Stretchable Music with Laser Range Finder

MIT Media Lab

Stretchable Music with Laser Range Finder combines an innovative, graphical, interactive music system with a state-of-the-art laser tracking device. An abstract graphical representation of a musical piece is projected onto a large vertical display surface. Users are invited to shape musical layers by pulling and stretching animated objects with natural, unencumbered hand movements. Each of the graphical objects is specifically designed to represent and control a particular bit of musical content. Objects incorporate simple behaviors and simulated physical properties to generate unique sonic personalities that contribute to their overall musical aesthetic. The project uses a scanning laser rangefinder to track multiple hands in a plane just forward of the projection surface. Using quadrature-phase detection, this inexpensive device can locate up to six independent points in a plane with cm-scale accuracy at up to 30 Hz. Bare hands can be tracked without sensitivity to background light and complexion to within a four-meter radius.

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