

Bd: A Sound Installation with Swarming Robots

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Biographical information

This project is accomplished by "Cachi.CoChi. Chachi.Cochi is an art unit consisting of three members. These members are creators or researchers who study plural field such as computer music, media design, and computer-science. The purpose of Cachi.Cochi is to combine witness and high-technology with complex-system paradigm. We utilize a simple idea and system to exposure interesting aspects in real-world.

Description of Piece

"Bd" is a sound installation which generates sounds through interactions among plural agent-robots.

The robots behave as metaphor of lives. The agent-robots were developed as artificial insects. They have shape of insect and they swarm to seek food. Therefore each robots is mounted a microcontroller and sensors(CDS, IR). Robots are programmed to seek/chase and eat food. Their food is "light". They always seek lights with their sensor. If they find a light, they chase to eat it. An agent flashes LED on its body when eating. The flash color and position are tracked by a CCD-camera mounted on the overhead. And the sound generator, which on outside PC, generates sounds according to the tracking information.

The robots communicate with each other, while eating food, male robots flash blue lights and female robots flash red lights. When a robot faces another same-sex robot, it will chase away the other, while on the other hand, when it faces an opposite-sex robot, it will perform a courtship dance.

In addition, Users can give the agents lights. Users place red paste or red LEGO blocks on scan-board as food, then the shapes are displayed below the agents. The shapes are expressed as lights by LCD, which is placed on the floor under the robots. The robots chase and eat the lights when find it.

The artificial insects interact with light, users and each other. In consequence, the installation self-organizes rhythm and pitch.

