

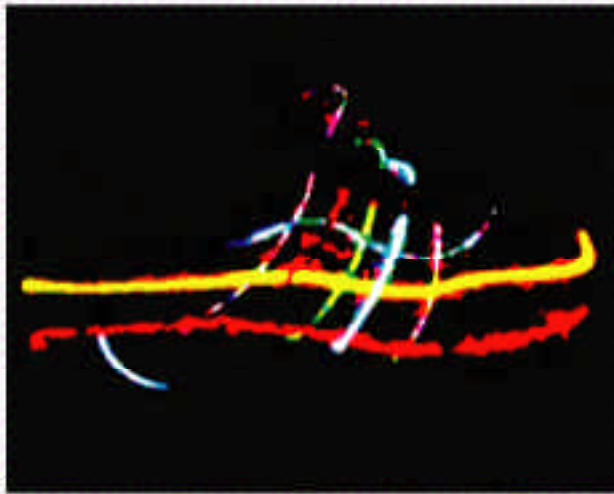
Class Physical Computing II

Project ilL shoes

Names Megan Phalines, James Powderly

Audience Party people, club kids, dancers and voyeurs, blinky culture. Anyone who moves in the dark.

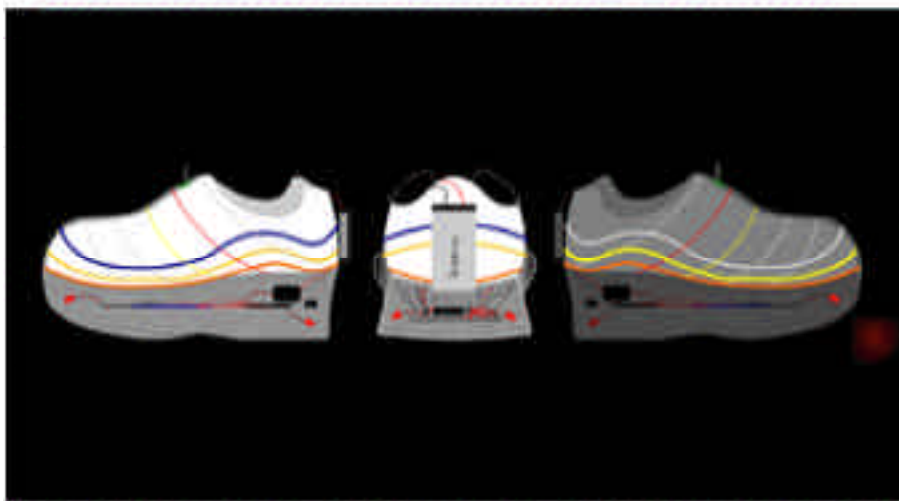
Description ilL shoes can sense and remember the intensity of a dancer, as well as interpret information from a wireless network. This data is then mapped and sequenced onto bands of luminescent wire to create a vibrantly-colored, dance-powered light show...below the knees.



That is so ilL!

Overview

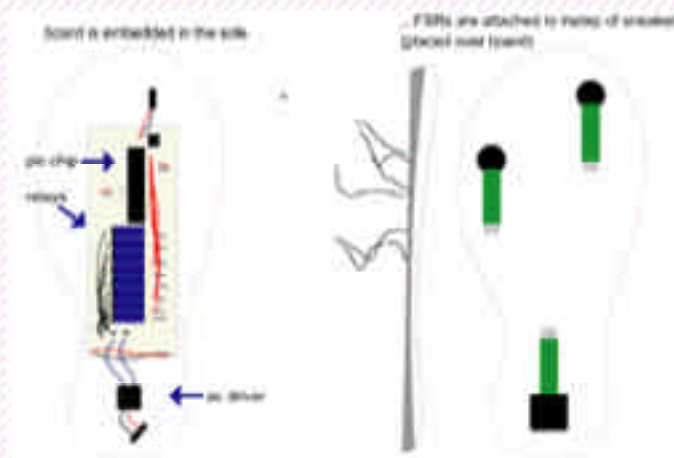
It is five thirty in the morning and the sun is rising behind the New York City skyline. You are riding in the back of a cab on your way home from a night of dancing. You're alone. You're with your lover. You just got in a fight. You cant stop laughing with your friends. You are exhausted but still tingling with adrenaline. Your feet hurt. Your body is still cool from sweating off heat. The energy you've created dancing lasts long after your feet cease to move. A representation of this type of physical energy, this exformation your body silently communicates, is the aim to which the ilL shoes aspire.



ilL in three perspectives

Prototype

The first iteration of the shoe was designed for rapid prototyping and reconfiguration. This "ilL" was built on top of an existing shoe. in future versions, we will construct an entire shoe from scratch, hand-etch the PCboards and use 400v triacs instead of relays to make the circuit smaller, as well as embed all of the electronics in a transperant rubber sole. In the current prototype, only one shoe is networked. Future "ilL" iterations might include peer and group connectivity. One could imagine an entire dance floor of shoes creating light, sound and video interactions in a networked environment.



the inner life of the shoe

System

ilL shoes consist of Force Sensitive Resistors, a microprocessor, reed relays, EL-wire, RF transmitter and receiver, as well as a java MP3 Streamer. In one shoe FSRs are attached to the instep of each sneaker. These analog sensors measure the shifting of weight as the dancer moves. The other shoe receives user data, via RF, from a MP3 streaming server. Both datasets are then calculated and stored over time by a PIC 16F877. Eight relays are individually triggered by the PIC to allow a current from a 9V AC/DC invertor to "light" varying lengths of electroluminescent wire. The dancer's intensity over time and the total number of MP3 clients is mapped, on their respective shoe, to several states of complexity, speed, order and entropy in the sequencing of the lights.

itp Winter Show December 2001

Tom Igoe. Instructor