



MENSCH UND COMPUTER 2022

FACING REALITIES

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MENSCH UND COMPUTER 2022: Facing Realities

TAGUNGSBAND PROCEEDINGS



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MENSCH UND COMPUTER 2022

FACING REALITIES

Herzlich willkommen zur „Mensch und Computer 2022“ vom 4.-7. September 2022 in Darmstadt

Die 2001 ins Leben gerufene Konferenz „Mensch und Computer“ (MuC) ist die größte Tagungsreihe der Mensch-Computer-Interaktion in Europa. Teilnehmenden aus Wissenschaft und Industrie bietet die MuC eine Plattform für Beiträge und Diskussionen zu innovativen Formen der Interaktion zwischen Menschen und digitaler Technik, zu nutzerorientierten Entwicklungsmethoden, interaktiven Anwendungen und weiteren Themen aus dem Spannungsfeld zwischen Nutzenden, Teams und Communities einerseits sowie den genutzten Informations- und Kommunikationstechnologien andererseits. Ziel der Tagung ist es, innovative Forschungsergebnisse zu diskutieren, den Informationsaustausch zwischen Wissenschaft und Praxis zu fördern, Forschungsaktivitäten und Ausbildung anzuregen sowie Wissenschaft, Praxis und Öffentlichkeit für die Relevanz nutzungs- und aufgabengerechter Technikgestaltung zu sensibilisieren. Hauptsächlich englischsprachige Fachbeiträge und deren Veröffentlichung in der „ACM Digital Library“¹ bzw. Digitalen Bibliothek der GI² fördern die weltweite Sichtbarkeit der wissenschaftlichen Resultate der MuC.

Träger der Konferenz sind der Fachbereich Mensch-Computer-Interaktion der **Gesellschaft für Informatik (GI e.V.)** und die **German UPA** – der Berufsverband der Deutschen Usability und User Experience Professionals. 2022 darf die Technische Universität Darmstadt lokaler Ausrichter der Konferenz sein. Das passt hervorragend, denn der Fachbereich Informatik der TU Darmstadt feiert 2022 sein 50-jähriges Jubiläum – als eine der ältesten Informatik-Fakultäten in Deutschland. Im Wintersemester 1971 starteten die ersten 67 Studierenden der damaligen TH Darmstadt in den neuen Diplomstudiengang Informatik und legten damit ein wichtiges Fundament für die Gründung des Fachbereichs Informatik am 15. Mai 1972. Es folgten die bundesweit erste Diplomarbeit, Dissertation und Habilitation im Fach Informatik. Heute ist der Fachbereich mit fast 4000 eingeschriebenen Studierende einer der führenden Informatik-Standorte in Deutschland. Neben den Schwerpunkten IT-Sicherheit, künstliche Intelligenz und vernetzte Systeme spielt die Mensch-Computer-Interaktion im Fachbereich eine immer wichtigere Rolle, was sich auch in der Ausrichtung neu eingerichteter Fachgebiete widerspiegelt.

Das diesjährige Konferenzmotto „Facing Realities“ erinnert zunächst an die steigende Bedeutung virtueller, angereicherter und gemischter Realitäten (VR/AR/XR) für das Zusammenspiel zwischen Mensch und Computer. Die Verwendung des Wortes „Realities“ in der Mehrzahl weist darauf hin, dass mit zunehmender Qualität digitaler Artefakte die Grenzen zwischen digitalen Welten und analoger Welt verschmelzen, so dass Menschen alternativen Realitäten begegnen können. Das real Existierende und das digital Erfahrene

¹<https://dl.acm.org/conference/muncd/proceedings>

²<https://dl.gi.de/handle/20.500.12116/100>

sind dabei womöglich nicht mehr unterscheidbar, was im Zeitalter der Fake News aufhorchen lässt. Deshalb soll das Wort „Facing“ in doppelter Bedeutung verstanden werden: einerseits arbeiten wir am Fortschritt der computerbasierten oder -angereicherten Realitäten, in welche Menschen als Nutzende eintreten, andererseits müssen wir uns der Verantwortung stellen, mit alternativen Realitäten auch manipulierbare Wahrheiten und Lebenswelten zu ermöglichen. Wir freuen uns, wenn die MuC'22 auch diese kritische Wortbedeutung mehr in den Fokus der freien Wissenschaft und Gesellschaft rückt.

Dieses Jahr wurden 84 Langbeiträge (Full Paper) eingereicht, von denen 28 akzeptiert werden konnten (Akzeptanzrate 33%). Von den 97 eingereichten Kurzbeiträgen (Short Papers) wurden 46 akzeptiert (Akzeptanzrate: 47%). Die MuC besteht aber auch dieses Jahr nicht nur aus Fachvorträgen: 16 Demos (bei 21 Einreichungen; Akzeptanzrate 76%), 14 Workshops, drei Tutorien, ein Doktorand*innen-Seminar mit 10 Teilnehmenden und erst-malig eine Student Research Competition mit sechs Beiträgen sind ebenfalls Teil des Programms. Die MuC'22 bietet den Teilnehmenden auch innerhalb von Ausstellungen und Demonstrationen vielfältige Gelegenheiten, um den aktuellen Stand der Forschung zu präsentieren und zu erleben sowie mit Gleichgesinnten aus Forschung und Praxis zu diskutieren.

Wir sind tief beeindruckt von der grandiosen Zusammenarbeit und Mitwirkung aller Mitglieder des Organisations- und Programmkomitees. Die Organisation der MuC'22 wäre ohne diese wundervolle Teamarbeit nicht möglich gewesen. Wir möchten deshalb allen ganz herzlich danken, die einen Beitrag zur diesjährigen MuC geleistet haben. Wir wünschen und sind überzeugt, dass von der Konferenz wichtige Impulse ausgehen werden.

Prof. Dr. Max Mühlhäuser & Prof. Dr. Christian Reuter, MuC'22 General Chairs

Prof. Dr. Bastian Pfleging, MuC'22 Technical Program Chair

Prof. Dr. Thomas Kosch & Dr. Andrii Matviienko, MuC'22 Coordination Chairs



Welcome to “Mensch und Computer 2022” from September 4-7, 2022 in Darmstadt, Germany.

The “Mensch und Computer” (MuC) conference, launched in 2001, is the largest conference series on human-computer interaction in Europe. MuC offers participants from science and industry a platform for contributions and discussions on innovative forms of interaction between people and digital technology, on human-centered development methods, interactive applications, and other topics in the field between users, teams and communities on the one hand and information and communication technologies used on the other hand. The aim of the conference is to discuss innovative research results, to promote the exchange of information between academia and practitioners, to stimulate research activities and training, and to sensitize science, practice, and the public to the relevance of human- and task-oriented technology design. Mainly English-language technical papers and their publication in the “ACM Digital Library”³ or Digital Library of the GI⁴ promote the worldwide visibility of the scientific results of MuC’22.

The conference is sponsored by the Special Interest Group on Human-Computer Interaction in the German Informatics Society (GI e.V.) and the German UPA - the professional association of German usability and user experience professionals. In 2022, the Technical University of Darmstadt will be the local host of the conference. This is a perfect fit, because the Department of Computer Science at TU Darmstadt will celebrate its 50th anniversary in 2022 - as one of the oldest computer science faculties in Germany. In the winter semester of 1971, the first 67 students from the (previously named) TH Darmstadt started the new diploma program in computer science, laying an important foundation for the founding of the Department of Computer Science on May 15, 1972. This was followed by the first diploma thesis, dissertation, and habilitation in computer science in Germany. Today, with almost 4000 enrolled students, the department is one of the leading computer science locations in Germany. In addition to the focus on IT security, artificial intelligence and networked systems, human-computer interaction is playing an increasingly important role in the department, which is also reflected in the orientation of newly established research groups.

This year’s conference theme, “Facing Realities,” first reminds us of the increasing importance of virtual, augmented, and mixed realities (VR/AR/XR) for human-computer interaction. The use of the word “realities” in the plural indicates that as the quality of digital artifacts increases, the boundaries between digital worlds and analog worlds are blurring, allowing people to encounter alternative realities. In this process, the real existing and the digitally experienced may no longer be distinguishable, which makes us sit up and take notice in the age of Fake News. Therefore, the word “facing” should be understood in a double

³<https://dl.acm.org/conference/muncd/proceedings>

⁴<https://dl.gi.de/handle/20.500.12116/100>

meaning: on the one hand, we are working on the progress of computer-based or -enriched realities into which people enter as users; on the other hand, we have to face the responsibility of enabling manipulable truths and living environments with alternative realities. We are happy if MuC'22 also brings this critical word meaning more into the focus of science and society.

This year, 84 full papers were submitted, of which 28 were accepted (acceptance rate 33%). Of the 97 short papers submitted, 46 were accepted (acceptance rate: 47%). This year's MuC does not only consist of technical presentations: 15 demos (out of 21 submissions; acceptance rate 71%), 14 workshops, three tutorials, a PhD seminar with 10 participants and for the first time a Student Research Competition with 6 contributions are also part of the program. MuC'22 also offers participants a variety of opportunities within exhibitions and demonstrations to present and experience the current state of research and to discuss with peers from research and practice.

We are deeply impressed by the terrific collaboration and participation of all members of the organizing and program committee. The organization of MuC'22 would not have been possible without this wonderful teamwork. We would therefore like to express our heartfelt thanks to everyone who contributed to this year's MuC. We wish and are convinced that important impulses will emanate from the conference.

Prof. Dr. Max Mühlhäuser & Prof. Dr. Christian Reuter, MuC'22 General Chairs

Prof. Dr. Bastian Pfleging, MuC'22 Technical Program Chair

Prof. Dr. Thomas Kosch & Dr. Andrii Matviienko, MuC'22 Coordination Chairs

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Christian Reuter, TU Darmstadt, Germany

Coordination Chairs

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Wilko Heuten, OFFIS – Institute for Information Technology, Germany

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Uwe Grünefeld, University of Duisburg-Essen, Germany

Thomas Kosch, Utrecht University, the Netherlands

Organizing Committee

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Martin Schmitz, Saarland University, Germany

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Hans Gellersen, Aarhus University, Denmark

Student Research Competition

Ceenu George, LMU Munich, Germany

Jakob Karolus, LMU Munich, Germany

Jan Gugenheimer, TU Darmstadt, Germany

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