Imagine a scene: in a darkened room a moving image is projected onto a large screen. In front of it, several people are moving rapidly in different directions, waving their arms and simultaneously watching the screen. They might be laughing or chatting to one another or quietly observing the shapes, colours and sounds that are continually changing as if in reaction to the movements of those present. As a matter of fact that is exactly what is happening. In today’s world of art and technology this is an interactive or ‘participatory’ art experience. Together, artists and technologists have created spaces in which infra–red sensors detect people’s movements and by detecting the movements in the space, a computer generates visual images and sounds which are displayed so that everyone can see the artwork as it evolves.

Experiments in art that involve audience participation have been taking place for some time and, because they subvert conventional expectations about the nature of art, they can appear in unexpected quarters and sometimes in disguise. The Millennium Dome of the Year 2000 in London received extensive media coverage and was the butt of many jokes. Some things, however, escaped press attention. One, in particular, is an interesting reflection on our current ideas of what is art and what is play. Few of the thousands who crowded into the Play Zone realized that the games they were enjoying were originally experiments in art. The innovative art and technology projects that gave rise to the Iamascope were direct descendants of Cybernetic Serendipity, the groundbreaking computer art show of 1968.

Interest in play and games is now a common theme in art. It might take the form of a sculpture that invites touching or climbing, as well as viewing, or a community project initiated by an artist, but created by people living in the same building who record their daily experiences in text and images. There are even computer games designed by artists. The link between play and art is participation. Participation in interactive art brings with it the kind of engagement in the creative process that is normally denied the art viewing public. Interaction is central to art practice today but is not part of conventional gallery culture. The new art and technology experiences do not necessarily fit comfortably into familiar cultural contexts. Being in interactive spaces is engaging and interesting. Children and adults too can have fun with this kind of experimental art. It is one example of the new forms and the new audience relationships that are developing at the intersection of art and technology.
This book is an exploration of creative practice in art and technology. It brings together artists, technologists and researchers who have written about emerging correspondences between virtual and physical worlds, between human and machine processes, between abstract concepts and their physical realizations, between music and visualization and between film and painting. It is a story of new visions and new forms.

Digital art is not always recognized by the conventions of traditional art culture. It has a different character and form that means it is not necessarily reliant upon the usual outlets for artworks such as the public and commercial gallery system. The digital world lends itself to new modes of dissemination and, indeed, many of the practitioners are attracted to it for that very reason. The Internet, the vast system of computers that form a communicating network throughout the world, has opened up many access and delivery options for art.

The book arose from research into the intersection of art and technology through a series of artist-in-residence projects. Artists worked with technologists to develop new artworks whilst researchers gathered information in order to learn as much as possible about the creative processes involved. A practice-based action research approach was used to investigate the creative process in a real context and as it takes place. One aim was to learn how to evolve strategies for developing responsive environments for art and technology innovation. We learn that creative practice offers new challenges and inspirations for the technologist as well as the artist and that artist and technologist need to find imaginative ways forward together if they are to realize their ambitions and gain mutual benefit. Most important, successful collaboration involves developing effective and personal partnerships that sustain creativity over time.

There are significant changes in art practice taking place as a result of the potential that digital technology offers. Artists are facing considerable demands upon artistic concepts and art making skills alike. It is those very challenges that make it exciting. Digital technology can perform a number of roles in art practice: it can act as an aid to the artist by making multi-dimensional visualizations of an image; it can perform a direct role in the artwork itself by controlling movement or sound or a combination of elements; it can carry out instructions to create the contours and configuration of a work by generating instructions for laser cuttings or high quality screen-printing. Some of the artists represented in this book combine all these roles of the technology in their work. All are using the unique characteristics of digital technology to advance their art practice. This collection of experiences and viewpoints provides a picture of this changing world as it is taking place at the start of the twenty-first century.