Computer Science Social Network (CS²N)

Seeking Partners!

Carnegie Mellon's Robotics Academy is seeking partners that have cool, engaging computer science activities that they would like to add to the Computer Science Social Network (CS²N) that the Robotics Academy is developing. We are looking to build a continuum of activities that begin with students at the elementary school level and continue through adult hobbyist.

Initial Activities

Our initial set of activities include:

- Robot Virtual Worlds (see back page)
- An Alice Animation Competition
- Computer Science Certifications
- Cognitive Tutor Enabled Training Materials
- MultiRobot Communications Hardware
- MultiRobot Training and Curriculum
- Robotics Training for Competitions

Initial Targeted Audiences

Fostering Innovation through Robotics Exploration (FIRE)

The FIRE project, shown below, is a collaborative project between Carnegie Mellon and DARPA. The FIRE project team is using robotics as a hook to motivate more students to pursue computer science as a career. FIRE student activities will be implemented throughout our Computer Science Social Network (CS²N). In May of 2011, FIRE will have a soft opening of the CS²N pictured above. At that time, we will test the database and back end architecture that allows students to accrue points, earn privileges, and test for certifications; the official launch of CS²N is September 2011. CS²N uses strategies found in the online gaming world to entice students to move from one computer science activity to another. We are seeking partners with computer science related activities that will complement our mission.

Pictured above is an example navigation scheme that a student might use to move from one activity to another.

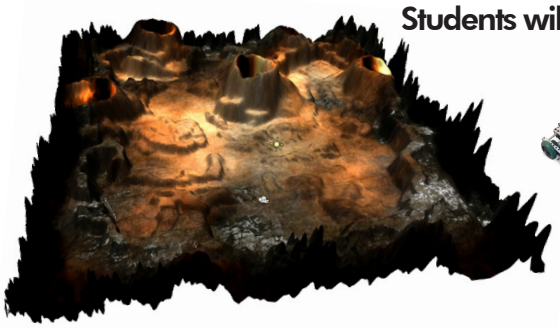
Pictured below is the students trophy room where they can track their progress.

Computer Science Social Network (CS²N)
Contact Robin Shoop for more information - rshoop@cmu.edu - 412-681-7160

Carnegie Mellon Robotics Academy

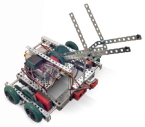
Programming Robots in Virtual Worlds

Carnegie Mellon will release a fully working, downloadable *"Technical Demonstration"* of their new Robot Virtual World (RVW) programming tool to the world on February 9, 2011. The first world takes students to planet H99 where they will be able to program their robots using feedback from encoders, sonar, touch, and compass sensors. The RVW project is designed to blend computer science lessons, engineering design, and gaming to teach programming and CS-STEM concepts.



Pictured above is the Level One world.

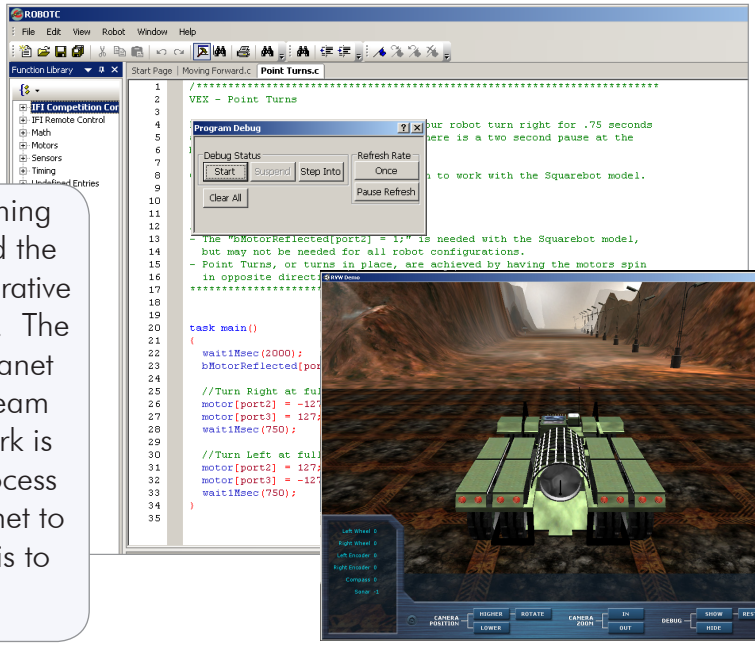
Students will earn points and access new levels as they learn to program



Students will program LEGO and VEX robots during training, but they will also be able to program virtual world machines like the scientist's rover or the flying methane sensor. These vehicles will be programmed using the same ROBOTC IDE that students use when they program their LEGO and VEX robots.

We are also integrating opportunities to program LabVIEW front panels into the RVW. The front panels will be developed using National Instruments free LabVIEW Web UI Builder software. Data fed to the virtual instruments will be derived from conditions in the virtual world as well as from the virtual robots.

The first Robot to the Rescue Computer Programming Game is set on Planet H99. The year is 2050 and the Global Federation of World Evolution has a collaborative research project named H99; short for Habitat 99. The goal of H99 is to place a human colony on the planet by 2099. The planet is being terraformed by a team of humans and robots with the majority of the work is being done by the robots. (Terraforming is the process of deliberately modifying the atmosphere of a planet to make it habitable by humans.) The student's job is to program and manage the robots!



Pictured above is the simulator that will display the robot's behavior to the student. They will be able to zoom in and out and control the camera's angle using this interface.

Pictured at the right is an example of the type of digital display that students will be able to design and program as they play the game. We envision opportunities to develop displays for the greenhouse, fuel stations, vehicles, the weather, and any other game element that has constantly changing data.