

An Interactive Poetic Garden

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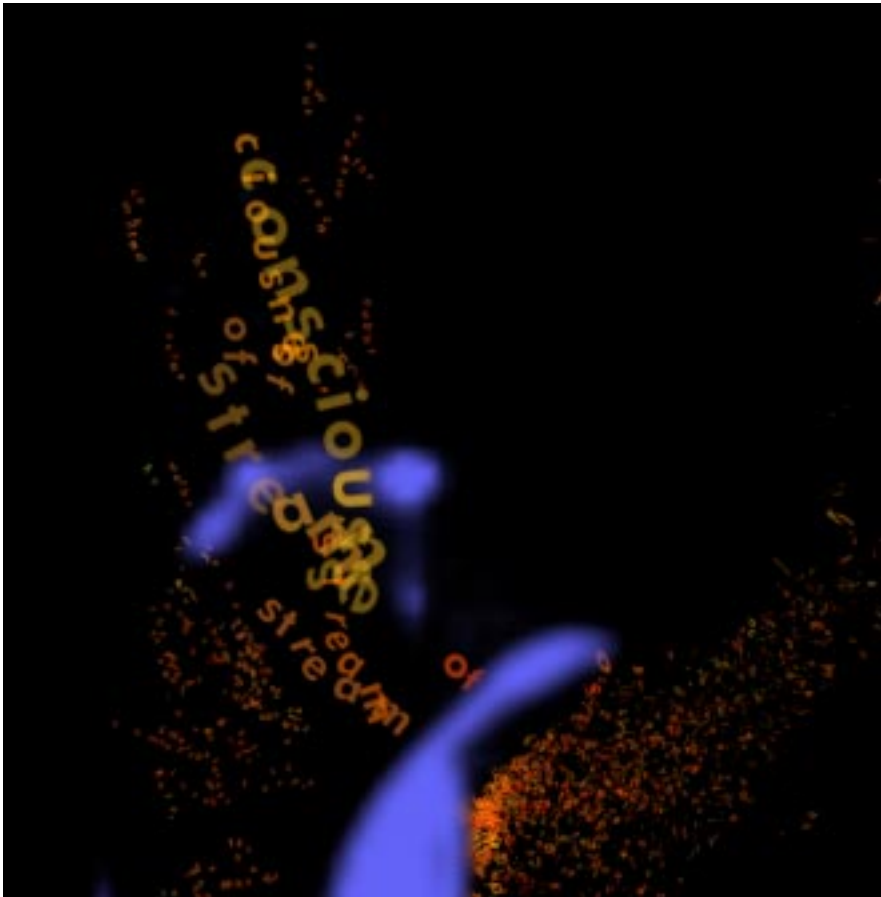
The interactive poetic garden is literally a fountain of words. Water flows briskly down a series of cascades into a glowing pool. A tangle of words projected on the surface of the pool float like leaves in a stream. Sitting on the edge of the pool—but without getting your hands wet—you can control the flow of words, blocking or stirring them up, causing them to grow and divide into new words that are eventually pulled into the drain, then pumped back to the head of the stream, only to tumble down again. The garden is one of the experiments underway in the Media Lab's Aesthetics and Computation group, under the direction of Professor John Maeda, working to sculpt computational media into new expressive forms.



The garden is the symbol of man's control over nature. This project 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 as it flows through the garden.

Although it measures only six feet square, our garden contains all of the elements of a classical garden: flowing water, river stones, bamboo, and a bench for people to sit. The garden design is based on a square recursively divided into a series of smaller squares, a design which can be traced back to the earliest formal gardens of Persia. Water enters at the back of the garden and cascades down a series of pools until it reaches a large square pool. This larger pool is lined with crushed white coral and here the water moves slowly until it spills out the back edge. 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. The words mimic the physical behavior of objects floating in a real fountain. The person sitting at the bench can interact with the words through a special hand interface letting her 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 the person control the word flow.



Initially, we wanted our garden to be a place for meditation. We also wanted people to be both able to affect the overall content of the words as the circle through the garden, as well as influence the dynamics of the digital content. We called our initial installation *Stream of Consciousness* because we hoped to evoke the fluid contents of conscious memory.

The fountain was designed so that the projector could digitally augment the water flowing through it. Then custom software was written to connect letters of words together with springs and then push them through a vector field modeled after the actual flowing water. This creates the illusion of words flowing through the stream. A special liquid interface was integrated into the garden to allow the person sitting at the bench to control the word flow. The software was updated to reflect the position of the hand on the interface with a blue glow, and the words were programmed to react and create a variety of related words when selected.



The garden is built with an SGI O2 workstation, poplar, copper, river stone, a video camera, a bladder of soy sauce and bamboo. All software was custom written in C++ by Small & White.



Tom White is a masters candidate at the MIT Media Laboratory, working in the Aesthetics and Computation group under Professor John Maeda. His work focuses on creating new ways of communicating with computational media, often through the design of new hardware devices. His masters thesis centers on a new family of interfaces known as Liquid Haptics, and the *Stream of Consciousness* uses a Liquid Haptic device as its way of allowing people to interact with the flowing words.

More information about Tom and his present research can be found at <http://tom.www.media.mit.edu/>

David Small is a doctoral candidate at the MIT Media Laboratory where his research focuses on the display and manipulation of visual information. This will be his third degree from MIT. He began his studies of dynamic typography in three dimensional landscapes first as a student and then a colleague of Muriel Cooper, founder of the Visible Language Workshop. The design of complex information environments has led him to construct novel physical interfaces for manipulating virtual objects.

His work has appeared in *Scientific American*, *Print*, *Communication Arts*, the *Atlantic Monthly*, *ID* magazine's 42nd Annual Design Review and the book *Information Architects*. He has designed interactive information environments for such companies as IBM, LEGO and Nike, Inc. You can also see his work at <http://www.media.mit.edu/~dsmall>