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ArtBots: The Robot Talent Show

By **Philip Galanter**

On July 12 and 13, 2003, the second annual international *ArtBots: The Robot Talent Show* took place at EYEBEAM Gallery in New York City. Produced by Columbia University's Computer Music Center and *ArtBots* Director Douglas Repetto, the exhibit featured 22 artists and groups from six countries.

Over the two-day run, there were more than 2,400 visitors, and *ArtBots* garnered significant international, national, and local coverage in print, on television and radio, and on the Web. (A number of website URLs for individual artists, sponsors, and press coverage are available at the event's main site: <http://artbots.org>.) I co-curated the exhibit with Columbia's Repetto, and Jenny Lee of the Pratt Institute. There were also several current and former NYU faculty and students involved as artists.

The notion of *ArtBots* as a robotic talent show is intended to imply a certain lightheartedness in celebrating robotic art, while at the same time acknowledging the rapid rate of development in this field. Robotic art can include machines that draw, sculpt, play music, dance, and perform, as well as other artistic activities not so easily categorized. In some cases the ArtBot makes the art, and in other cases the ArtBot is the art. Both an Audience Choice prize (with each visitor getting a vote) and a Robot's Choice prize (with each artist or team getting a vote) were awarded.

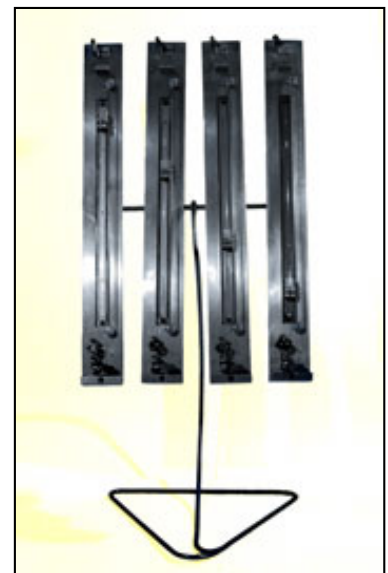


Figure 1. LEMUR's "GuitarBot", winner of the Audience Choice award.

In curating the show, we tried to allow for very broad notions as to what a robot, and what art, is. Originally, the term "robot" came from the Czech root for "labor" or "drudgery", and indeed the original idea was to off-load tedious work to humanoid mechanisms which could serve as slaves without posing an ethical dilemma.

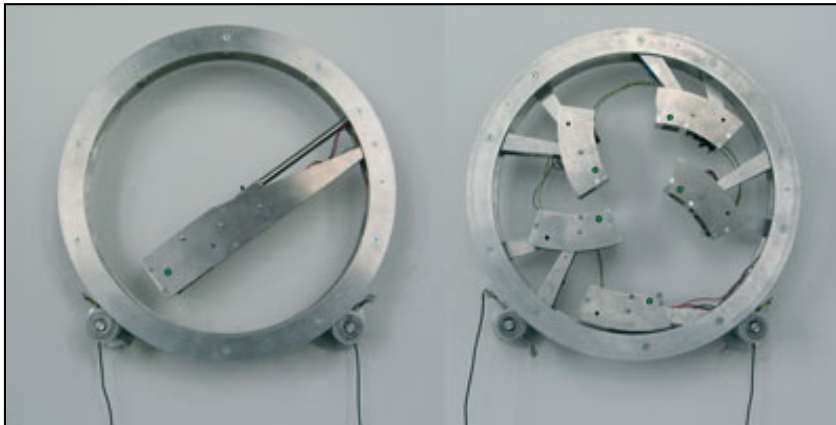


Figure 2. "micro.adam" and "micro.eve", by Julius Popp.

In the case of *ArtBots*, the emphasis is more on play than work, although like most art, it can be serious play indeed. When thinking about robots, we gravitated towards systems that moved in non-trivial ways (no "my printer is a robot" please!), and systems that exhibited some degree of autonomy. It is notable that most so-called robots featured on the popular BattleBot-style television shows exhibit little autonomy, and are in fact merely radio-controlled cars fitted with armor and weapons. Not surprisingly, ArtBots are usually a bit smarter than that!



Figure 3. David Bowen's "50 Drones".

Some of the ArtBots were only vaguely robotic in the popular sense, but commented cleverly on the field in an engaging way, or encouraged an expanded appreciation of what a robot might be. One of the goals of the show was to appeal to a non-technical audience, and especially children, while at the same time invoking some deeply philosophical issues. What is creativity and authorship? Can a machine think? What is consciousness? These questions and more were in play despite the cybernetic carnival atmosphere of the event.

The Audience Choice award was won by "LEMUR: the League of Electronic Musical Urban Robots". A rather large team, based in Brooklyn and led by Eric Singer, created and displayed a number of systems, performing both as individuals and as a group. The centerpiece was "GuitarBot", a set of four beautifully machined slide guitars that play under computer control with great precision and expressiveness. In addition, the more anthropomorphic "ShivaBot" quietly plays drums and chimes, the "TibetBot" plays Tibetan prayer bowls, and the "!rBot" (pronounced chik-r-bot) plays a system of shakers on long, undulating, plant-like flexible rods.

In sharp contrast to this large team approach, the Robot's Choice award was won by Julius Popp, an individual artist from Germany. His elegant works "micro.adam" and "micro.eve" are

finely crafted wheel-like mechanisms that are not programmed overtly, but rather start from scratch and learn to rotate themselves on their wall-mounted posts. They do this by learning to shift their center of gravity by moving actuators and weights within the wheel. As wall-mounted sculpture, "micro.adam" and "micro.eve" present strong physical metaphors for self-discovery of both mind and body.



Figure 4. "Automated Architecture Robot" by Ira Spool and Anna Tsy-pin, uses water to sculpt architectural models out of large blocks of ice.

David Bowen's "50 Drones" creates an ever-changing jellyfish-like sculpture, with 50 tiny electric wheeled vehicles interacting as they randomly move about at the end of 10-foot long power cord tethers. "Automated Architecture Robot" by Ira Spool and Anna Tsy-pin sculpts architectural models of possible dwellings out of large blocks of ice (see Fig. 4). This is done by selectively melting the ice with the release of multiple streams of water. Last year's Robot's Choice winner, Stefan Prosky, contributed "BabyBott", giant baby bottles that waddle along the floor and interact with people by making sounds when picked up and held.

"Chair de Poule", by Brad Todd, was one of several tele-robotic works. Audience members could interact via the Internet with a physical construction in Montreal made of books, pins, dust, and the hair of the artist's late father. A system of precisely-machined arms and motors, "Drawing Machine 3.1415926 v.2", by Fernando Orellana, harnesses the science of deterministic chaos as well as sound input to create finely detailed 4' by 4' pen and ink drawings (see Fig. 5). "Drums of War", by Rahul Bhargava and Mira Friedlander, maps regional news reports automatically gathered from the Internet into drum performances that correspond to the relative levels of violence for a given date and location.

Artists Dan Paluska, Jessica Banks, and jackbackrack created "Fotron2000 (FOE-tron-too-THAU-zin(d))". This photobooth-like system uses high-tech image analysis algorithms to generate corresponding paths and steer a tiny lamp-wielding motorized car. The moving car is, in turn, photographed over time, resulting in a unique neon-looking portrait.

"Happy Feet", by Stephen Turbek, presents a set of shoes which tapdance on their



Figure 5. "Drawing Machine 3.1415926 v.2",
by Fernando Orellana.

"MEART—The semi-living artist" is a somewhat controversial cross-continental effort by the Australian SymbioticA Research Group, in collaboration with Steve Potter's Lab at the Georgia Institute of Technology in Atlanta (see Fig. 6). In this installation, a digital photograph taken at the New York exhibit was sent via the Internet to stimulate a culture of living neural cells in Atlanta. The response of those cells was then sent back to the exhibit in New York and used to drive a system of robotic arms that draw a 'portrait'. Having been featured in both science and art news media, and using actual living nerve tissue, "MEART" pushes a number of social and bio-ethical hot buttons.

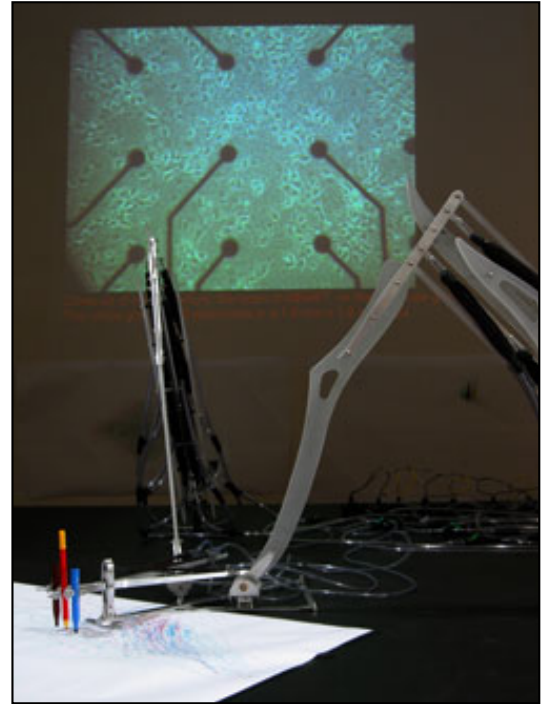


Figure 6. "MEART", a controversial ArtBot.

"Monkey on Your Back", by longtime robot artist Kal Spelletich and his group SEEMEN, is a wearable device that extends one's organic motor skills and abilities with robotic arms and hands, and a robotic tail. Jason Van Anden's "Neil" is a sculptural robot that interacts with observers by moving its large, head-like video monitor, and registers emotion by varying its display of a cartoon-like mouth. Twins Leesa and Nicole Abahuni's "re-capacitance" utilizes a clear drawing table and robotic drawing machines, along with real-time interaction by participants using colored pens, as a platform for cultural exchange.



Figure 7. Stijn Slabbinck's
"Scratchrobot".

"Robots Like H₂O: Photosynthesis Perpetual Motion Machine" is a work by Futurefarmers, a.k.a. Amy Franceschini and Michael Swaine. It consists of a pair of plants on a mechanical pedal device that will actually move forward a fraction of an inch per week. This work is a softer/gentler "MEART", stimulating questions about the cyborgian interface between the mechanical and biological.

Stijn Slabbinck's "Scratchrobot" is a robotic turntable DJ artist that creates scratch performances based on the e-mail people send to it. The resulting sound is digitized and then returned to the writer via e-mail. "Shootings (After Francisco de Goya)" by Han Gene Paik is a haunting installation of children's dolls retrofitted with

animatronics. "Slowscan Soundwave", by ArtBots Director Douglas Irving Repetto, is a wooden frame with delicate plastic strips that oscillate to illustrate nearby sound, which is detected with a hidden microphone and translated into motion via digital signal processing.

"Small work for robot and insects", by the collective Host Productions, pairs a collection of actual insects (crickets) with a larger robotic insect. The robotic insect attempts to communicate by detecting the chirping of the nearby crickets, and by using digital neural network technology to trigger various actuators and lights.



Figure 8. "Small work for robot and insects" by Host Productions.

"Tribblation" is a work by Josh Lifton, Michael Broxton, and Joseph Paradiso from the Responsive Environments Group at MIT's Media Lab. The only work at *ArtBots* 2003 that didn't move, Tribble (The Robotic Interactive Ball-Based Living Entity) is a highly responsive object that exhibits and explores the sensory possibilities of skin and touch in robotics. John S. Lathram III's "The Watchers—Televisuality for Xenia" is another hybrid that combines organic forms and technology to raise social and political concerns. His plant-like constructions use computer and video technology to detect, track, and monitor the audience at the exhibit.

An annual event in its second year, the 2003 *ArtBots: The Robot Talent Show* was a significant expansion over the previous year. Interest in this and similar exhibits has been growing, and it seems likely that next year's *ArtBots* will present another round of progress in the aesthetics, meaning, and technology of robotics. For more information about this event, visit the *ArtBots* website, <http://artbots.org>.

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