AAAI–2000 Robot Building Lab Call for Participation

Seventeenth National Conference on Artificial Intelligence / Twelfth Innovative Applications of AI Conference

Austin Convention Center, Austin Texas ■ July 30-August 3, 2000

Sponsored by the American Association for Artificial Intelligence

For years at AAAI conferences I've seen excited participants from the Robot Building Lab. Clearly they were having a terrific time. Finally at AAAI-98 I decided to treat myself and give it a try. It turned out to be the most fun I've had playing with Legos since I was five! Now that I've actually helped build a robot, I no longer feel like so much of an imposter at Robotics Institute faculty meetings.

> *- Jack Mostow,*
> *1998 AAAI National Conference Cochair*

The 2000 AAAI Robot Building Lab will be held July 30 – July 31, 2000, Austin, Texas. At this year's AAAI Robot Building Lab, participants will spend the day learning about how AI can (and can't) be integrated into the world of mobile robots. Most of the day will be hands on: building and programming small mobile robots to do a variety of tasks. Much of the current AI research deals with the actions of embedded agents. In this course it will become apparent that simulations of an agent's environment are often inadequate for effective evaluation of systems. The RBL will give the attendees the necessary information to start embedding their systems in physical agents—mobile robots that can interact with realistic environments.

Material Covered:

- Realistic versus idealized robots
- Major components of robot systems
- Sensor and effector integration
- A crash course in behavior control programming
- Everything an AI researcher needs to know about PID control
- Vendors and suppliers for getting robots into your lab or home

This year's kit will include **two processors**, allowing each group to create a duo of robots to work cooperatively. Functional mechanical modules will be available from the start. Also new this year will be the inclusion of pneumatic actuators in addition to motors and servos. Participants will be able to spend their time designing and programming the robot, with only a bare minimum of LEGO-hacking to get their robots to move reliably. (Plenty of LEGOs will be available for those who want to LEGO hack).

The RBL will be structured as follows. We'll begin with a brief tutorial on sensors, effectors and robot capabilities to get everyone up to speed; then comes the actual robot building. Throughout the day there will be a series of short tutorials, both for individual teams and for the group as a whole, on particular aspects of robot building and programming.

The next day, all the robots will be completed and then displayed in the arena to show off their special capabilities and to compete head to head in a contest of speed and intelligence. This exhibition will be open to all of the conference attendees.

The goals of this lab event are as follows:

- Give all participants exposure to the intricacies of melding AI and robotics.
- Show the value of performing AI experiments on physical devices
- Familiarize the participants with the current robotic experimental technology
- Give everyone a chance to play with AI that interacts with the physical world.

Target Audience

This lab is aimed at AI researchers, practitioners and educators who want to move their systems out of simulations and into the physical world. A basic understanding of programming languages will be assumed.

Details

The RBL will take place all day Sunday and Monday July 30-31, 2000. The principal instructor will be David P. Miller. This lab is being organized for AAAI by KISS Institute for Practical Robotics (www.kipr.org). For more information, send e-mail to rbl2000@kipr.org

General Information

For general information about AAAI-2000, please contact the American Association for Artificial Intelligence:

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