RSSC Meeting 1 – 12 – 08

Class
Alex on Laser Scanners for SLAM

Two Scanners the SICK LMS 200 and the Hokuyo LM04 were contrasted. Alex had previously demonstrated software he had written for the LM04 to develop a 2D distance map.

Both sensors use a modulated infrared beam which is directed to a rotating mirror assembly. The beam passes out of the sensor, reflects off a surface and back to a photodiode inside the assembly. The phase difference between the initial beam and the reflected beam allows the distance to be determined.

Alex also discussed applications of laser scanners for localization and mapping. Optimal mounting for the sensor seems to be at about 1 meter above the floor at an angle of thirty degrees below the horizontal (Toward the floor). This allows the sensor to sweep out approaching objects and get multiple image returns.

Business Meeting:
Jim Ubersetzig officially took opened the meeting as new president. He gave a talk about

how differential drive has been the primary method of locomotion for RSSC robots for a fifteen year period and that the robots the club has demonstrated have not evolved. He suggested the necessity of arms and hands for robots. He suggested that new competitions be created that would require the use of arms and hands.   He also encouraged an alternative session for beginning robot builders. After much discussion of ideal times, it was decided that Walt Martinez would bring LEGO kits for the March meeting and Martin Mason would encourage students to attend a session for beginners from 9 to 11 AM.

Jim mentioned that the website needs updating. Look for changes in the website this month.

Contests:
The Feb meeting with feature a sumo competition. This is an outcome of the Sumo School to be held for the next four Fridays at Mt. Sac. The Sumo School will culminate in a robot for this competition. Competition guidelines are 8 inch square 1 kg form factor. Rules will be posted on the mailing list.

Talks:
Feb: David Stefan is scheduled to give a talk on embedded systems
March: Martin Mason will give a talk on how to fabricate a PCB

Treasurer report :Ron Rose

A bank account has been setup for RSSC. After considerable discussion dues were set at $20/year for members and $5 for students. Any student that brought a robot to show at the club would be given a free membership (Various members would sponsor) Membership conveys voting rights to the member.
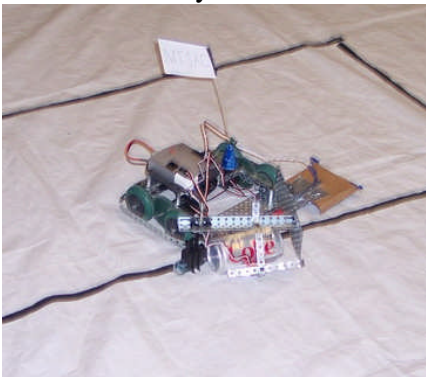
Competition:
RSSC Can Following Competition (Robots must navigate to pick up a soda can, pick it up, and then navigate back to their initial position.
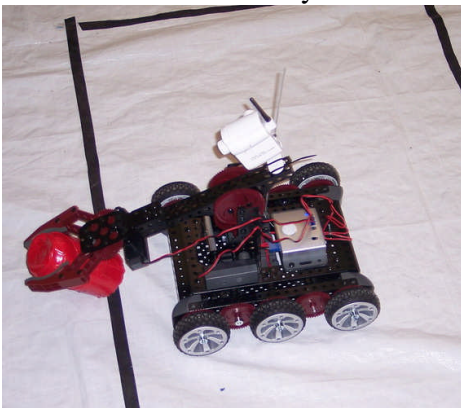Jim Ubersetzig entered CR
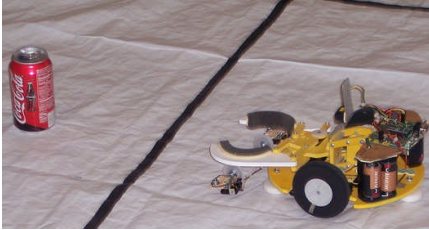
German Monroy and Ernesto entered DeLaGhetto

Martin Mason entered eyebot

DeLaGhetto received first place, CR came in second place and eyebot came in a distant third.

Show and Tell:

- Bruce discussed Lisp Programming and attempting to create more interactive behavior for the Leaf Project.
- German Monroy talked about the construction of DeLaGhetto.
- Brian (The Tin Man) demonstrated the RoboNova and has some available at cost! He also discussed this year's First robotics competition. He is working as a mentor for a local team.
- Steven showed
    - the ASUS EEE microlaptop. A ultrasmall form factor laptop for around $350 that might be perfect for a robotic controller. The wikipedia page has much more info.
    - The 3DV Z-Cam camera which uses an IR emitter array and an IR sensitive camera to generate a 3D image (Where brightness ~ distance)
    - Wowwee has a plethora of new products including a female robosapien and the rovio, a internet enabled camera on a platform.
    - Spike is a new robot by Mechano that is an internet controlled camera and Skype phone.
    - The IRobot ConnectR is yet another internet controlled camera platform
- Martin showed his VEXplorer based robot that uses computer vision to find a red can and then the changing geometry of the can to trigger the gripper. He also showed using a Sorbel filter to pick out the lines on the course. The Vexplorer was modified to allow computer control using a picaxe microprocessor to interface a serial stream to the PPM required by the RC transmitter. More details are at profmason.com
- Don announced that Rusty Sweikart former NASA astronaut will be speaking at Wilshire Auditorium Feb 5th at 7Pm on robotics and asteroids.
- Sepehr from the Cal Poly Pomona Robotics Club announced that the club had formed and had several project underway including a line painting robot and an entry in the robotic submersible contest. He urged people interested in helping the club to contact him at CPPROBOCLUB@gmail.com

Meeting Adjourned at 4:04 pm