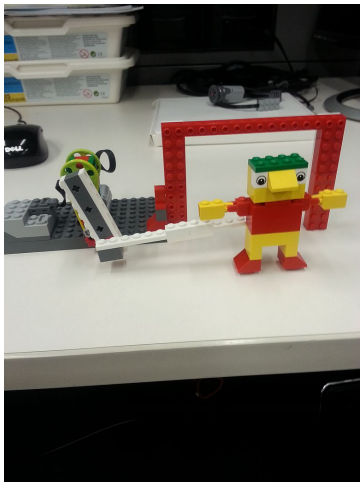
[2]Scratch is an interactive programming language that allows you to create pictures, interactive stories, and games. Scratch is a fun way to introduce programming to the youth. Scratch has capabilities that coincide with LEGO WeDo. It does this by providing an extension that allows you to control the motors and sensors in LEGO WeDo.

I learned HTML & CSS to code and build a website to display and demonstrate my summer research. HTML & CSS coding language is the basics to making a website from scratch.

[3]Choregraphe is a software that was designed and built by the same company the made the NAO robot.  Choregraphe is a software that was build for the NAO robot to control its arms and legs. Choregraphe is a SDK that can also control other NAO functionalities like talking, face memorization, and obstacle detection. Choregraphe is a simple drag and drop software that has python coding abilities to further control NAO conditions.


(picture of Choregraphe)

I learn about some hardwares such as [4]LEGO WeDo and the NAO robot. LEGO WeDo is a simplistic way to introduce individuals to robotics. Similar to your childhood toys, LEGO WeDo challenges you to build a project that can come equipped with motors and sensors. I built a soccer goalie project with the LEGO WeDo and made a program that caused the goalie to slide left to right continuously to stop an opponent from kicking a soccer ball in the goal.


(picture of LEGO WeDo soccer project)

The NAO robot is a humanoid robot. Nao stands about two feet tall and is an interesting and fantastic way to grab the attention of youth and introduce to them robotics.

References:

[1] https://www.arduino.cc/

[2] https://scratch.mit.edu/

[3] http://doc.aldebaran.com/1-14/software/choregraphe/choregraphe_overview.html

[4] http://education.lego.com/en-us/preschool-and-school/lower-primary/7plus-education-wedo

Personal Resources

https://www.youtube.com/watch?v=sDu3d-DuX9A

https://drive.google.com/open?id=1cfHvKw3kG7L2Nix0qvO_UA0RmVJEsk64zpNWslO0r8A

https://drive.google.com/open?id=1P_an-aQe1WzniRMZx9ICaEcaiLCdi-LQMEsRCZ-TiI0