About the Contributors

Päivi Majaranta is a researcher at the University of Tampere, where she also received her PhD in Interactive Technology in 2009. She has worked on several research projects related to eye tracking. She is especially interested in the application of eye tracking in gaze-controlled and gaze-aware interfaces.

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Hirotaka Aoki is an Associate Professor at Tokyo Institute of Technology. He received his PhD in Engineering from Tokyo Institute of Technology. His current research interests lie in the application of eye tracking techniques to cognitive work analysis, usability engineering and consumer behaviour analysis.

Richard Bates is a Senior Research Fellow at De Montfort University, Leicester where he received his PhD in Eye Gaze Communication. His current research focuses on enabling creativity and communication for people with profound and multiple physical and learning disabilities through the application of technology, particularly in the fields of art and music. He has an ongoing interest in Assistive Technology and also works as a freelance consultant in the field.

Margret Buchholz is a Council Certified Specialist in Occupational Therapy at DART - Centre for Augmentative and Alternative Communication (AAC) and Assistive Technology (AT), Sahlgrenska University Hospital, Gothenburg, Sweden. She has worked in the field of AAC and AT since the mid 1990’s and wrote her MSc and specialist degree in Occupational Therapy with emphasis on AT. She has worked on developing AT assessment methodology for users with severe physical impairments and complex communication needs in several projects, including early Swedish projects on eye-gaze-technology and the COGAIN project.

Rafael Cabeza received his PhD degree (with honors) in Telecommunications Engineering in 1996 from the Public University of Navarra, Pamplona, Spain. Since 1999, he has been an Associate Professor in the Department of Electrical and Electronics Engineering, Public University of Navarra, where, from 2000 to 2010, he has been the Head of the Signal Processing, Microelectronic, and Instrumentation Research Group. His current research interests include the area of signal and image processing, virtual instrumentation, and software tools.
Emiliano Castellina (PhD) is a research assistant in the e-Lite research group at the Department of Computer Science and Automation of Politecnico di Torino. His current research interests include computer assistive technologies (development of special software applications for disabled people) and domotic Systems. He has published several papers on the topic.

Fulvio Corno (PhD) holds an MSc in Electronic Engineering from the Politecnico di Torino in 1991 and a PhD in Computer Science Engineering from the same university in 1994. He is currently an Associate Professor at the Department of Control and Computer Engineering (Dipartimento di Automatica e Informatica) of Politecnico di Torino, and is enrolled in the Faculty of Management and Industrial Engineering (IV Facoltà di Ingegneria - Organizzazione d’Impresa e Ingegneria Gestionale). He has worked on computer-aided design for VLSI design, evolutionary algorithms for optimization problems, intelligent and semantic technologies for Web applications, and domotics and smart homes. His current research interests include semantic technologies, intelligent domotic environments, and interfaces for alternative access to computer systems.

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Mick Donegan is the Founder and Director of SpecialEffect, a charity dedicated to providing enhanced opportunities for people with disabilities to access video games and express themselves through design and music. He was awarded a PhD by Birmingham University in 2006 for an investigation into the conditions for the successful use of Assistive Technology in mainstream education. He was the coordinator of the User Requirements element of COGAIN, a European gaze control and disability project and is currently an Advisor for TOBI, a European funded project on brain control and disability.

Detlev Droege received his diploma in computer science in 1988. He has worked since then at the University of Koblenz-Landau as a faculty member specialising in operating systems, computer graphics and image processing. His research concentrates on active vision systems, focusing on low cost gaze tracking systems in recent years. He participated in the COGAIN Network of Excellence and is now member of the COGAIN association.

Lisa Ellis (Oosthuizen) is the director of an AAC (Augmentative and Alternative Communication) and Assistive Technology company in South Africa. She completed her BSc in Linguistics and Industrial Psychology at Rhodes University in South Africa. Her areas of interest include eye control access to technology for people with disabilities, the application of AAC in a 3rd world and low resource environment and AAC training for rural teachers and therapists.

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interests include Information and Communication Technologies for open and distance education, Semantic Web, Web Intelligence, hypertext, multimedia and hypermedia systems, human-computer interaction and user modeling, knowledge management, ICT for accessibility, eInclusion and eAgeing.

Lorna Gill is a clinical psychologist currently working in a child and adolescents mental health service. She completed her doctorate at the University of Birmingham. She worked on the COGAIN user involvement trials from 2006-2007, at the ACE Centre, Oxford. She retains a keen interest in the application of Assistive Technologies in improving the quality of the lives for those with complex disabilities.

Dan Witzner Hansen is an Associate Professor within the Innovative Communication group at the IT University of Copenhagen, where is also received his PhD. He has been assistant professor at both ITU and the Technical University of Denmark and has been a visiting researcher at Cavendish laboratories, University of Cambridge, UK. His research interests are within computer vision and machine learning for interactive purposes with as special focus on eye tracking and gaze interaction in mobile scenarios. He is the author of several papers and patents related to eye and gaze tracking.

John Paulin Hansen is an Associate Professor at the IT University of Copenhagen. He received his PhD in psychology from Aarhus University. Hansen has a major interest in gaze interaction and Assistive Technologies. He has been pioneering the use of gaze tracking for usability studies and was one of the initiators of the COGAIN network. Hansen is now head of the Innovative Communication research group at IT University of Copenhagen

Henna Heikkilä (MSc) is a researcher at the University of Tampere. She is interested in gaze-based interaction, especially on how to utilize gaze gestures in gaze-controlled applications.

Michael Heubner completed his studies in psychology at Greifswald University. From 2006 to 2010 he was a member of the Applied Cognitive Research Unit at Technische Universität Dresden and the Department of Marketing at Tilburg University. His research has focused on gaze-controlled interfaces and the emotional influence on attentional processes. Currently, he holds a position as Senior Researcher at Millward Brown Healthcare, UK.

Eva Holmqvist is a Council Certified Specialist in Occupational Therapy at DART - Centre for Augmentative and Alternative Communication (AAC) and Assistive Technology (AT), Sahlgrenska University Hospital, Sweden. She has worked within the field of AAC and AT since 1989 and wrote her MSc and specialist degree with emphasis on AAC. She participated in early Swedish projects on eye-gaze-technology. In COGAIN she mainly worked with developing assessment methods and constructing user-friendly layouts for persons with severe disorders and a need of special training to be able to use eye gaze systems.

Aulikki Hyrskykari is a Lecturer in Computer Science at the University of Tampere. She obtained her Lic.Phil degree in Computer Science in 1995 and her PhD in Interactive Tectonology in 2006 at the University of Tampere. She worked as a coordinator in the EU FP5 IST Project iEye, a three year project which focused on studying gaze assisted access to information. She has also acted as a program and
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Howell Istance is a Principal Lecturer in the Centre for Computational Intelligence at De Montfort University in Leicester, UK. He originally worked as an ergonomist on the human factors of industrial control systems, but later moved into computer science to work in HCI. His research interests are in the design of eye gaze communication techniques, particularly for use with computer games by people with physical disabilities. He has chaired a number of international eye tracking conferences; the COGAIN Conferences from 2005 to 2008 and the ACM Eye Tracking Research and Applications conference ETRA in years 2010 and 2012.

Andrea Kübler received her MSc in Biology and Psychology and the PhD in Biology at the University of Tübingen, Germany. She is currently Professor of Psychology at the University of Würzburg. Her research areas are the application of brain-computer interfaces in severely impaired patients and disorders of consciousness; addiction and eating disorders; and sleep disorders in children.

Robert Lange received his diploma in medical engineering in 2005 from the Saxon University of Cooperative Education. After working in the Department of Clinical Engineering in the hospital of Zittau, Saxony, he was employed for 6 month in the department of Engineering Psychology and Cognitive Ergonomics of the Technical University of Dresden to assist in the field of infrared radiation measurements in eyetracking settings. Currently he is taking a postgraduate course in biomedical engineering at the Martin Luther Univerity Halle and at the Anhalt University of Applied Sciences.

I. Scott MacKenzie’s research is in human-computer interaction with an emphasis on human performance measurement and modeling, experimental methods and evaluation, interaction devices and techniques, alphanumeric entry, language modeling, gaming, eye tracking, and mobile computing. He has more than 120 publications in the field of Human-Computer Interaction (including more than 30 from the ACM’s annual SIGCHI conference) and has given numerous invited talks over the past 20 years. Since 1999, he has been Associate Professor of Computer Science and Engineering at York University, Canada.

Diako Mardanbegi is a PhD student at IT University of Copenhagen. He received his MSc. In his Masters thesis he built and evaluated a low-cost head mounted eye tracking system for screen-based interaction. His current research is within mobile gaze tracking for control of home appliances.

José del R. Millán is the Defitech Professor at the Center for Neuroprosthetics of the Swiss Federal Institute of Technology in Lausanne where he explores the use of brain signals for multimodal interaction and the development of non-invasive brain-controlled neuroprostheses, bringing together the work of brain-machine interfaces (BMI) and adaptive intelligent robotics. He received his PhD in computer science from the Univ. Politècnica de Catalunya (Barcelona, Spain) in 1992. He was a research scientist at the Joint Research Centre of the European Commission in Ispra (Italy) and a senior researcher at the Idiap Research Institute in Martigny (Switzerland). He was Research Leader in 2004 by the journal Scientific American for his work on brain-controlled robots. He is the coordinator of several European
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Klaus-Robert Müller is Professor of Computer Science at TU-Berlin since 2006 and also directs the Bernstein Focus on Neurotechnology Berlin. He studied physics in Karlsruhe from 1984-89 and obtained his PhD in Computer Science at TU Karlsruhe in 1992. He was PostDoc at GMD FIRST in Berlin (1992-1994), a European Community STP Research Fellow at University of Tokyo (1994-1995). In 1995 he started the Intelligent Data Analysis (IDA) group at GMD FIRST (later Fraunhofer FIRST) and directed it until 2008. From 1999-2006 he was a Professor of Computer Science at University of Potsdam. In 1999, he was awarded the Olympus Prize by the German Pattern Recognition Society, DAGM and in 2006 he received the SEL Alcatel Communication Award. Since 2000 one of his main scientific interests has been to study the interface between brain and machine: non-invasive EEG-based BCI.

Fiona Mulvey worked as a postgraduate researcher in University College Dublin 2003-2006 and was a DAAD Fellowship holder in TU Dresden 2006-2009. She is currently at the IT University of Copenhagen, where she will complete her PhD in 2011. Her major research interest is in the cognitive neuropsychology of attention and eye movements and individual differences in cognition. She led research within COGAIN for the development of an international safety standard for infrared illumination in eye tracking and currently coordinates work within COGAIN towards an international standard for eye tracker accuracy.

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Isabella Signorile has a degree in Computer Engineering from Politecnico di Torino in 2001. She is interested in computer gaze interaction. Her thesis was titled “Study and achievement of an eye-gaze pc access system for motor disabled people”. Currently she works at CeLM (Centre for e-Learning and Multimedia of Politecnico di Torino) and she coordinates activities and projects for distance students with disabilities.

Henrik Skovsgaard’s research interests include Assistive and Accessible Technologies (e.g., alternative computer input), single and multimodal interface design, cognition, language modeling, virtual environments, programming languages and human performance (e.g., measurement and modeling). In 2008 he entered the PhD program at the IT University of Copenhagen, where he is currently employed.

David Sliney initially studied physics and radiological health, but obtained his PhD in biophysics and medical physics from the University of London, Institute of Ophthalmology. He worked for the US Army Medical Department for many years until retiring in 2007. He served as CIE Director of Division 6 on Photobiology for 12 years and as a CIE Vice-President, and served as President of the American Society for Photobiology during 2008-2009. His research interests focus on subjects related to vision, ultraviolet, infrared and intense light effects upon the eye, optical hazards from medical devices and lasers, laser-tissue interactions, photobiological/laser applications in medicine and surgery.

Oleg Špakov is a researcher in Tampere Unit for Computer-Human Interaction (TAUCHI), University of Tampere, and has worked in gaze data analysis and gaze-aware and gaze-controlled applications development. He received his PhD in Interactive Technology in 2008 focusing on investigation of target selection processes and algorithms in gaze-based applications. He was one of the authors of the recommendations for gaze data standardization in COGAIN, and implemented this standardization in a tool named ETU-Driver.

Olga Štěpánková is a Professor of Applied Cybernetics at the Czech Technical University at Prague and she is a vice-head of the Department of Cybernetics at the Faculty of Electrical Engineering of the Czech Technical University in Prague, which she joined in 1988. She graduated from the Faculty of Mathematics and Physics at the Charles University in Prague and she defended her doctoral degree in 1981. Her research has been focused on theoretical foundations of ICT situated on the border between mathematical logic and artificial intelligence, and on data mining, machine learning and their medical applications. Recently, she became deeply involved in the design of novel assistive tools and of telemedical solutions. She is author or co-author of more than 100 conference and journal papers, co-author or co-editor of 10 books.
Martin Tall is an engineering research associate at Duke University, USA. His current work involves radiology and medical image perception research. Prior to Duke, Tall held the same position at Stanford University, USA. Before relocating across the Atlantic, Tall was a PhD student at the IT University Of Copenhagen working on gaze interaction interfaces. At ITU, collaboration with Dr. Javier San Agustin started on the open source GazeTracker which has since grown to a vibrant online community.

Michael Tangermann is a Postdoc Researcher at the Berlin Institute of Technology. He is a member of BBCI group of the Machine Learning Department of Professor Klaus-Robert Müller. After studies of computer science and biology he received his doctorate in 2007 at the University of Tübingen, Germany. His main fields of research are BCI approaches for patients, novel auditory ERP paradigms for BCI, motor imagery paradigms, machine learning methods in BCI for feature selection or artifact removal, mental state monitoring applications, workload analysis in real-time applications and EEG-based gaming.

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