

# An Interactive Poetic Garden

The garden is the symbol of man's control over nature. *An Interactive Poetic Garden* attempts to bring the computer into the garden in harmony with stone, water, and plant materials. The computer is used to drive a video projector, creating the illusion of text floating on the surface of the water.

The interactive poetic garden design is based on a square divided up again into a series of smaller squares, a design which can be traced back to the earliest formal gardens of Persia<sup>1</sup>. Water enters at the back of the garden and cascades down a series of pools until it reaches a large square one. Words appear to tumble down the rocks along with the water, calmly pull themselves through the shallow pool, and then magically reappear at the top of the stream along with the water.

Sitting on the edge of the pool—but without getting your hands wet—you can interact with the words through a special hand interface letting you stop the word flow, push and pull words, and over time change the content of the words themselves. These physically modeled words are projected from above onto the rocks and coral. The computer computes the word image as well as managing the camera-based input device, which lets you control the flow of words.

There are obvious and subtle differences in fluid dynamics and typographic layout. It was our goal to have the words appear to flow naturally along with the water as if they were leaves floating downstream. An important design concern was to have the words maintain an orientation and interletter spacing such that the words are legible most of the time. We decided on a mass/spring system in which each letter *of the word* is a point mass connected to its neighbor letters with springs. Additionally, the first and last letter of the word is connected with a separate spring that pulls the letters of the word into a line. A force is applied to the first letter of each word that propels it through the stream. This force is defined as a stable vector field that is designed to match the real water flow through the garden as well as appropriate forces from the input device.



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## References

1. Moore, Charles W., Mitchell, William J. and Turnbull, William. "The Poetics of Gardens." The MIT Press, Cambridge, MA, 1988