



Caring technology for the future

ECCE 2010

European Conference on Cognitive Ergonomics 2010

25 - 27 August 2010 · Delft, The Netherlands

The 28th annual conference of the European Association of Cognitive Ergonomics



INVITED SPEAKERS

Takanori Shibata



Title : Integration of Therapeutic Robot, Paro, into Welfare Systems.

Abstract:

Since 1993, Paro, a baby seal robot, has been developed for two purposes: one is for as companion at home, and the other is for therapy at hospitals, elderly institutions, schools, and so on. In 2005, Paro was commercialized in Japan, and so far, more than 1,300 units have been sold there. About 70% of customers are individuals, and about 20% are institutions.

As research on international comparison of evaluation of Paro by people, we had questionnaires to visitors who interacted with Paro at exhibitions in seven countries; Japan, Korea, Sweden, UK, Italy, Brunei, and US. Most people had high evaluation value on Paro regardless of countries. However, when we analyzed the data by the principal component analysis, two different usages of Paro were observed; one was for pet, and the other was for therapy.

In Denmark, Danish Technological Institute (DTI) have been distributing Paro only to welfare institutions and hospitals in Denmark since late 2008. So far, more than 100 welfare institutions and hospitals in Denmark have been using Paro, especially for caring elderly people with dementia. DTI plan that they will introduce 1,000 Paros to elderly institutions in Denmark by 2011.

In the US, FDA (Food and Drug Administration) certified Paro as a “medical device” in Sep. 2009. Since Dec. 2009, Paro has been officially sold in the US. So far, about 50 Paros have been used there.

I will explain details of how Paro works for therapy, especially for elderly people with dementia. Then, I will explain how Paro has been introduced in the welfare systems.

Biography:

Dr. Takanori Shibata was born in '67 and received B.S., M.S., and Ph.D. in Electronic and Mechanical Engineering from Nagoya University in '89, '91, '92, respectively. He was a research scientist at AIST '93 to '98. Concurrently, he was a research scientist at the Artificial Intelligence Lab., MIT from '95 to '98, and a visiting research scientist at the Artificial Intelligence Lab., Univ. of Zurich in '96. Dr. Shibata has been a senior research scientist at the National Institute of Advanced Industrial Science and Technology in Japan since '98. Concurrently, he was the Deputy Director for Information and Communication Technology Policy, Bureau of Science, Technology, and Innovation Policy, Cabinet Office, Government of Japan from '09 to '10. His research interests include human-robot interaction, robot therapy, and humanitarian de-mining. He was certified as the inventor of a seal robot named Paro, the World's Most Therapeutic Robot, by Guinness World Records in 2002. He has received many awards including the Robot of the Year by Ministry of Economy, Trade and Industry, Japan in 2006, the outstanding young person of the world by Junior Chamber International in 2004, and the Japanese Prime Minister's Award in 2003.

INVITED SPEAKERS

Brenda Wiederhold



Title: 15 years of Virtual Reality for Training and Therapy: A Brief Review with an Emphasis on Posttraumatic Stress Disorder and Stress Inoculation Training .

Abstract:

Groups from around the world have proven the value of adding advanced technologies as an adjunct to traditional cognitive-behavioral protocols in treating a multitude of disorders. Originally most virtual reality applications were developed on silicon graphics work stations and cost millions of dollars. As the power of technology has increased and costs have decreased, groups have continued to push the envelope and look at how various simulations may be ported to a variety of platforms, including mobile phones. The push to mobile platforms will allow these technologies to become more widespread and accessible, easier to disseminate to the population at large. In addition, groups have continued to expand the list of disorders that may be treated with these technologies. Also, many groups are now adding objective physiological measures to quantify results. This should help with acceptance of mental health treatments by more traditional medical disciplines.

A brief overview of the history of VR in therapy and training will be given, and then a more in-depth look at Posttraumatic Stress Disorder and Stress Inoculation Training supplemented with VR and advanced technologies will be presented.

Biography:

Professor Dr. Brenda K. Wiederhold, Ph.D., MBA, BCIA is President of Virtual Reality Medical Institute (VRMI), an SME incorporated in Brussels, Belgium. She is a licensed clinical psychologist in the U.S., Switzerland, and Belgium and earned a doctorate in Clinical Health Psychology as well as international certification in both biofeedback and neurofeedback. She serves as a Visiting Professor at the Catholic University in Milan, Italy and as Executive Vice-President of Virtual Reality Medical Center (VRMC) in the U.S. She is also a Clinical Instructor at University of California, San Diego, Department of Psychiatry.

Dr. Wiederhold is recognized as a world leader in the treatment of anxiety, panic, phobias, and posttraumatic stress disorder with VR exposure and cognitive-behavioral therapy, objectively measuring results with physiological monitoring of heart rate, heart rate variability, skin conductance, skin temperature, respiration, and brain activity.

Dr. Wiederhold is the founder of the international CyberTherapy Conference, now in its 15th year, Editor-in-Chief of the MedLine-indexed CyberPsychology & Behavior Journal, and publisher and Editor-in-Chief of the Journal of CyberTherapy & Rehabilitation and CyberTherapy & Rehabilitation Magazine. She is Secretary General of the International Association of CyberPsychology, Training & Rehabilitation (iACToR).

She has given invited lectures on the topic of advanced technologies and healthcare in 24 countries throughout Europe and Asia and has published more than 150 articles and twelve books on the subject.

INVITED SPEAKERS

Panos Markopoulos



Title: Embodiment in games: designing for children's well being.

Abstract

This talk will present a series of design explorations into tangible and pervasive games for children. The applications explored very different types of games and form factors for the devices used, but they share the intention to support well being of children either through supporting learning, rehabilitation or simply making children more physically and socially active. The research vision driving these efforts will be described introducing the concepts of head-up games and meta-design for children's game will be introduced.

Biography

Panos Markopoulos studied computer science in the National Technical University of Athens and human-computer interaction in Queen Mary University of London, where he also did his doctorate in formal methods in human computer interaction. He is an Associate Professor in the Department of Industrial Design of the Eindhoven University of Technology. His research and teaching concern interaction design and ambient intelligence. He has worked on several application domains including social games for children, persuasive technologies, connectedness between family and friends. Panos Markopoulos has co-authored a book on evaluating children's interactive products, published by Morgan Kaufmann in 2008.

Monday, 23 Aug 2010 – Doctoral Consortium

10:00 – 12:00	Doctoral Consortium session 1
	Attention and Programmer Characteristics in Prospective Memory: An investigation of habit intrusion in programmer multitasking <i>Premjit K. Sanjram and Khan Azizuddin</i>
	Different Aspects of Trust in Ubiquitous Intelligent Transportation Systems <i>Hannu Karoonen</i>
	Wearable Environments: Reconfiguring human-machine-environment relations <i>A. Baki Kocaballi</i>
12:00 – 13:00	Lunch
13:00 – 16:30	Doctoral Consortium session 2
	Cognition-Based Design Rules Enhancing Decision Making Training in a Game Environment (code red triage: Doctoral Consortium paper) <i>Eric D. van der Spek</i>
	The Role of Display Technology and Individual Differences on Presence <i>Yun Ling, Harold T. Nefs, Willem-Paul Brinkman, Ingrid Henderickx, and Chau Qu</i>
	Personalized and Contextualized Information in Self-Management Systems for Chronically Ill Patients (PERISCOPE) <i>M. Laverman, J.H.M. Schonk, P.J.M. van der Boog, and M.A. Neerincx</i>
18:00	Doctoral Consortium Dinner

Tuesday, 24 Aug 2010 – Workshop

The workshops take place in the EEMCS (Campus Building 36) and the workshops have a dedicated room:

-Cognitive Engineering for Technology in Mental Health Care and Rehabilitation – Room 19.130 (Bordewijkzaal)

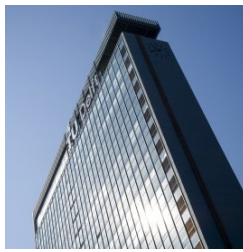
-Putting users' first : the importance of human-centred design in the development of mobile applications and services –Room 01.010 (Snijderzaal)

-Robots That Care – Room 17.150 (Colloquiumzaal)

-Eye-Tracking = Reading the Mind – Room 10.230 (Shannonzaal)

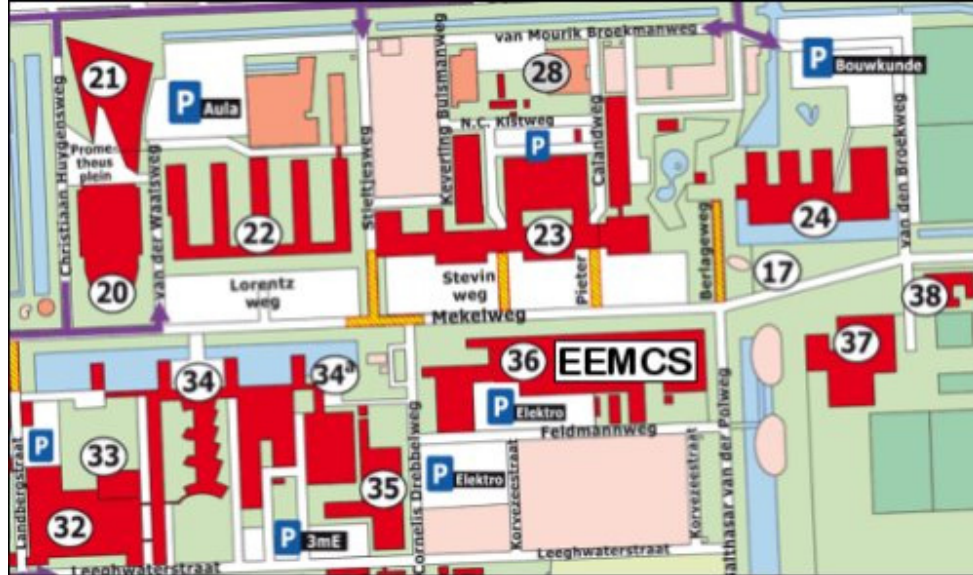
09:00	Registration in the central hallway of the EEMCS building (Campus Building 36)
9:30 – 10:30	Workshop session 1
10:30 – 10:45	Coffee (ground floor)
10:45 – 12:30	Workshop session 2
12:30 – 13:30	Lunch (ground floor)
13:30 – 15:00	Workshop session 3
15:00 – 15:15	Coffee (ground floor)
15:15 – 17:00	Workshop session 4
17:30 – 18:30	Workshop drink / welcomes drink main conference (basement EEMCS building in /PUB)

EEMCS address: Mekelweg 4
2628 CD Delft
The Netherlands



Route:

By car:	By public transport:
Highway A13 (The Hague - Rotterdam) Exit 10: Delft Zuid	From station Delft, take RET bus 40 (to Rotterdam CS) and get off the bus at busstop “Cornelis Drebbelweg” OR
Exit: TU-wijk. Follow the roadsigns P Elektro	From station Delft, take bus 69 (to TU Zuid) and get off the bus at busstop “Stieltjesweg” OR
Park at back side of building (Feldmannweg)	From station Delft take bus 121 (to Zoetermeer, Centrum West) and get off the bus at busstop “AULA”



Main Hall (Building 20):
Mekelweg 5
2628 CD Delft
The Netherlands

Route:

Main Hall is 2 minutes walking from EEMCS. The route is same as the one of EEMCS

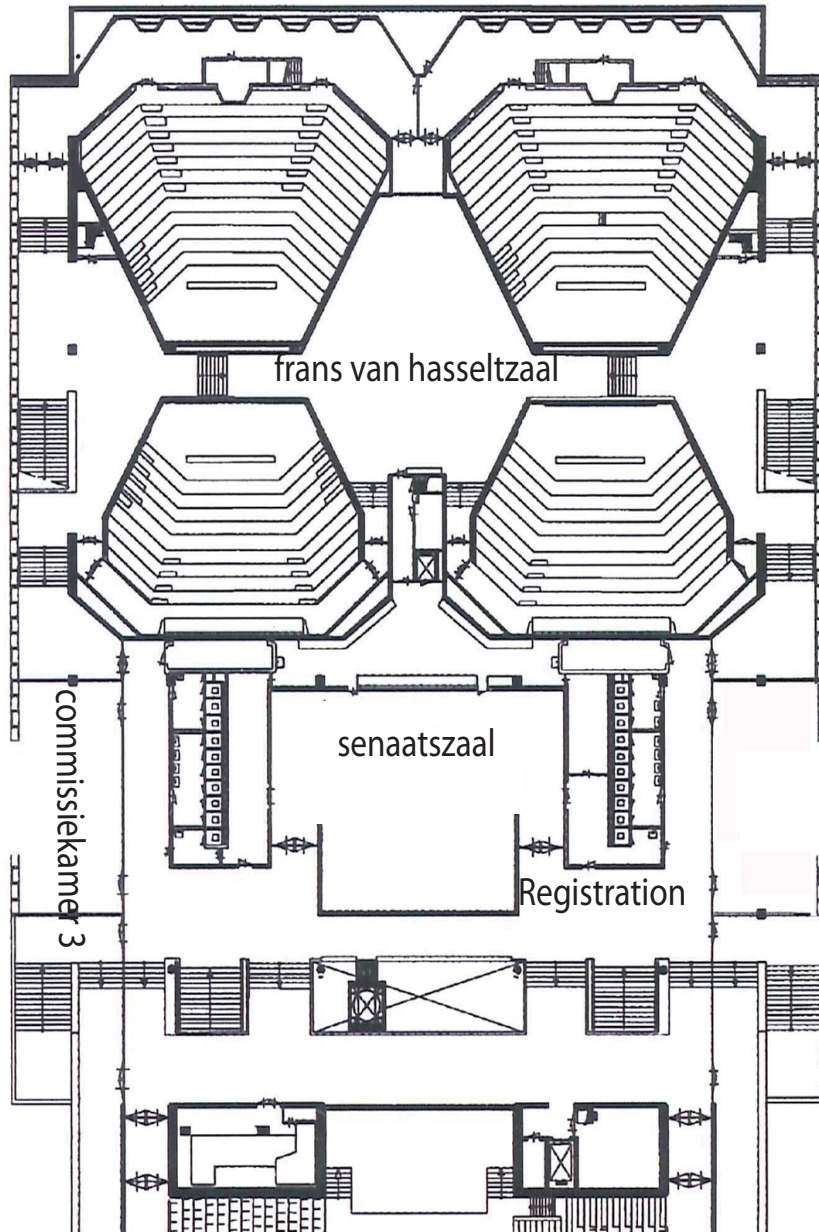
Wireless networks connection.

EEMCS	The building will provide internet connection for all workshop participants. Pass words can be obtained from the conference desk.
Main Hall	Congress center provide special wireless connection 'TU Delft-congres' for guest. The WEP key is 'efgfa'.

The Main Conference take place on the second floor in the Main Hall.

- Registration - in front of the room Senaatszaal
- Paper session 4, 8, 10 - room: Commissiekamer 3
- Keynotes and the rest Paper session - room Senaatszaal
- lunch - room Frans Van Hasseltzaal
- Poster session - the hall of the second floor

Wednesday, 25 Aug 2010 – Main Conference



09:00	Registration (Second floor in Main Hall)
10:00 – 10:15	Opening ceremony (Room: Senaatszaal)
10:15 – 11:00	Takanori Shibata – Integration of Therapeutic Robot, Paro, into Welfare Systems (Chair: Joost Broekens Room: Senaatszaal)
11:00 – 11:15	Coffee
11:15 – 12:45	Paper session 1 – Designing for individual needs Chair: Betsy van Dijk, Room: Senaatszaal
	Designing & evaluating a cognitive prosthetic for people with mild dementia <i>Maurice Mulvenna, Suzanne Martin, Stefan Sävenstedt, Johan Bengtsson, Franka Meiland, Rose Marie Dröes, Marike Hettinga, Ferial Moelaert, and David Craig</i>
	Proficient blind users and mobile text-entry <i>Hugo Nicolau, Tiago Guerreiro, Joaquim Jorge, and Daniel Gonçalves</i>
	Home technology design for the cognitively impaired <i>Peter G Higgins, and Adam Glasgow</i>
12:45 – 13:45	Identifying the relevant individual attributes for a successful non-visual mobile experience <i>Tiago Guerreiro, Joaquim Jorge, and Daniel Gonçalves</i>
	Lunch (Room Frans Van Hasseltzaal)

	<p>Paper session 2 – Designing for shared understanding Chair: Susan Turner, Room: Senaatszaal</p>
13:45 – 15:15	<p>Near real-time outbreak surveillance system for early warning as a JCS <i>Liliane Pellegrin, Charlotte Gaudin, Gaetan Texier, Jean-Baptiste Meynard, Hervé Chaudet</i></p> <p>Effect of map sharing and confidence information in situation-map making <i>Lucy Gunawan, Hani Alers, Willem-Paul Brinkman, and Mark Neerinx</i></p> <p>Designing tools for emergency operations: new method of parallel augmented exercise <i>Leena Norros, Marja Liinasuo, and Rob Hutton</i></p>
15:15 – 15:30	Coffee
	<p>Paper session 3 Theory, concepts, and design Chair: Anke Dittma, Room: Senaatszaal</p>
15:30 – 17:00	<p>The anatomy of engagement <i>Phil Turner</i></p> <p>The semantic level in HMS design: constraints, scale types and representational forms <i>Michael May</i></p> <p>Externalisation in design: impact of different tools on designers' activities and on the assessment of final design <i>Alicja Wojtczuk, and Nathalie Bonnardel</i></p>

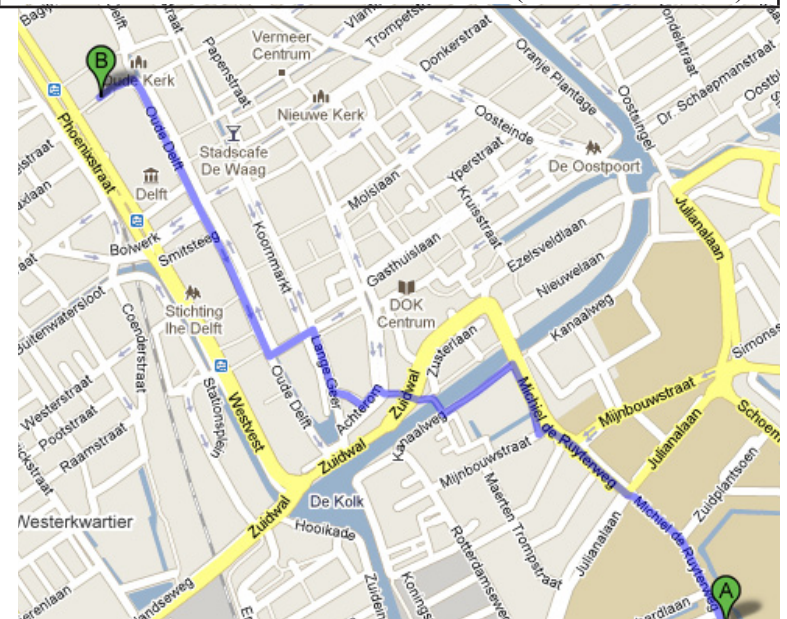
	<p>Paper session 4 Collaboration at a distance Chair: Nicolas Marmaras, Room commissiekamer 3</p>
15:30 – 17:00	<p>Haptic communication to enhance collaboration in virtual environments <i>Amine Chellali, Cédric Dumas, and Isabelle Milleville</i></p> <p>The role of argumentation in online epistemic communities: the anatomy of a conflict in Wikipedia <i>Dominique Fréard, Alexandre Denis, Françoise Détienne, Michael Baker, Matthieu Quignard, and Flore Barcellini</i></p> <p>Balancing costs and benefits of automated task allocation in mobile surveillance <i>Jan Willem Streefkerk, Myra van Esch-Bussemakers, and Mark Neerinx</i></p>
17:00 – 18:00	EACE AGM
19:00	Conference dinner at the <i>Prinsenkelder</i> (20 minutes walk)

Prinsenkelder

address:
Schoolstraat 11
2611 HS Delft
The Netherlands

location A:
Main Hall

location B:
prinsenkelder



Thursday, 26 Aug 2010 – Main Conference

9:00 – 10:30	<p>Paper session 5 – Information seeking and navigation Chair: Charles van der Mast, Room: Senaatszaal</p> <p>Linking search tasks with low-level eye movement patterns <i>Michael J. Cole, Jacek Gwizdka, Ralf Bierig, Nicholas J. Belkin, Jingjing Liu, Chang Liu, and Xiangmin Zhang</i></p> <p>Information seeking behaviour model as a theoretical lens: high and low literate users behaviour process analysed <i>Neesha Kodagoda, B.L. William Wong, and Nawaz Khan</i></p> <p>The role of content in addition to hyperlinks in user-clicking behaviour. <i>Saraschandra Karanam, Herre van Oostendorp, and Bipin Indurkhya</i></p>
	<p>10:30 – 10:45</p> <p>Coffee</p>
10:45 – 12:15	<p>Paper session 6 – Health care Chair: Peter Forbrig, Room: Senaatszaal</p> <p>Life changes, connection stays: photo sharing and social connectedness for people with special needs <i>Betsy van Dijk, Pavan Dadlani, Aart van Halteren, and Margit Biemans</i></p> <p>Older adults' attitude towards a monitoring technology <i>Mario Conci, Fabio Pianesi, and Massimo Zancanaro</i></p> <p>Laying the groundwork for assisted rehabilitation <i>Rita Pereira, Tiago Guerreiro, Hugo Nicolau, Daniel Gonçalves, and Joaquim Jorge</i></p> <p>Exploratory analysis of deviations from formal procedures during preoperative anaesthetic evaluation <i>Polyxeni Vassilakopoulou, Vassilis Tsagkas, and Nicolas Marmaras</i></p>

Thursday, 26 Aug 2010 – Main Conference

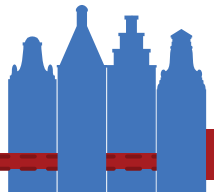
12:15 – 13:15	Lunch (Room Frans Van Hasseltzaal)
13:15 – 14:00	<p>Brenda Wiederhold –15 years of Virtual Reality for Training and Therapy: A Brief Review with an Emphasis on Posttraumatic Stress Disorder and Stress Inoculation Training (Chair: Willem-Paul Brinkman, Room: Senaatszaal)</p>
14:00 – 15:20	<p>Paper session 7 Road vehicles and their use Chair: Gerrit van der Veer, Room: Senaatszaal</p> <p>An explorative study of visual scanning strategies of motorcyclists in urban environment <i>Vassilis Papakostopoulos, Dimitris Nathanael, and Nicolas Marmaras</i></p> <p>Feelings and strategies of senior drivers: ways of coping with fear <i>Béatrice Cahour, Jean-François Forzy, and Clémence Martin</i></p> <p>Understanding overtaking, beyond limitations of the visual system in making spatiotemporal estimations <i>Vassilis Papakostopoulos, Eleana-Georgia Spanou, Dimitris Nathanael, and Kostas Gkikas</i></p>
	<p>Paper session 8 Design concepts and solutions Chair: Joost Broekens, Room commissiekamer 3</p> <p>Memory fragments of the industrial landscape <i>Monica Tavanti, and Ivan Rankin</i></p> <p>Re-creating Edinburgh: adopting the tourist gaze <i>Luke Burrows, and Susan Turner, and Phil Turner</i></p> <p>Keeping an eye on the UI design of translation memory: how do translators use the “concordance” feature? <i>Sharon O’Brien, Minako O’Hagan, and Marian Flanagan</i></p>
15:20 – 15:35	Coffee

Thursday, 26 Aug 2010 – Main Conference

15:35 – 16:55	<p>Paper session 9 Decision support and cooperation Chair: Tjerk de Greef, Room: Senaatszaal</p> <p>Commanders dashboard: overview of tactical changes to improve situated decision making in the field <i>N.J.J.M. Smets, J.W. Streefkerk, and M.A. Neerincx</i></p> <p>Situation awareness in medical visualization to support surgical decision making <i>Ashis Jalote-Parmar, and Petra Badke-Schaub</i></p> <p>Analysis of the dynamics of common ground: a methodological proposal <i>Christine Chauvin, Gilles Coppin, and H�el�ena Ch�en�</i></p> <p>■■■■</p>
	<p>Paper session 10 Workload, emotion, and stress Chair: Phil Turner, Room commissiekamer 3</p> <p>Impacts of physical and mental workload interaction on human attentional resources performance <i>Abdulrahman M. Basahel, Mark S. Young, and Marco Ajovalasit</i></p> <p>Using stroop task to assess cognitive load <i>Jacek Gwizdka</i></p> <p>Human-camera interaction: an exploratory study on people’s emotions and attitude towards cameras <i>Manon van der Sar, and Ingrid Mulder</i></p> <p>Self-efficacy & stress in senior computer interaction <i>H.H. Nap, and H.P. de Greef</i></p> <p>■■■■</p>
	<p>16:55</p> <p>Poster Boaster session</p>

Thursday, 26 Aug 2010 – Main Conference

Poster and Demo(17:30 – 18:30)	
	<p>The relationship between cognitive abilities, well-being and use of new technologies in older people <i>Veronika van der Wardt, Stephan Bandelow, and Eef Hogervorst</i></p>
	<p>The influence of an activity awareness display on distributed multi-team systems <i>Lisanne Brons, Tjerk de Greef, and Rick van der Kleij</i></p>
	<p>Visual Priming to Improve Keyword Detection in Free Speech Dialogue <i>Chao Qu, Willem-Paul Brinkman, Pascal Wiggers, et al.</i></p>
	<p>Participatory design for challenging user groups <i>Immo Colonius, Sandra Budde, and Roberta Annicchiarico</i></p>
	<p>Analyzing Online Social Support between Professionals <i>prost magali, b�eatrice cahour, and fran�oise d�etienne</i></p>
	<p>Assessment of user needs for self-management services in coronary heart disease: A designerly approach <i>Sandra Vosbergen, Niels Peek, Roderik A. Kraaijenhagen, et al.</i></p>
	<p>Coping with Learning Styles during Organizational Changes <i>Mari Carmen Puerta Melguizo, Frank Dignum, and Virginia Dignum</i></p>
	<p>Measuring unrestrained gaze on wall-sized displays <i>Lewis Chuang, Hans-Joachim Bieg, Heinrich B�ulthoff, et al.</i></p>
	<p>Behaviour Based Searching of Human using MDP <i>Syed Atif Mehdi and Karsten Berns</i></p>
	<p>How humans behave and evaluate a social robot in real-environment settings <i>Andreea Niculescu, Betsy van Dijk, Anton Nijholt, et al.</i></p>



Thursday, 26 Aug 2010 – Main Conference

Head Pose Estimation For Real-Time Low-Resolution Video <i>David van der Pol, Raymond H. Cuijpers, and James F. Juola</i>
The CareRabbit <i>Sanne Blom, Robert Stegwee, and Magda Boere-Boonekamp</i>
A Bayesian model for approaching a human <i>Elena Torta, Raymond H. Cuijpers, and Jim Juola</i>
Towards remote handwriting deficits therapy: a study on the use of a touch-screen in replacing paper <i>Mario Conci, Fabio Pianesi, Massimo Zancanaro, et al.</i>
The Social Robotplatform Probo <i>Jelle Saldien, Bram Vanderborght, and Dirk Lefeber</i>
Toward an Ambient Empathic Health Companion for Self Care in the Intelligent Home <i>Vanessa Evers and Ben Krose</i>
Virtual Reality Exposure and Neuro-Bio Feedback to Help Coping with Traumatic Events <i>Mark Neerinx, Victor Kallen, Anne-Marie Brouwer, et al.</i>
The Use of Robots in Social Behavior Tutoring for Children with ASD <i>Jeroen Arendsen, Joris Janssen, Sander Begeer, et al.</i>
WikiTherapist <i>Jan Gillesen, Stijn Boere, and Emilia Barakova</i>
Robo M.D.: A Home Care Robot for Monitoring and Detection of Critical Situations <i>Antoine van de Ven, Anne-mie Sponselee, and Ben Scouten</i>
Friend or Fiend: Prototyping for Social Cohesion <i>Geert de Haan, Ingrid Mulder, and Justien Marseille</i>

Thursday, 26 Aug 2010 – Main Conference

19:00 Social events

Small Social event incorporating a *boat trip* through Old City of Delft and a visit to the *Vermeer Center* (Vermeer was a famous Dutch painter)



Boat trip starts at Abtswoudseweg in Delft



*Vermeer Centrum
Delft
Address:
Voldersgracht 21
2611 EV Delft*

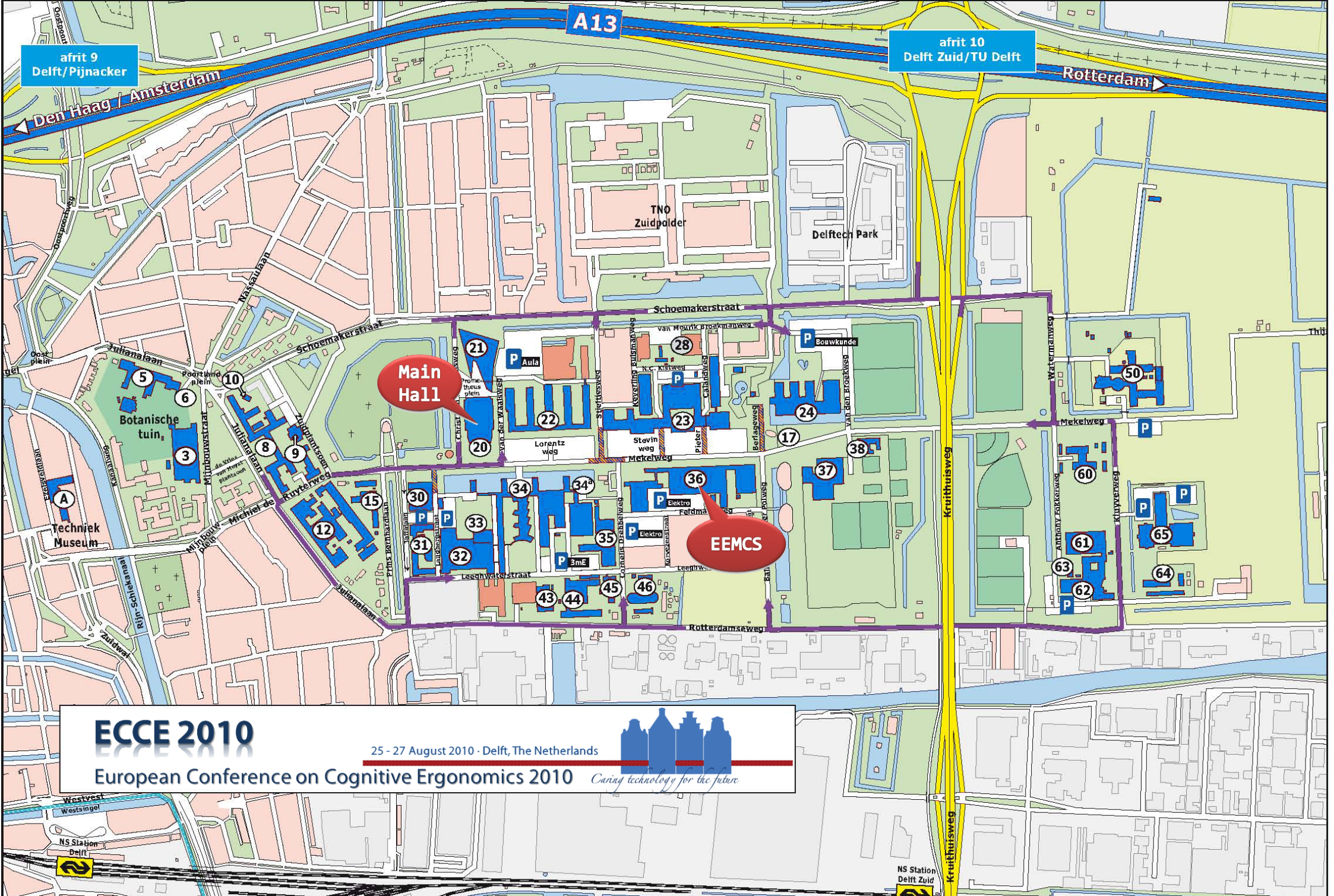


Friday, 27 Aug 2010 – Main Conference

9:00 – 10:50	Paper session 11 – Task analysis and automation Chair: Willem-Paul Brinkman, Room: Senaatszaal
	Unraveling metro train driver's work: challenges in automation concept <i>Hannu Karvonen, Iina Aaltonen, Mikael Wahlström, Leena Salo, Paula Savioja, and Leena Norros</i>
	Cognitive task analysis for virtual reality training: the case of CNC tool offsetting <i>Dimitris Nathanael, George-Christopher, and Stergios Mosialos</i> Pilot workload monitoring and adaptive aviation automation – a solution space-based approach <i>J. Comans, M.M. van Paassen, and M. Mulder</i> 
10:50 – 11:00	Coffee
11:00 – 12:00	Paper session 12 – Air traffic control Chair: Mark Neerincx, Room: Senaatszaal
	The need for a multi-factorial model of safe human performance in air traffic control <i>Tamsyn Edards, Sarah Sharples, John R. Wilson, and Barry Kirwan</i> The effects of air traffic control sector design on the solution space diagram <i>S.M.B. Abdul Rahman, M. Mulder, and M.M. van Paassen</i> 
12:00 – 13:00	Lunch (Room Frans Van Hasseltzaal)

Friday, 27 Aug 2010 – Main Conference

13:00 – 14:30	Paper session 13 – Methods, tools, and methodologies Chair: Charles van der Mast, Room: Senaatszaal
	Cognitive ergonomics of teaching ontologies <i>Tatiana Gavrilova, Vladimir Gorovoy, and Ekaterina Bolotnikova</i> Employing use-cases for piecewise evaluation of requirements and claims <i>Matthijs Westera, Jimmy Boschloo, Jurriaan van Diggelen, Laurens S. Koelewijn, Mark A. Neerincx, and Nanja J.J.M. Smets</i>
	Game design: the mapping of cognitive task analysis and game discourse analysis in creating effective and entertaining serious games <i>Pieter Wouters, Herre van Oostendorp, and Erik D. van der Spek</i> 
14:30 – 14:45	Coffee
14:45 – 15:30	Panos Markopoulos – Embodiment in games: designing for children's well being (Chair: Mark Neerincx, Room: Senaatszaal)
15:30 – 15:45	Closing ceremony



afrit 9
Delft/Pijnacker

afrit 10
Delft Zuid/TU Delft

Main Hall

EEMCS

ECCE 2010
25 - 27 August 2010 · Delft, The Netherlands
European Conference on Cognitive Ergonomics 2010 *Carrying technology for the future*

Main Hall (Congrescentrum): Building 20, Faculty of Electrical Engineering, Mathematics and Computer Science (EEMCS) building: Building 36

A:
Vermeer Centrum
Voldersgracht 21
2611 EV Delft

B:
Prinsenkelder
Schoolstraat 11
2611 HS Delft
The Netherlands

C:
EEMCS
Mekelweg 4,
2628 CD Delft

D:
Main Hall
Mekelweg 5,
2628CD Delft

E:
boat trip start point
Abtswoudseweg
in Delft

