

Nicholas Stedman

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ADB



ADB is a snake-like, modular robot designed for haptic interactions with people, writhing, wriggling, twisting, and squeezing in response to how it is held and touched. It can be used to explore intimate and emotional relationships with technology through direct physical contact. *ADB* adapts to and reciprocates the energy one puts into it through one's body. When touched, it comes to life. When stroked, it seeks more of you. When harmed, it defends.

ADB. © 2008 Nicholas Stedman.

ADB is composed of a series of identical modules that are connected by mechanical joints. Each module contains a servo motor, a variety of sensors, including capacitive touch sensors, a rotary encoder, and a current sensor to provide information about the relationship to a person's body. The electronics are enclosed within plastic shells fabricated on 3D printers.

For the past decade, Stedman has been designing and fabricating machines, combining ideas and techniques drawn from both visual arts and engineering. He relates closely to the practices of "Device Art" and "Making." Much of his work involves writing software, designing mechanisms and electronic circuits, and working with materials, while at the same time exploring the social, environmental, economic, and civic impact of technologies—those he produces and those he employs.

In particular, Stedman's artwork pertains to embodied communication and social robotics. He makes robots that engage people in non-linguistic, haptic interactions. By eliminating symbolic communication such as language or even gesture, and focusing instead on direct bodily engagement, the objective is to stimulate sensations, and perhaps emotions, in human participants. The aesthetic experience is comprised of the tangible feelings which the machine produces through physical interaction, as well as the ideas and associations that are evoked through the unusual experience of engaging in a sensual relationship with an artificial entity.

The robots are composed of assemblies of haptic-expression modules which, like pixels, can be coordinated to render a representation, in this case through kinetic deformation against a person's body. The modules are built from a variety of sensors, motors, and other electronic and mechanical components, all enclosed within CNC fabricated shells, which protect the technology and determine the outward appearance. A wide variety of control programs are possible with such architecture, and the modules are designed to be easily reprogrammed in order to support explorations in software. While Stedman is most interested in decentralized machine learning techniques (including genetic algorithms and artificial neural nets), the control software he uses is that which affords the desired behavior with some economy.



ADB. © 2008 Nicholas Stedman.

Nicholas Stedman is an artist and device-maker whose projects have ranged from machines and interactive installations to performance technology and software. In recent years, he has focused on building robots which physically interact with people. Such devices have been enacted in galleries, festivals, and other public forums where people can examine and interact with them. Stedman graduated with an MFA from the State University of New York at Buffalo in 2008 and now teaches digital media at York University and Ryerson University in Toronto. His artwork has been showcased at several international festivals including Future Physical, Ars Electronica, and ISEA.

Stedman's collaborator, Kerry Segal, is a performer and community artist. She explores the sensorial experience of embodiment through theatre and dance, and by involving participants in ad hoc performances that stretch their boundaries. She works with Nicholas Stedman, performing with his robots, and helping others to both explore the machines and reflect on their relationship to technology on an intimate and sensual level. Segal lives in Toronto, Canada where she works with Jumblies community arts group. Her works have been shown in various Canadian and international festivals, including fFida, Rhubarb, and CAFKA.