Welcome to ICCT 2017

The International Conference on Companion Technology provides a forum for researchers and practitioners to exchange and discuss all aspects of research, development, and applications of Companion Technology.

Companion Technology is an emerging field of cross-disciplinary research that aims at a paradigm shift in human-technology-interaction. It enables technical systems of any kind to smart adapt their services to the individual needs of users, their current requests, situation, emotion, and disposition. Companion Technology covers and combines trans-disciplinary research in fields such as computer science and artificial intelligence, cognitive science, engineering, psychology, and neurobiology. Its application perspectives include all areas of digital assistance, examples being cognitive robotics, support for health and elderly care, intelligent environments, driver assistance, and autonomous driving.

ICCT 2017 is organized and sponsored by the IEEE Systems, Man, and Cybernetics Society and the Transregional Collaborative Research Centre SFB/TRR 62 funded by the German Research Foundation (DFG). The conference presents technical papers on a wide range of trans-disciplinary topics and includes keynotes as well as invited talks on trends and challenges from viewpoints of both science and industry.

Enjoy ICCT 2017 in Ulm!
Day 1 - Monday, Sep 11, 2017
08:30 Registration
09:00 Welcome and Introduction
09:15 Keynote 1
Modeling Human Communication Dynamics
Louis-Philippe Morency
Language Technology Institute, Carnegie Mellon University, Pittsburgh PA, USA
10:45 Coffee ¹
11:15 Session 1: Strategy, Cognition, Models
• Neurobiological Fundamentals of Strategy Change – A Core Competence of a Companion System
  A. Schluž, M. Woldet, M. Brosch, F. Ohn
• Preliminary Classification of Cognitive Load States in a Human Machine Interaction Scenario
  A. Ostoj-Strobel, S. Graus, L. Jerg-Bretzke, S. Walter, D. Hazer-Rau
• Pupil-Assisted Target Selection (PATs): State of the Art and Future Prospects
  C. Strauch, J. Ehlers, A. Haukka
• Requirements for a Companion System to Support Identifying Irrelevancy (Position Paper)
  M. Siebers, K. Gibiel, C. Niessen, U. Schmid
• Embedding of the Personalized Sentiment Engine PERSEUS in an Artificial Companion (Position Paper)
  S. Guo, C. Schommer
13:00 Lunch ¹
14:00 Session 2: Affective Signals
• Stereotyped Gesture Recognition: An Analysis between HMM and SVM (Position Paper)
  M. Y. Camarda, J. Cerqueira, A. M. Lima
• Accelerating Manual Annotation of Filled Pauses by Automatic Pre-Selection
  E. Ggewor, A. lotz, I. siegert, R. bock, J. krieger, A. wendemuth
• Inferring User’s Search Activity Using Interaction Logs and Gaze Data
  J. Schwerdt, M. Kotsyba, A. Nuernberger
• Multimodal Fusion including Camera Photoplethysmography for Pain Recognition
  V. Kessler, P. Thiam, M. Amiran, F. Schwenker
15:30 Coffee ¹
16:00 Trends & Challenges 1
Towards Human State Assessment for Cooperative Human-Cyber-Physical Systems
Jochem Rieger
Applied Neurocognitive Psychology Lab, University of Oldenburg, Germany
16:45 Industry Talk 1
Paradigm Shift in Automotive User Interfaces
Frank Uhlig
e.solutions GmbH, Ulm, Germany
17:30 End of Program of Day 1
19:00 Conference Dinner
Best Paper Award Presentation
¹ Poster presentations and discussion with summer school participants during all breaks

Day 2 - Tuesday, Sep 12, 2017
08:30 Registration
09:00 Keynote 2
Intelligent Machines – Intelligent Humans
Who Changes Whom
Klaus Bengler,
Chair of Ergonomics, Technical University Munich, Germany
10:30 Coffee ¹
11:00 Session 3: Planning and Decision Making
• SLOTH – The Interactive Workout Planner
  G. Behrke, F. Nielsen, M. Schiller, P. Bercher, M. Kraus, B. Glimm, W. Minker, S. Biundo
• How to Manage Affective State in Child-Robot Tutoring Interactions?
  T. Schodde, L. Hoffmann, S. Kopp
• Help Me Make a Dinner! Challenges When Assisting Humans in Action Planning
  G. Behrke, B. Leichtmann, P. Bercher, D. Höller, V. Nitsch, M. Baumann, S. Biundo
• A Paradigm for Coupling Procedural and Conceptual Knowledge in Companion Systems (Position Paper)
  M. Schiller, G. Behrke, M. Schnautz, P. Bercher, M. Kraus, W. Minker, B. Glimm, S. Biundo
12:30 Lunch ¹
13:30 Trends & Challenges 2
Trends in Applications of Companion Technology to Space Exploration
Adrian Stoica,
NASA Jet Propulsion Laboratory and California Institute of Technology, Pasadena, CA, USA
14:15 Industry Talk 2
Adaptive User Interfaces: From Vehicle Components to Transport Networks
Stas Krupenia,
BMW Car IT GmbH, Ulm, Germany
15:00 Coffee ¹
15:30 Demonstration
BMW Car IT GmbH, Ulm, Germany
18:00 End of Program of Day 2
19:00 Guided tour through the old town of Ulm

Social Events
Conference Dinner
Monday, Sept. 11, 2017 - 19:00
Ratskeller Restaurant ²
Marktplatz 1, 89073 Ulm
+49 731 8801740
Guided tour through the old town of Ulm
Tuesday, Sept. 12, 2017 - 19:00
Meeting Point: Stadthaus Ulm ²
Münsterplatz 50, 89073 Ulm
¹ see map on the backside for directions

Day 3 - Wednesday, Sep 13, 2017
08:30 Registration
09:00 Keynote 3
Prosodic Entrainment and Social Impact
Julia Hirschberg,
Spoken Language Processing Group, Columbia University, NY, USA
10:30 Coffee ¹
11:00 Session 4: Systems
• Adaptive Mobile Behavior Change Intervention Using Reinforcement Learning (Position Paper)
  L. Cai, C. Wu, K. J. McIntind, M. Gerber
• Adaptive Dynamic Network Architectures for Companion Systems (Position Paper)
  C. Javes, H. Neumann
• Dialogues with IoT Companions Enabling Human Interaction with Intelligent Service Items (Position Paper)
  K. Jokinen, S. Nishimura, K. Fukuda, T. Nishimura
• Possible Applications of Companion Systems in Psychotherapy – Perspectives on a New Technology (Position Paper)
12:00 Trends & Challenges 3
Challenges in Cognition-Based Human-Robot Collaboration
Joachim Hertzig,
Osnabrück University and DFKI Robotics Innovation Center, Osnabrück Branch, Germany
12:45 Lunch ¹
13:45 Industry Talk 3
Context is King
Axel Platz,
User Interface Design, Siemens AG Corporation Research, Munich, Germany
14:30 Panel
Companion Technology – The Way Ahead
(Invited Speakers, Chairs)
15:45 Participants’ Townhall Meeting
16:30 End of Conference

Local Information
Ulm, founded 854, is rich in history and traditions as a former Free Imperial City. Internationally, Ulm is primarily known for having the church with the tallest steeple in the world, the Gothic minster (German: Ulmer Münster) and as the birthplace of Albert Einstein.

The steeple measures 161.5 metres (530 ft), containing 768 steps. From the top level at 143 m (469 ft) there is a panoramic view of Ulm and Neu-Ulm in Bavaria and, in clear weather, a vista of the Alps. The final stairwell to the minster is free, entrance to the teeple costs 5€.

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Ulmer Münster, tallest church in the world

Online Program and Proceedings
http://icct2017.companion-technology.org/