

# Preface

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This book contains the foremost papers from the Cambridge Workshop on Universal Access and Assistive Technology (CWUAAT) held at Fitzwilliam College, Cambridge, in March 2010. This is the fifth of a series of workshops stemming from Inclusive Design that are held every two years in alternation with the Royal College of Art's INCLUDE conference.

The workshop theme, *Designing Inclusive Interactions*, responds to the recent changes in the research landscapes in the fields of Human Computer Interaction, Computer Science, and Healthcare as a result of new technology and innovation. As is evidenced by the themes of previous CWUAAT conferences, such as “*Designing Inclusive Futures*” (2008), Inclusive Design already brings together many of these disciplines within a context of ageing and disability. This has led us directly to the focus of this workshop on “Inclusive interactions between people and products in their contexts of use”.

In the context of demographic changes leading to a greater number of older people, the general field of inclusive design research strives to relate the capabilities of the population to the design of products by better characterising the user-product relationship. By 2020, almost half the adult population in the UK will be over 50, with the over 80s being the most rapidly growing sector. Around 22% of the UK population were estimated to be disabled in 2003. Inclusive populations are known to contain a greater variation in sensory, cognitive and physical user capabilities. As a result, interaction design for future generations of products will need to be inclusive.

Research into accessibility for interface design has always represented an unconventional, multi-disciplinary arena, indicating the necessity to bring together a number of pragmatic disciplines, such as assistive technology, mechanical and electrical systems design, computer interface design, and medical and rehabilitation practice. It has moved from isolated activities in disparate fields, such as engineering, occupational therapy and computer science, to the more inter-disciplinary perspective evident today in areas such as healthcare and inclusive design. As a result of this, there is now a need for the transfer of knowledge and techniques from inclusive design research into the HCI community; and secondly,

there is also a requirement for research that can relate complex interactions with a product to inclusion. It is our view that combining the study of interaction with an inclusive approach to user-centred design will form a novel and useful interdisciplinary framework for investigating and improving today's product designs.

The papers that have been included were selected by reference to the peer assessments of an international panel of reviewers from many key disciplines such as computer science, assistive technology, engineering and product design. This panel and the chapters from the final contributors represent a sample of leading national and international research in the fields of inclusive design, universal access, and assistive and rehabilitative technology. As in 2006 and 2008, there have also been significant trans-disciplinary contributions from researchers in architecture and healthcare reflecting the need to understand the new developments in the wider social and economic context of inclusive and assistive technology design.

This book is divided into five areas:

- I. *Understanding Users for Inclusive Design* concerns research that addresses the nature of inclusive performance, such as the effect of environmental context on capability in interaction;
- II. *Measuring Inclusion* focuses on the quantification of impaired capability and tools and methods to measure inclusion;
- III. *Inclusive Interaction* looks at research that brings together interface design and theory with inclusive capability requirements;
- IV. *Assistive Technology* is about the relationship of inclusive design to special purpose design and adaptations for specific impairments;
- V. *Inclusion and Healthcare* looks at healthcare research in areas that encroach into design for greater inclusion.

In the tradition of CWUAAT, we have solicited and accepted contributions over a wide range of topics, both within individual themes and also across the workshop's scope. We anticipate that this will encourage inter-disciplinary research leading to better designs. It is expected that that this will benefit industry, government and end-users thereby effectively reducing exclusion and difficulty, in the workplace, at home and at leisure.

As in previous years but with additional emphasis, we would like to thank all those authors, reviewers and administrators who have contributed to the CWUAAT 2010 International Workshop and to the preparation of this book. Many thanks are due also to the non-contributing members of the Programme Committee. Finally, thanks are particularly due to Mari Huhtala and Suzanne Williams, who both play a key role in bringing the resulting publication to fruition between final submission and the Workshop itself. We would also like to thank the staff at Fitzwilliam College.

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