



MENSCH UND COMPUTER 2022

FACING REALITIES

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MENSCH UND COMPUTER 2022: Facing Realities

TAGUNGSBAND PROCEEDINGS



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Table of Contents

Vorwort	xi
Foreword	xiii
Organizing Committee	xv
Associate Chairs – Full Paper	xix
Program Committee – Full Paper	xxi
Associate Chairs – Short Paper	xxiii
Program Committee – Short Paper	xxv
Program Committee – Demos	xxvii

Session 1: Privacy, Security, and Safety

Online Service Switching Intentions and Attitudes towards Data Portability – The Role of Technology-related Attitudes and Privacy Luzsa, Robert; Mayr, Susanne; Syrmoudis, Emmanuel; Grossklags, Jens; Kübler-Wachendorff, Sophie; Kranz, Johann	1
Alexa, It’s Me! An Online Survey on the User Experience of Smart Speaker Authentication Renz, Andreas; Baldauf, Matthias; Maier, Edith; Alt, Florian	14
Perceptions and Use of Warning Apps – Did Recent Crises Lead to Changes in Germany? Haunschild, Jasmin; Kaufhold, Marc-André; Reuter, Christian	25
Mid-Air Haptic Cues for Safety-Critical Communication: (Re-)Exploring Air-Vortex Rings in Human-Machine Interaction Hein, Philipp; Gönültas, Dursune; Bernhagen, Max; Dettmann, André; Bullinger, Angelika C.	41

Session 2: Tools and Technology	52
FADER: An Authoring Tool for Creating Augmented Reality-Based Avatars from an End-User Perspective Krings, Kevin; Weber, Philip; Jasche, Florian; Ludwig, Thomas	52
Tooling for Developing Data-Driven Applications: Overview and Outlook Weber, Thomas; Hußmann, Heinrich.....	66
Cobity: A Plug-And-Play Toolbox to Deliver Haptics in Virtual Reality Villa, Steeven; Mayer, Sven.....	78
The Gesture Authoring Space: Authoring Customised Hand Gestures for Grasping Virtual Objects in Immersive Virtual Environments Schäfer, Alexander; Reis, Gerd; Stricker, Didier.....	85
Auto-Generating Multimedia Language Learning Material for Children with Off-the-Shelf AI Draxler, Fiona; Haller, Laura; Schmidt, Albrecht; Chuang, Lewis L.	96
 Session 3: Participation and Inclusion	
„Es geht um Respekt, nicht um Technologie“: Erkenntnisse aus einem Interessensgruppen-übergreifenden Workshop zu genderfairer Sprache und Sprachtechnologie Burtscher, Sabrina; Spiel, Katta; Klausner, Lukas Daniel; Lardelli, Manuel; Gromann, Dagmar	106
Accessible Mobile Map Application and Interaction for People with Visual or Mobility Impairments Rottmann, Sebastian; Loitsch, Claudia; Weber, Gerhard.....	119
To Go or not to Go? A Participatory Approach to Digitally Augmenting Museum Experiences Hemmert, Fabian; Fineder, Martina; Cezanne, Fabienne; Cho, Ye Eun; Hagemeyer, Helena; Hungerkamp, Anja; Lischka, Tobias; Nievelstein, Caroline; Strauch, Maike; van den Berg, Luis; Weber, Nora.....	128
Negotiating Taste for Digital Depiction: Aligning Individual Concepts of Taste Perception in a Co-Design Process Berkholz, Jenny; Esau-Held, Margarita; Stevens, Gunnar.....	137
Tangible Interfaces Support Young Children’s Goal Interdependence Li, Yanhong; Gao, Zhenhan; Egger, Sabrina; Mayer, Sven; Hussmann, Heinrich	147
 Session 4: Artificial Intelligence	
The Human in the <i>Infinite Loop</i>: A Case Study on Revealing and Explaining Human-AI Interaction Loop Failures Ou, Changkun; Buschek, Daniel; Mayer, Sven; Butz, Andreas	158
Activity Recognition over Temporal Distance using Supervised Learning in the Context of Dementia Diagnostics: Aktivitätserkennung über zeitliche Distanz mittels Supervised Learning im Kontext der Demenzdiagnostik Staab, Sergio; Bröning, Lukas; Luderschmidt, Johannes; Martin, Ludger	169

Table of Contents

Using Artificial Neural Networks to Compensate Negative Effects of Latency in Commercial Real-Time Strategy Games Halbhuber, David; Seewald, Maximilian; Schiller, Fabian; Götz, Mathias; Fehle, Jakob; Henze, Niels.....	182
Suggestion Lists vs. Continuous Generation: Interaction Design for Writing with Generative Models on Mobile Devices Affect Text Length, Wording and Perceived Authorship Lehmann, Florian; Markert, Niklas; Dang, Hai; Buschek, Daniel.....	192
Sign H3re: Symbol and X-Mark Writer Identification Using Audio and Motion Data from a Digital Pen Schrapel, Maximilian; Grannemann, Dennis; Rohs, Michael.....	209

Session 5: Augmented Reality, Virtual Reality, and Natural Interaction

An AR User Interface for the Evaluation of Visuospatial Abilities Imenkamp, Charlotte; Hanert, Annika; Schönfeld, Robby; Bartsch, Thorsten; Woelk, Felix	219
A Touch of Realities: Car-Interior-Based Haptic Interaction Supports In-Car VR Recovery from Interruptions Li, Jingyi; Hirsch, Linda; Lu, Tianyang; Mayer, Sven; Butz, Andreas	229
A Survey of Natural Design for Interaction Hirsch, Linda; Li, Jingyi; Mayer, Sven; Butz, Andreas	240
The Impact of Varying Resolution and Motion Realism of Avatars in Augmented Reality-Supported, Virtually Co-located Sales Consultations Brown, Gordon; Hust, Julien; Büttner, Sebastian; Prilla, Michael	255

Session 6: Usability and User Experience

Development and Validation of a German Version of the Player Experience Inventory (PXI) Graf, Linda; Altmeyer, Maximilian; Emmerich, Katharina; Herrlich, Marc; Krekhov, Andrey; Spiel, Katta.....	265
Examining Joy of Use and Usability During Mobile Phone Interactions within a Multimodal Methods Approach Lingelbach, Katharina; Tagalidou, Nektaria; Markey, Patrick S.; Föll, Bettina; Peissner, Matthias; Vukelić, Mathias	276
The Effects of Auditory Latency on Experienced First-Person Shooter Players Halbhuber, David; Köhler, Annika; Schmidbauer, Markus; Wiese, Jannik; Henze, Niels	286
The Influence of Unequal Chatbot Treatment on Users in Group Chat Goetz, Marie; Wolter, Kathrin; Prilla, Michael	297
Enthusiasts, Pragmatists, and Skeptics: Investigating Users' Attitudes Towards Emotion- and Personality-Aware Voice Assistants across Cultures Ma, Yong; Abdelrahman, Yomna; Petz, Barbarella; Drewes, Heiko; Alt, Florian; Hussmann, Heinrich; Butz, Andreas.....	308

Posters: Short Papers

Life-Death Interfaces: Tangible Ways of Legacy-Making, Grief, and Remembrance Hemmert, Fabian; Görts, Alexander; Horst, Jana; Park, So Jeong; Sion, Tom.....	323
Usability and User Experience of Medical Devices – Insights from Laypersons and Healthcare Professionals Freier, Henrike; Gerhards, Lisa M.; Sondern, Dominik; Schwenke, Stephanie; Thielsch, Meinald.....	328
Side Effects of Increasing Participation in a Contextual Design Process: A Knowledge Management Case Study Papenfuß, Nathalie; Spangenberg, Carina; Huber, Stephan	333
Elevating Stress Levels – Exploring Multimodality for Stress Induction in VR Weiß, Sebastian; Kimmel, Simon; Withöft, Ani; Jung, Frederike; Boll, Susanne; Heuten, Wilko	338
Gaze-Controlled Instructions for Manual Assembly Tasks – A Usability Evaluation Study Tonn, Solveig; van Duijn, Antonia; Schaaf, Moritz; Kunde, Wilfried	343
Collaborating in a Crisis: Perspectives on Trust and Technological Framework in Organising a COVID-19 Online Hackathon Karhu, Mari; Karampela, Maria; Häkkinen, Jonna	349
A Cautionary Tale About AI-Generated Goal Suggestions Lieder, Falk; Chen, Pin-Zhen; Stojcheski, Jugoslav; Consul, Saksham; Pammer-Schindler, Viktoria	354
Links Between Online Privacy Fatigue, Technology Attitudes and Sociodemographic Factors in a German Population Sample Luzsa, Robert; Mayr, Susanne	360
The Negative Effect on Postural Ergonomics of Non-Sedentary Workplace Desks in Virtual Reality Sehrt, Jessica; Neumann, Henrico Putra; Wenzel, Julian Niclas; Kindermann, Luca; Schwind, Valentin.....	365
WristConduct: Biometric User Authentication Using Bone Conduction at the Wrist Sehrt, Jessica; Lu, Feng Yi; Husske, Leonard; Roesler, Anton; Schwind, Valentin	371
Untraining Ethnocentric Biases about Gender Roles: A Preliminary Empirical Study Presenting Art as Stimulus Albaghli, Reem; Chang, Chaz; Almahmeed, Sarah; Attar, Nada	376
Hey, Siri® ! Ok, Google® ! Does Talking to Voice Assistants Enhance Emotional Aspects of Mobile Phone User Experience? Arlinghaus, Clarissa Sabrina; Ollermann, Frank	382
What do Construction Workers Know about Artificial Intelligence? An Exploratory Case Study in an Austrian SME Maitz, Katharina; Fessler, Angela; Pammer-Schindler, Viktoria; Kaiser, Rene; Lindstaedt, Stefanie.....	389
Informed ShoppAR – Visualizing Privacy Information in Augmented Reality Kaiser, Jonah-Noël; Marianski, Thu; Jung, Frederike; Woźniak, Mikołaj P.; Boll, Susanne	394

Table of Contents

Simultaneously Fostering Computational Thinking and Social-Emotional Competencies in 4th Graders Using Scratch: A Feasibility Study Maitz, Katharina; Paleczek, Lisa; Danielowitz, Claudia	399
Creation of In-Situ Instructions Made Easy: Development and Evaluation of a Prototypical AR Tool Wienrich, Carolin; Roß, Valentin; Baumeister, Joachim	404
Digital Security Story Cards for Women with a Refugee and Migrant Background Ciciolli, Belén Giménez; Rüller, Sarah; Aal, Konstantin; Thakur, Shikha; Kocaker, Ahmet; Haro, Carolina; Rai, Parmarth; Wulf, Volker	409
“Hopohopo”: A Virtual Reality Awareness Application about Social Anxiety Disorder Maué, Rahel; Flechtner, Rahel.....	420
How to Design User-Centered Decision Support Systems in Public Budgeting? Guidelines and a Web-Based Prototype with First Insights from a Mixed-Methods Study Tasche, Niklas; Dhungel, Anna-Katharina; Heine, Moreen.....	425
Zoomorphic Robots and People with Disabilities Helm, Melina; Carros, Felix; Schädler, Johannes; Wulf, Volker	431
Rescue on the Road: Design Recommendations for Vehicle Assistant Systems to Support Effective First Aid Measures Detjen, Henrik; Schneegass, Stefan.....	437
Emergency Alerting Through Smartphone Apps: Functions, Usage and Usability Issues from the First Responder’s Point of View von der Linde, Mira; Nospickel, Paulin M.; Göcke, Melanie; Thielsch, Meinald T.	442
Pop-Up Probes: Using Pop-up Paper Elements for Cultural Probes to Understand Domestic Routines Schulz, Annika Sabrina, A.S.; Hornecker, Eva, E.H.	447
Stretching Projection – Projection-based Visual Control and Support for Sports Exercises: Projektionsbasierte visuelle Kontrolle und Unterstützung bei Sportübungen Franke, Ingmar S.; Elze, Annika; McGinity, Matthew	452
Correlation Between Heart Rate, Skin Temperature and Emotional State in Exergames Bruns, Fenja T.; Wallhoff, Frank.....	457
A Speech-Based AI for Political Participation Eine sprachbasierte KI für politische Beteiligung Bräuer, Paula; Mazarakis, Athanasios	462
Personalized Motion Analysis with Consideration of Body Segment Shapes Greve, Daniel; Tiator, Marcel; Kreischer, Christian; Geiger, Christian	467
“Do Metaphors Influence the Usability of Access Control?”: A Gamified Survey. Obrezkov, Denis; Sohr, Karsten; Malaka, Rainer	472
Unfolding Values through Systematic Guidance: Conducting a Value-Centered Participatory Workshop for a Patient-Oriented Data Donation Leimstädtner, David; Sörries, Peter; Müller-Birn, Claudia.....	477

Table of Contents

MultiKnob — A Knob for Multiplexing Rotation Inputs by Multitouch-based Grasp Recognition Gellert, Edgar; Petersen, David; Böhmer, Matthias	483
“I Want My Control Room To Be. . .”: On the Aesthetics of Interaction in a Safety-Critical Working Environment Flegel, Nadine; Pöhler, Jonas; Van Laerhoven, Kristof; Mentler, Tilo	488
Sentiment Analysis of Participants Interactions in a Hackathon Context: The Example of a Slack Corpus Feislachen, Sarah; Garus, Philip; Wang, Hong; Podkolin, Eduard; Schlüter, Sarah; Schulze Bernd, Nadine; Nolte, Alexander; Manske, Sven; Chounta, Irene-Angelica	493
Adopting Just Another Digital Assistant or Establishing Social Interactions with a New Friend?: Conceptual Research Model of a Long-Term Analysis of First-Time Users’ Adoption and Social Interactions with Smart Speakers Carolus, Astrid; Wienrich, Carolin	498
Designing Gaze-Aware Attention Feedback for Learning in Mixed Reality Liu, Shi; Toreini, Peyman; Maedche, Alexander	503
Supporting Gender-Neutral Writing in German Diesner-Mayer, Theodor; Seidel, Niels	509
Analyzing Eye Tracking Data in Mirror Exposure Döllinger, Nina; Göttfert, Christopher; Wolf, Erik; Mal, David; Latoschik, Marc Erich; Wienrich, Carolin.....	513
Usability and User Experience of Virtual Objects Supporting Learning and Communicating in Virtual Reality Hein, Rebecca; Latoschik, Marc Erich; Wienrich, Carolin.....	518
Physics-Based Hand-Object-Interaction for Immersive Environments Kaminski, Elias; Keppler, Sebastian; Israel, Johann Habakuk	523
Lessons Learnt from Using Electrical Muscle Stimulation to Actuate Agonist and Antagonist Muscle Pairs Faltaous, Sarah; Vogel, Justin; Giesler, Marco; Schneegass, Stefan	528
Give Weight to VR: Manipulating Users’ Perception of Weight in Virtual Reality with Electric Muscle Stimulation Faltaous, Sarah; Prochazka, Marvin; Auda, Jonas; Keppel, Jonas; Wittig, Nick; Gruenefeld, Uwe; Schneegass, Stefan	533
UNeeds: Development of Scales to Measure the Satisfaction and Frustration of 13 Fundamental Needs Wolf, Sara; Maas, Franzisca; Künzl, Pauline; Hohm, Anna; Hurtienne, Jörn.....	539
Autonomous Driving – Analysing the Impact of Resilience Engineering Features in Smart Car Interfaces Pasnica, Otilia; Zmmermann, Verena; Gerber, Nina; Cardoso, Sarah.....	545
WearEC Kits: Designing Toolkits for Exploring Subtle Visual Outputs on Wearables with Electrochromic Displays Genç, Çağlar; Havlucu, Hayati; Puro, Elina; Colley, Ashley; Häkkinen, Jonna	550
Ethical Challenges in Inclusive Software Development Projects with People with Cognitive Disabilities: Ethische Herausforderungen in inklusiven Softwareentwicklungsprojekten mit Menschen mit kognitiven Beeinträchtigungen Dirks, Susanne	556
Requirements for AI Support in Occupational Safety Risk Analysis Westhoven, Martin	561
Towards Human-Robotic Collaboration: Observing Teamwork of Experienced Surgeons in Robotic-Assisted Surgery Cypko, Mario A.; Timmermann, Lea; Sauer, Igor M.; Müller-Birn, Claudia.....	566

Demos: Interactive Systems or Demonstrators

Footprints Without Borders: An Interactive Installation for Tangible Communication About Consumption-Based CO₂ Emissions in an Exhibition Context: Footprints Without Borders: Eine interaktive Installation zur greifbaren Kommunikation nachfragebasierter CO₂-Emissionen im Ausstellungskontext	
Merkle, Anne F.; Herzog, Michael A.; Schumacher, Dominik	572
Casino Melanoma – Gamble with Your Life: An Interactive Roulette Game to Raise Awareness of Individual Skin Cancer Risk: Casino Melanom – Spiel mit Deinem Leben: Ein interaktives Roulette-Spiel zur Sensibilisierung des individuellen Hautkrebsrisikos	
Renz, Lisa; Herzog, Michael A.; Schumacher, Dominik	576
How to Induce a Physical and Virtual Rubber Hand Illusion	
Kalus, Alexander; Kocur, Martin; Bogon, Johanna; Henze, Niels; Schwind, Valentin	580
Demonstration of an Infrared Pen as an Input Device for Projected Augmented Reality Tabletops	
Maierhöfer, Vitus; Schmid, Andreas; Wimmer, Raphael.....	584
Browser-Based, VR-Enhanced Vocational Training of Nursing Staff With and Without Migration Background: Browserbasierte, VR- gestützte Ausbildung von Pflegepersonal mit und ohne Migrationshintergrund	
Hentschel, Tino; Neuhöfer, Jan	587
Demonstrating MagneTisch: Tangibles in Motion on an Interactive Surface	
Günther, Sebastian; Nelles, Frank; Horn, Florian; Mühlhäuser, Max	590
Immersive Experience of Multidimensional Data using Mixed Reality based Scatterplots	
Pothast, Jonas; Grimm, Valentin; Rubart, Jessica.....	594
WeHub: The Social Center of Smart Homes	
Großkopp, Sabrina, SG; zum Hoff, Tim, TZH; Gerhardt, Emil Cyrill, ECG; Malburg, Tina, TM.....	597
A Digital Application for Digital Natives to Improve Orientation Competence and Career Choice Decisions: Eine Digitale Applikation für Digital Natives zur Verbesserung der Orientierungskompetenz und Berufswahlentscheidung	
Brandenburger, Jessica; Mergan, Hamid; Schametat, Jan; Vergin, Annika; Engel, Alexandra; Janneck, Monique	601
A Gamification Design Tool to Improve Design Quality	
Grimm, Valentin	605
A Virtual Environment for Emergency Ultrasound Training during Cardiopulmonary Resuscitation	
Bublak, Thomas; Bofferding, Marie; Olson, Christopher; Jonas, Henk; Rademeier, Jannis; Hansen, Christian.....	608
IDEA: A Demonstration of a Mixed Reality System to Support Living with Central Field Loss	
Lang, Florian; Grootjen, Jesse W.; Chuang, Lewis L.; Machulla, Tonja	611
Prototypes for E-government Websites to Support the Digital Sovereignty of Citizens	
Wessel, Daniel; Claudy, Sandra; Hanke, Karlson; Herzog, Christian; Preiß, Robin; Wegner, Christiane; Heine, Moreen	615
BotOrNot: A Platform for Conducting Experiments with Undisclosed Chat Agents	
Hanschmann, Leon; Gnewuch, Ulrich; Maedche, Alexander.....	618
AID-Watch – Smartwatch for People with Cognitive Impairments	
Kuon, Alexander; Schneider, Rahel; Wendt, Hauke	622



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>

Vorwort

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



**MENSCH UND
COMPUTER
2022**
FACING REALITIES

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/mundc/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

Organizing Committee

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Christian Reuter, TU Darmstadt, Germany

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Thomas Kosch, Utrecht University, the Netherlands

Andrii Matviienko, TU Darmstadt, Germany

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Bastian Pflöging, TU Bergakademie Freiberg, Germany

Program Chairs Praktiker-Tracks

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Monika Gillessen, German UPA e.V., Germany

Clemens Lutsch, German UPA e.V., Germany

Paper Chairs

Kathrin Gerling, KU Leuven, Belgium

Sven Mayer, LMU Munich, Germany

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