# **CONFERENCE PROGRAM**



**2017 MUMBAI** 

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## Welcome to INTERACT 2017

The 16<sup>th</sup> IFIP TC13 International Conference on Human-Computer Interaction, INTERACT 2017 Mumbai, is being held from September 25 to 29, 2017 in the beautiful campus of the Indian Institute of Technology, Bombay (IIT Bombay).

The theme of Interact 2017 is 'Global Thoughts, Local Designs'. The theme is designed to let HCI researchers respond to challenges emerging in the new age of global connectivity, where they often design products for users who are beyond their borders belonging to distinctly different cultures. As organizers of the conference, we are focusing our attention on four areas: India, developing countries, students, and research.

INTERACT 2017 made a conscious effort to lower barriers that prevent people from developing countries to participate in conferences. Thinkers and optimists believe that all regions of the world can achieve human development goals. Information and communication technologies (ICTs) can support this process and empower people to achieve their full potential. Today, ICT products have many new users and many new uses, but also present new challenges and provide new opportunities. It is no surprise that HCI researchers are showing great interest in these emergent users. INTERACT 2017 provides a platform to explore these challenges and opportunities, and also makes it easier for people from developing countries to participate. We have also introduced a new track called Field Trips which allows participants to directly engage with stakeholders within the context of a developing country.

Students represent the future of our community. They bring in new energy, enthusiasm and fresh ideas. But it is often hard for students to participate in international conferences. INTERACT 2017 made special efforts to bring students to the conference. The conference had low registration costs and several volunteering opportunities. Thanks to our sponsors, we could provide several travel grants. Most importantly, INTERACT 2017 has special tracks such as Installations, Student Design Consortium, and Student Research Consortium that give students the opportunities to showcase their work.

Finally, great research is the heart of a good conference. Like its predecessors, INTERACT 2017 aims to bring together high quality research. As a multidisciplinary field, HCI requires interaction and discussion among diverse people with different interests and backgrounds. The beginners and the experienced, theoreticians and

practitioners, and people from diverse disciplines and different countries gather together in Mumbai to learn from each other and to contribute to each other's growth. We thank all the authors who chose INTERACT 2017 as the venue to publish their research.

We received a total of 571 submissions distributed in 2 peer-reviewed tracks, 5 curated tracks, and 7 juried tracks. Of these, the following contributions were accepted:

- 68 Full Papers (Peer-reviewed)
- 51 Short Papers (Peer-reviewed)
- 13 Case Studies (Curated)
- 20 Industry Presentations (Curated)
- 7 Courses (Curated)
- 5 Demonstrations (Curated)
- 3 Panels (Curated)
- 9 Workshops (Juried)
- 7 Field Trips (Juried)
- 11 Interactive Posters (Juried)
- 9 Installations (Juried)
- 6 Doctoral Consortium (Juried)
- 15 Student Research Consortium (Juried)
- 6 Student Design Consortium (Juried)

The acceptance rate for contributions received in the peer reviewed tracks was 30.7% for full papers and 29.1% for short papers.

INTERACT 2017 is made possible by the persistent efforts across several months by 49 chairs, 39 associate chairs, 55 student volunteers and 499 reviewers; and the generous support of our sponsors and partners. We thank them all.

Hope you enjoy the conference!

### Anirudha Joshi & Girish Dalvi

(General Co-chairs, INTERACT 2017)

## Marco Winckler

(Technical Program Chair, INTERACT 2017)

# Day 1 | Monday, September 25

8:00 AM	Registration Opens
8:30 AM	Workshops: WS1 (Lecture Hall 22), WS4 (Lecture Hall 23), WS10 (Lecture Hall 31),
	WS11 (Lecture Hall 21),
	Field Trips: FT1, FT3, FT4, FT9
11:00 AM	Tea
11:30 AM	Workshops (continued)
	Field Trips (continued)
	Student Design Consortium (Lecture Hall 33)
12:50 PM	Lunch
2:00 PM	Workshops (continued)
	Field Trips (continued)
3:20 PM	Tea
3:50 PM-5:10 PM	Workshops (continued)
	Field Trips (continued)
6:00 PM-8:00 PM	Freshies' Night (Professor B. Nag Auditorium)

# Day 2 | Tuesday, September 26

8:00 AM	Registration Opens
8:30 AM	Workshops: WS6 (Lecture Hall 22), WS9 (Lecture Hall 31), WS11 (Lecture Hall 21),
	WS13 (Lecture Hall 32), WS14 (Lecture Hall 32)
	Field Trips: FT1, FT4, FT5, FT9, FT10
	Symposium: Asian HCI Research (Professor B. Nag Auditorium)
	Doctoral Consortium (Lecture Hall 33)
11:00 AM	Tea
11:30 AM	Workshops (continued)
	Field Trips (continued)
	Symposium: Asian HCI Research (continued)
	Doctoral Consortium (continued)
12:50 PM	Lunch
2:00 PM	Workshops (continued)
	Field Trips (continued)
	Symposium: Asian HCI Research (continued)
	Doctoral Consortium (continued)
3:20 PM	Tea
3:50 PM-5:10 PM	Workshops (continued)
	Field Trips (continued)
	Symposium: Asian HCI Research (continued)
	Doctoral Consortium (continued)
5:30 PM	Dance Classes for Dandia Night (VMCC Terrace, Second Floor)

# Day 3 | Wednesday, September 27

	Lecture Hall 21	Lecture Hall 22	Lecture Hall 23	
7:30 AM	Registration Opens			
8:30 AM Plenary	Opening Keynote (Professor B. Nag Auditorium)  Albrecht Schmidt: Amplifying Human Abilities: Digital Technologies to Enhance Perception and Cognition			
<b>10:30 AM</b> Tea	Posters, Demonstrations, a	Posters, Demonstrations, and Installations open (Ground & First Floor)		
11:00 AM Session I	1a (Papers): Human perception, cognition, and behaviour	1b (Papers): UX adoption in the organizations	<i>1c (Papers):</i> Personalization and visualization	
12:20 PM	Lunch (VMCC Terrace, Second Floor)			
1:30 PM Session 2	2a (Papers): Methods and tools for user interface evaluation	2b (Papers): Interaction at the workplace	2c (Papers): Co-design studies	
<b>2:50 PM</b> Plenary	Invited Talk (Professor B. Nag Auditorium)  Rama Bijapurkar: Understanding Consumer India and what businesses need to do to serve them better			
<b>4:00 PM</b> Tea	Posters, Demonstrations, and Installations (Ground & First Floor)			
<b>4:30 PM</b> Session 3	3a (Papers): Virtual Reality and feeling of immersion	3b (Papers): Security and trust	3c: Panel 1: Different shades of user involvement	
6:30 PM-8:00 PM	Dandia Night (VMCC Terrace, Second Floor)			

Lecture Hall 31	Lecture Hall 32	Lecture Hall 33
1d (Course): C4: Children Participating in HCI Research	1e (Course): C7: Designing a Successful Product with Design Sprint	
2d (Course): C1: The Science behind User Experience Design (1/2)	<i>2e:</i> Case studies of mobile applications and interaction in the move	2f: Student Research Consortium
3d (Course): C1: The Science behind User Experience Design (2/2)	3e: Industry Presentations I	3f: Student Research Consortium

# Day 4 | Thursday, September 28

	Lecture Hall 21	Lecture Hall 22	Lecture Hall 23	
7:30 AM	Registration Opens			
8:30 AM	Invited Talk (Professor B. Nag Auditorium)  Gerrit van der Veer: Human-Computer Interaction—the Life and Times, and the History			
<b>9:40 AM</b> Session 4	4a (Papers): Audience engagement	4b (Papers): Mediated communication in eHealth	4c (Papers): Social media and design innovation	
11:00 AM Tea	Posters, Demonstrations, and Installations (Ground & First Floor)			
11:30 AM Session 5	5a (Papers): Information on demand, on the move, and gesture interaction	5b (Papers): Assistive technology for blind users	5c (Papers): New interaction techniques	
12:50 PM	Lunch (VMCC Terrace, Second Floor)			
2:00 PM Session 6	6a (Papers): Games	6b (Papers): Persuasive technology and rehabilitation	6c: Panel 2: Novel Interfaces and Future Applications	
<b>3:20 PM</b> Tea	Posters, Demonstrations, and Installations (Ground & First Floor)			
<b>3:50 PM</b> Plenary	Invited Talk (Professor B. Nag Auditorium) <b>Devdutt Pattanaik:</b> Designing a 'Mahabharata for Children'—Challenges			
5:10 PM	Adobe Sponsor Tutorial		IIT Bombay Campus Walk	
5:30 PM		HCIPAI Member Meet		
7:00 PM	Conference Dinner at Meluha The Fern, Powai			

Lecture Hall 31	Lecture Hall 32	Lecture Hall 33
4d (Course): C2: Design of Location-based Mobile Games: Introduction (1/2)	4e: Industry Presentations II	
5d (Course): C2: Design of Location-based Mobile Games: Introduction (2/2)	5e: Industry Presentations III	
6d (Course): C5: Designing for Accessibility	6e: Case studies of interaction in meeting places and in classrooms	

# Day 5 | Friday, September 29

	Lecture Hall 21	Lecture Hall 22	Lecture Hall 23
7:30 AM	Registration Opens		
8:30 AM	Invited Talk (Professor B. Nag Auditorium)  Tom Gross: Towards Human-Centered Collaborative Computing		
<b>9:40 AM</b> Session 7	7a (Papers): Multitouch interaction	7b (Papers): Aging and disabilities	7c (Papers): Digital inclusion
<b>11:00 AM</b> Tea	Posters, Demonstrations, and Installations (Ground & First Floor)		
11:30 AM Session 8	8a (Papers): Pointing and target selection	8b (Papers): Interaction with children	8c (Papers): Cultural differences and communication technology
12:50 PM	Lunch (VMCC Terrace, Second Floor)		
<b>2:00 PM</b> Session 9	9a (Papers): Adaptive design and mobile applications	9b (Papers): Design rationale and camera- control	9c: Panel 3: Interactive Panel: Designing with Culture in Mind
<b>3:20 PM</b> Tea	Posters, Demonstrations, and Installations (Ground & First Floor)		
<b>3:50 PM-5:20 PM</b> Plenary	Closing Keynote (Professor B. Nag Auditorium)  Matt Jones: Weaving New Mobile UX Futures Through Integrated Innovation Across 3 Continents, 4 Countries and a Diversity of Perspectives		

Lecture Hall 31	Lecture Hall 32	Lecture Hall 33
7d (Course): C3: Designing and Assessing Interactive Systems Using Task Models (1/2)	7e: Industry Presentations IV	7f: Pitney Bowes Design Challenge— Final Presentations
8d (Course): C3: Designing and Assessing Interactive Systems Using Task Models (2/2)	8e: Industry Presentations V	8f: Field Trips Summary
9d (Course): C6: Introduction to Service Design for Digital Health	9e: Case studies of HCI in organizations	9f: Workshops Summary

## **Keynotes and Invited Talks**



# Albrecht Schmidt Computer Scientist and Professor

Amplifying Human Abilities: Digital Technologies to Enhance Perception and Cognition

Opening Keynote Wednesday, September 27 | 8:30 AM Venue: Professor B. Nag Auditorium Chair: Philippe Palangue

## Amplifying Human Abilities: Digital Technologies to Enhance Perception and Cognition

Historically, the use and development of tools is strongly linked to human evolution and intelligence. The last 10,000 years show a stunning progress in physical tools that have transformed what people can do and how people live. Currently, we are at the beginning of an even more fundamental transformation: the use of digital tools to amplify the mind.

Digital technologies provide us with entirely new opportunities to enhance the perceptual and cognitive abilities of humans. Many ideas, ranging from mobile access to search engines, to wearable devices for lifelogging and augmented realty application give as first indications of this transition.

In our research we create novel digital technologies that systematically explore how to enhance human cognition and perception. Our experimental approach is to: first, understand the users in their context as well as the potential for enhancement. Second, we create innovative interventions that provide functionality that amplifies human capabilities. And third, we empirically evaluate and quantify the enhancement that is gained by these developments. It is exciting to see how ultimately these new ubiquitous computing technologies have the potential for overcoming fundamental limitations in human perception and cognition.

## Speaker Bio

Albrecht Schmidt is a professor for Human Computer Interaction and Cognitive Systems at the University of Stuttgart. Previously he was a Professor for User Interface Engineering and Pervasive Computing at University of Duisburg-Essen.

In 2006/2007 he had a joined appointment between the University of Bonn and the Fraunhofer Institute for Intelligent Analysis and Information Systems (IAIS) working in the area of Media Informatics. He studied computer science in Ulm, Germany and Manchester, UK and receive in 2003 a PhD from the Lancaster University in the UK.

For the last 15 years Albrecht has been dedicated to creating usable systems. The focus of his current work is on novel user interfaces to enhance and amplify human cognition. He is working on interaction techniques and interactive applications in the context of mobile and ubiquitous computing, including new communication interfaces and user interfaces in the car.

Albrecht has published well over 200 refereed archival publications and his work is widely cited. He is cofounder of the ACM conference on Tangible and Embedded Interaction (TEI) and initiated the ACM conference on Automotive User Interfaces (auto-ui.org).

In 2014 Albrecht co-chaired the ACM SIGCHI program. He is on the editorial board of ACM ToCHI, edits a forum on interaction technologies in the ACM Interactions magazine, and has a column in the IEEE Pervasive Computing Magazine.

In 2016 Albrecht Schmidt received a ERC Consolidator Grant to work on the Project "AMPLIFY: Amplifying Human Perception Through Interactive Digital Technologies". ■



## Rama Bijapurkar Author, Consultant and Strategist

Understanding Consumer India and What Businesses Need to do to Serve Them Better

## Invited Talk

Wednesday, September 27 | 2:50 PM Venue: Professor B. Nag Auditorium Chair: Shashank Deshpande

## Understanding Consumer India and What Businesses Need to do to Serve Them Better

People who address Consumer India or People India and develop products for them need to get away from traditional/offer wrong mental models of what emerging market consumers are like or what poor people and uneducated people are like—what their capabilities are, what their priorities are, what their mindsets and life conditions are and so on.

India is a never-before world. Never-before in human history have we had so many young people with modest incomes and even more modest education, come of age post the birth of the Internet and the mobile and digital money, combined with pathetic infrastructure and informal service sector jobs.

The logic of this world of Consumer India is to be listened to, from the inside, in order to serve it better, and build capabilities and products and ideas that can be valuable in other markets too.

Sensible as all this seems, why do companies have trouble doing this? Even champion global companies?

## Speaker Bio

Ms. Bijapurkar is a recognized thought leader on market strategy and India's consumer economy, and is a keen commentator on social and cultural trends in fast-changing India. She has an independent management consulting practice and works with a range of global and domestic companies, across sectors, helping them in the development of their business-market strategy.

She has served as an independent director on the boards of several of India's blue chip companies. Past and present boards include Axis Bank, Crisil, Infosys, Bharat Petroleum, Godrej Consumer Products, Mahindra & Mahindra Financial Services Limited, ICICI Prudential Life Insurance Company Limited, Redington Gulf FZE, Titan Industries, Janalakshmi Financial Services, National Payments Corporation of India, Nestle India Ltd., etc.

She is also chairperson and co-founder of People Research on India's Consumer Economy a newly set up not-for-profit think tank and fact tank, dedicated to providing 'household and people-level' data and insights for business strategy and public policy.

Ms. Bijapurkar has a BSc Hons in Physics from Delhi University and a Post Graduate Diploma in Management from Indian Institute of Management, Ahmadabad. She has previously worked with MODE Services (now TNS India), MARG (now Nielsen India), McKinsey & Co. and also been a full time consultant with Hindustan Unilever Ltd.



# Gerrit van der Veer Emeritus Prof., Past President of ACM

Human-Computer Interaction—The Life and Times, and the History

# Invited Talk Thursday, September 28 | 8:30 AM Venue: Professor B. Nag Auditorium Chair: Marco Winckler

## Human-Computer Interaction—The Life and Times, and the History

HCI and Interact are here to stay. Many of us are born in a society where social media and smartphones are the common way of living. We take the opportunities for granted, and just develop ideas to broaden the use and to enable ever more innovative application, including cheap facilities for developing regions.

We label our field: Human-Computer Interaction, Interaction Design, Usability Engineering—old words that could now be replaced by "Experience Design". Or should they? We live in the clouds, our friends and family live on Facebook, and our watch is our coach and our physician. But how did this all start, and who were the pioneers to found the science and practice of Affordance Design, Cognitive Engineering and Software Ergonomics? Is it industry that started by inventing interactive systems, or the scientists who build theories

and models for the user interface: What were the chickens that produced the egg of HCI?

In this talk you will learn about blue-grass movements in different parts of the world that did result in understanding, theories, prototypes, and approaches. The talk will illustrate how this was discussed and disseminated in communities and at conferences, how this evolved into education and standards, and how this resulted in recognition of our professional field as the base for design of usable, comprehensive, enjoyable, absorbing and un-evitable tools, culminating in a new context of life and society, and new cultures.

## Speaker Bio

Gerrit C. van der Veer has been a researcher and teacher in University since 1961. He started in Cognitive Psychology, moved to Cognitive Ergonomics, and into Computer Science, where he specialized in design of interactive systems. He has been developing HCI curricula, and teaching HCI in many European countries including Belgium, Germany, Spain, Italy, Romania, and the Netherlands, as well as in China.

His research concerns user centered design methods, task modeling, individual differences and cultural diversity, mental models, cultural heritage, and visualization.

He is currently supervising PhD Students for several Dutch Universities and in Italy; and teaching courses

at the Maritime University of Dalian (China) Sino-European Usability Centre; and at LuXun Academy of Fine Arts, Department of Multimedia and Animation, Shenyang (China).

Gerrit is Past President of ACM SIGCHI, the world leading international society for human-computer interaction, and Co-founder and Past President of the European Association of Cognitive ergonomics.



**Devdutt Pattanaik**Mythologist, Author and Illustrator

Designing a 'Mahabharata For Children'—Challenges

Invited Talk
Thursday, September 28 | 3:50 PM
Venue: Professor B. Nag Auditoriun
Chair: Sugandh Malhotra

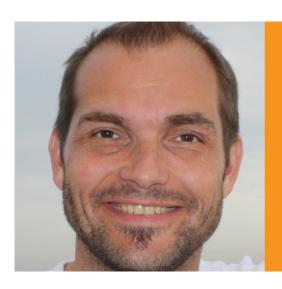
## Designing a 'Mahabharata For Children'—Challenges

### Speaker Bio

Devdutt Pattanaik writes on relevance of mythology in modern times, especially in areas of management, governance and leadership.

Trained in medicine, he worked for 15 years in the healthcare and pharma industries before he focused on his passion full time. He is author of 30 books and 600 columns, with bestsellers such as My Gita, Jaya, Sita, Business Sutra and the 7 Secret Series.

He was a speaker at TEDIndia 2009 and spoke on Myths that Mystify, East versus West. His TV shows include Business Sutra on CNBC-TV18 and Devlok on Epic TV. He consults organizations on culture, diversity and leadership and also consults various television channels and filmmakers on storytelling.



# **Tom Gross**Professor in Human-Computer Interaction

Towards Human-Centered Collaborative Computing

# Invited Talk Friday, September 29 | 8:30 AM Venue: Professor B. Nag Auditorium Chair: Anirudha Ioshi

## Towards Human-Centered Collaborative Computing

Human-centred computing can be seen as approach that departs from a human, social, and cultural understanding in order to make technology useful and usable. Taking this approach his research aims to develop technological concepts, prototypes, and systems based on an understanding of how people interact with and communicate through computing technology.

In this talk he shares general thoughts on the approach and gives specific examples from his work.

## Speaker Bio

Tom Gross is full professor and chair of Human-Computer Interaction at the University of Bamberg, Germany. His research interests are Human-Computer Interaction, Computer-Supported Cooperative Work, and Ubiquitous Computing. In these areas he has numerous publications, and has participated in and coordinated activities in various national and international research projects.

He is a member of the IFIP'S TCI3 on Human-Computer Interaction. He has been conference co-chair and organizer of many international conferences (e.g., INTERACT 2015 in Bamberg). He received a PhD from the Johannes Kepler University Linz, Austria.



## **Matt Jones**

Professor of Computer Science

Weaving New Mobile UX Futures Through Integrated Innovation across 3 Continents, 4 Countries and a Diversity of Perspectives

## **Closing Keynote**

Friday, September 29 | 3:50 PM Venue: Professor B. Nag Auditoriun Chair: Ian Gulliksen

## Weaving New Mobile ux Futures Through Integrated Innovation across 3 Continents, 4 Countries and a Diversity of Perspectives

Mobile and ubiquitous computing researchers have long imagined future worlds for users in developed regions. Steered by such visions, they have innovated devices and services exploring the value of these with and for individuals, groups and communities. Meanwhile, such radical and long-term explorations are uncommon for what have been termed emergent users; users, that is, for whom advanced technologies are just within grasp. Instead, a driving assumption is, perhaps, that today's high-end mobile technologies will "trickle down" to these user groups in due course.

For the past three years, our team of researchers and partner organizations have started to explore how to do future envisioning that includes emergent communities. We have carried out intensive, coordinated innovation-prototyping-deployment yearly cycles that has seen us work with people from townships in South Africa and informal and slum districts in India and Kenya. These activities have seen the development of a number of novel mobile devices and services that would not have emerged without the insights provided and integrated across these regions.

In this talk, I will explore what mobile technologies might be like if emergent users are directly involved in creating their visions for the future 5–10 years from now; explain and reflect on our methods, highlighting the success and failures; detail some of the platforms and devices we've created; and, argue that such innovation

is also vital to re-invigorate mobile design for the "traditional users" (like me) in the rest of the world.

## Speaker Bio

Matt Jones is the author of two books and many research articles that have helped shape the field of Mobile HCI and UX (Mobile Interaction Design—with Gary Marsden; and There's Not an App for That—with Simon Robinson and Gary Marsden).

He has spoken at events with both an arts focus (such as the Hay Book Festival 2017) and the sciences (such as this the British Science Festival 2016). He has worked both with academic research groups and industrial partners across the world. His work combines a passion for invention with a commitment to working alongside non-traditional users of mobile technology.

He is a Royal Society Wolfson Research Merit Award Holder (for his work on interactions for resource constrained communities); was awarded an IBM Faculty Award (for work with the Spoken Web); and leads two major UK programmes focused on human values and computational science (the Research Council UK funded Digital Economy Cherish Centre; and the Welsh Government/ EU funded Computational Foundry). He has enjoyed being part of the HCI community: he co-chaired ACM CHI 2014; ACM Mobile HCI 2017; and is on the steering committee of both of these conference series.

## **Detailed Program**

## Monday, September 25 | 8:30 AM onwards

## Workshops

## WS1 (Lecture Hall 22)

Service Design Meets Design for Behaviour Change: Opportunities and Challenges Ravi Mahamuni, Pramod Khambete, and Ravi Mokashi-Punekar

## WS4 (Lecture Hall 23)

Designing Gestures for Interactive Systems: Towards Multicultural Perspectives Frederic Bevilacqua, Anne Dubos, Joseph Larralde, Joel Chevrier, and Jean-Francois Jago

## WS10 (Lecture Hall 31)

Multimodality in Embodied Experience Design Mehul Bhatt, Clayton Lewis, and Vipul Nair

#### WS11 (Lecture Hall 21)

Human Work Interaction Design meets International Development Pedro Campos, Torkil Clemmensen, Barbara Barricelli, Jose Abdelnour-Nocera, Arminda Lopes, and Frederica Gonsalves

## **Field Trips**

#### FT1

Understanding The Informal Support Networks Of Older Adults in India Dr. Arne Berger

#### FT3

Parental Perspectives Towards Education Technology in Low-Income Urban households Sumita Sharma, Juhani Linna, Biju Thankachan, Markku Turunen, Heli Väätäjä, Pekka Kallioniemi, Janet C Read, and Gavin Sim

#### FT4

Investigating Perceptions of Personalization and Privacy in India Hanna Schneider, Ceenu George, Malin Eiband, and Florian Lachner

#### FT9

Understanding Early Technology Adoption by the Emergent Older Adults in Dharavi Shaon Sengupta, Sayan Sarcar, and Anirudha Joshi

## Monday, September 25 | 11:30 AM onwards

## Student Design Consortium (Lecture Hall 33)

Community Based System Design for Indian Railways in the Context of Senior Citizens Atul Kumar

Seek: Art Teaching Aid Abhijith KR

Service design for blood bank system Suchismita Naik

SwitchTabs: More Efficient Natural Interaction With Browser Tabs Chinmay Anand, Kushagra Khandelwal, Sunny Kumar

TouchPIN: Numerical Passwords You Can Feel *Gesu India* 

Round table discussion

## Tuesday, September 26 | 8:30 AM onwards

#### Workshops

#### WS6 (Lecture Hall 22)

Beyond Computers: Wearables, Humans, And Things—WHAT!

Peter Dannenmann, Nahum Gershon, Achim Ebert, and Gerrit van der Veer

#### WS9 (Lecture Hall 31)

Designing Humor in Human-computer Interaction Andreea Niculescu, Anton Nijholt, Alessandro Valitutti, and Rafael Banchs

#### WS11 (Lecture Hall 21)

Human Work Interaction Design meets International Development

Pedro Campos, Torkil Clemmensen, Barbara Barricelli, Jose Abdelnour-Nocera, Arminda Lopes, and Frederica Gonsalves

### WS13 (Lecture Hall 32)

Cross Cultural Differences in Designing for Accessibility and Universal Design Helen Petrie

## Symposium on Asian HCI Research (Professor B. Nag Auditorium)

Yoshifumi Kitamura, Minghui Sun, Eunice Sari, Jinwoo Kim, Simon Perrault, Kaveh Bazargan, Chui Yin Wang, Nova Ahmed, Ebtisam Alabdulqader, Thippaya Chintakovid, and Anshuman Sharma

#### WS14 (Lecture Hall 32)

Workshop on Dealing with Conflicting User Interface Properties in User-Centered Development Processes Marco Winckler, Marta Larusdottir, Cristian Bogdan, Kati Kuusinen, and Philippe Palanque

## **Field Trips**

#### FT1

Understanding The Informal Support Networks Of Older Adults in India Dr. Arne Berger

#### FT4

Investigating Perceptions of Personalization and Privacy in India Hanna Schneider, Ceenu George, Malin Eiband, and Florian Lachner

#### FT5

Modelling Less-literate User's Choices of Smartphone Authentication Modes

Pankaj Doke, Sylvan Lobo, Shyama V. S, Ulemba Hirom and Mridul Basumotari

#### FT9

Understanding Early Technology Adoption by the Emergent Older Adults in Dharavi Shaon Sengupta, Sayan Sarcar and Anirudha Joshi

#### FT10

ICT Based Interventions for Anganwadi Healthcare Workers in Mumbai

Biju Thankachan, Sumita Sharma, Markku Turunen, Juhani Linna, Heli Väätäjä, Reinier Kortekaas, and Tom Gross

#### **Doctoral Consortium (Lecture Hall 33)**

Connected Objects to Support Parents and their Adult Children

Bhagyashree Patil, Danae Stanton-Fraser, Jeff Gavin, and Clare Reddington

Design Guideline for Smartphone Menu Types and Icon Design for Children, Adult, and Elderly Users Lumpapun Punchoojit, and Nuttanont Hongwarittorrn

Designing information and communication practices for social and situated learning systems in socioeconomic development

Linus Kendall

Designing Peripheral Interaction for Secondary School Teachers Pengcheng An

The Mediation of Cultural Values between Privacy Calculus Decisions and Information Disclosure Behaviors in Social Network Sites Siti Zainab Ibrahim, Maslin Masrom, and Kamilah Radin Salim

Virtual Movement from Textual Instructions Himangshu Sarma Wednesday, September 27 | 8:30 AM | Opening Keynote (Professor B. Nag Auditorium)

**Albrecht Schmidt:** Amplifying Human Abilities: Digital Technologies to Enhance Perception and Cognition

Chair: Philippe Palanque



## Tea | 10:30 AM

#### Session 1

Wednesday, September 27 | 11:00 AM

Session 1a: Human perception, cognition and behaviour (Lecture Hall 21)

Chair: Rosa Arriaga

Full Paper: I Smell Creativity: Exploring the Effects of Olfactory and Auditory Cues to Support Creative Writing Tasks

Frederica Gonçalves, Diogo Cabral, Pedro Campos, and Johannes Schöning

Full Paper: Night Mode, Dark Thoughts: Background Color Influences the Perceived Sentiment of Chat Messages

Diana Löffler, Lennart Giron, and Jörn Hurtienne

Full Paper: Subjective usability, mental workload assessments and their impact on objective human performance

Luca Longo

Full Paper: What is user's perception of Naturalness? An Exploration of Natural User Experience Sanjay Ghosh, Chivukula Sai Shruthi, Himanshu Bansal, and Arvind Sethia

Session 1b: UX adoption in the organizations (Lecture Hall 22) Chair: Atul Manohar

**Short Paper:** Active Involvement of Software Developers in Usability Engineering: Two Small-Scale Case Studies *Nis Bornoe, and Jan Stage* 

**Full Paper:** Adoption of UX Evaluation in Practice: An Action Research Study in a Software Organization Kristine Bang, Martin Akto Kanstrup, Adam Kjems, and Jan Stage

**Short Paper:** Empowering Project Managers in Enterprises - A Design Thinking approach to manage Commercial Projects

Aparna Kongot, and Monisha Pattanaik

Full Paper: Learning HCI Across Institutions, Disciplines and Countries: A Field Study of Cognitive Styles in Analytical and Creative Tasks José Abdelnour-Nocera, Torkil Clemmensen, and Tatiane G. Guimaraes

Full Paper: UX Professionals' Definitions of Usability and UX – A Comparison between Turkey, Finland, Denmark, France, and Malaysia

Dorina Rajanen, Torkil Clemmensen, Netta Iivari, Yavuz Inal, Kerem Rızvanoğlu, Ashok Sivaji, and Amélie Roche

Session Ic: Personalisation and Visualization (Lecture Hall 23) Chair: R Venkatesh

**Full Paper:** Grab 'n' Drop: User Configurable Toolglasses *James R. Eagan* 

Short Paper: Shelves: A User-defined Block Management Tool for Visual Programming Languages Sheng-Yi Hus, Yuan-Fu Lou, Shing-Yun Jung, and Chuen-Tsai Sun

Full Paper: Text Priming—Effects of Text Visualizations on Readers Prior to Reading Tilman Dingler, Dagmar Kern, Katrin Angerbauer, and Albrecht Schmidt

**Short Paper:** The Panta Rhei: Modernizing the Marquee *Megan Monroe and Mauro Martino* 

Full Paper: Your Data, Your Vis: Personalizing Personal Data Visualizations

Hanna Schneider, Katrin Schauer, Clemens Stachl, and

Andreas Butz Session

#### Session 1d: Course (Lecture Hall 31)

**Course C4:** Children Participating in HCI Research Janet Read (University of Central Lancashire, UK)

#### Session 1e: Course (Lecture Hall 32)

Course C7: Designing a Successful Product with Design Sprint Eunice Sari, and Adi Tedjasaputra (UX Indonesia)



## Session 2

## Wednesday, September 27 | 1:30 PM

Session 2a: Methods and tools for user interface evaluation (Lecture Hall 21) Chair: Girish Dalvi

**Short Paper:** A Model to Compute Webpage Aesthetics Quality based on Wireframe Geometry *Ranjan Maity, and Samit Bhattacharya* 

Full Paper: Bringing Worth Maps a step further: A dedicated Online-Resource Fatoumata G. Camara, and Gaëlle Calvary

**Full Paper:** Extending Mobile App Analytics for Usability Test Logging

Xavier Ferre, Elena Villalba, Héctor Julio, and Hongming Zhu

Short Paper: NexP: A Beginner Friendly Toolkit for Designing and Conducting Controlled Experiments Xiaojun Meng, Pin Sym Foong, Simon Perrault, and Shengdong Zhao

**Full Paper:** UX Metrics: Deriving Country-Specific Usage Patterns of a Website Plug-in From Web Analytics Florian Lachner, Florian Fincke, and Andreas Butz

## Session 2b: Interaction at the workplace (Lecture Hall 22) Chair: Torkil Clemmensen

Full Paper: FeetForward: on Blending New Classroom Technologies into Secondary School Teachers' Routines Pengcheng An, Saskia Bakker, and Berry Eggen

Full Paper: Human-Building Interaction: When the machine becomes a building Julien Nembrini, and Denis Lalanne

**Short Paper:** Investigating Wearable Technology for Fatigue Identification in the Workplace Christopher Griffiths, Judy Bowen, and Annika Hinze

Short Paper: Leveraging Conversational Systems to assists New Hires during Onboarding Praveen Chandar, Yasaman Khazaeni, Matthew Davis, Micheal Muller, Marco Crasso, Q. Vera Liao, N. Sadat Shami, and Werner Geyer

Short Paper: RemindMe: Plugging a Reminder Manager into Email for Enhancing Workplace Responsiveness Casey Dugan, Aabhas Sharma, Michael Muller, Di Lu, Michael Brenndoerfer, and Werner Geyer

**Short Paper:** The Cost of Improved Overview: An analysis of the Use of Electronic Whiteboards in Emergency Departments

Morten Hertzum

## Session 2c: Co-design studies (Lecture Hall 23) Chair: Jacki O' Neill

**Full Paper:** A Co-design Study of Digital Service Ideas in the Bus Context

Elina Hildén, Jarno Ojala, and Kaisa Väänänen

Full Paper: Designing for Financial Literacy: Co-Design with Children in Rural Sri Lanka

Thilina Halloluwa, Dhaval Vyas, Hakim Usoof, Pradeepa Bandara, Margot Brereton, and Priyantha Hewagamage

**Short Paper:** Everyday Creative Uses of Smartphone Images in Biomedical Engineering Laboratories Dhaval Vyas, Hinal Vyas, and Maria A. Woodruff

**Full Paper:** Towards Participatory Prototyping with Older Adults with and without Cognitive Impairment: Challenges and Lessons Learned Luã Marcelo Muriana, and Heiko Hornung

**Short Paper:** Using Critical Incidents in Workshops to Inform eHealth Design

Christiane Grünloh, Jean D. Hallewell Haslwanter, Bridget Kane, Eunji Lee, Thomas Lind, Jonas Moll, Hanife Rexhepi, and Isabella Scandurra

#### Session 2d: Course (Lecture Hall 31)

Course C1 (1/2): The Science behind User Experience Design Asad Ali Junaid

# Session 2e: Case studies of mobile applications and interaction in the move (Lecture Hall 32) Chair: Ravi Poovaiah

Case Study: Ability-based Optimization: Designing Smartphone Text Entry Interface for Older Adults Sayan Sarcar, Jussi Jokinen, Antti Oulasvirta, Xiangshi Ren, Chaklam Silpasuwanchai, and Zhenxin Wang

Case Study: Design and Development of a Location-Based Social Networking Mobile Application Aditi Nettar, Nishita Chowdhari, Roxan Karanjia, Pallavi Rao Gadahad, and Sneha Deshmukh

Case Study: Expectation and experience:
Passenger acceptance of autonomous public
transportation vehicles
Grace Eden, Benjamin Nanchen, Randolf Ramseyer, and
Florian Evéquoz

Case Study: On the design and evaluation of Nippon Paint Color Visualizer application—a case study Kuldeep Kulshreshtha, Andreea I. Niculescu, and Bimlesh Wadhwa

## Session 2f: Student Research Consortium (1/2) (Lecture Hall 33) Chairs: Naveen Bagalkot, Janet Wesson

Disambiguation Keyboard for Blind Neel Koradia, and Simran Pandey

Evaluation of Thumb-Movement Alternacy for Two-Thumb Input in Marathi Soft Keyboard Layouts Santanu Dutta, Nimish Maravi, and Bhakti Bhikne

How useful is 360-degree view for Cognitive Mapping? *Ambika Shahu* 

Probabilistic Modeling of Swarachakra Keyboard for Improved Touch Accuracy Nikhil Wani, Adarsh Patodi, and Sumit Singh Yadav

Wednesday, September 27 | 2:50 PM Invited Talk (Professor B. Nag Auditorium) Rama Bijapurkar: Understanding Consumer India and what businesses need to do to serve them better Chair: Shashank Deshpande

## \_\_\_\_\_\_\_\_\_\_ Теа | 4:00 РМ

## Session 3

## Wednesday, September 27 | 4:30 PM

Session 3a: Virtual Reality and feeling of immersion (Lecture Hall 21) Chair: Jayesh Pillai

**Short Paper:** Estimating Visual Discomfort in Head-Mounted Displays using Electroencephalography Christian Mai, Mariam Hassib, and Rolf Königbauer

**Short Paper:** Experience Probes: Immersion and Reflection Between Reality and Virtuality Max Willis, Antonella De Angeli, and Massimo Zancanaro

Short Paper: Guidelines for Designing Interactive Omnidirectional Video Applications Santeri Saarinen, Ville Mäkelä, Pekka Kallioniemi, Jaakko Hakulinen, and Markku Turunen

Full Paper: How Real is Unreal? The Impact of Visual Imagery on the Experience of Exercise-Induced Pain Maria Matsangidou, Chee Siang Ang, Alexis R. Mauger, Boris Otkhmezuri, and Luma Tabbaa

**Short Paper:** Increasing Presence in Virtual Reality with a Vibrotactile Grid around the Head Oliver Beren Kaul, Kevin Meier, and Michael Rohs

Full Paper: User Experience and Immersion of
Interactive Omnidirectional Videos in CAVE Systems
and Head-Mounted Displays
Pekka Kallioniemi, Ville Mäkelä, Santeri Saarinen, Markku
Turunen, York Winter, and Andrei Istudor

## Session 3b: Security and trust (Lecture Hall 22) Chair: Gerhard Weber

**Full Paper:** Coping with Accessibility Challenges for Security — A User Study with Blind Smartphone Users Sylvan Lobo, Ulemba Hirom, Shyama V S, Mridul Basumatori, and Pankaj Doke

Full Paper: Effects of Uncertainty and Cognitive Load on User Trust in Predictive Decision Making Jianlong Zhou, Syed Z. Arshad, Simon Luo, and Fang Chen

**Full Paper:** Modelling Trust: An Empirical Assessment Siddharth Gulati, Sonia Sousa, and David Lamas

Full Paper: Towards Understanding the Infuence of Personality on Mobile App Permission Settings Frederic Raber, and Antonio Krueger

## Session 3c: Panel (Lecture Hall 23)

Panel 1: Different Shades Of User Involvement: Participatory Design, Co-Design, User Centered Design

#### **Panelists**

Thilina Halloluwa, Queensland University of Technology, Australia

Elina Hilden, Tampere University of Technology, Finland

Thomas Vilarinho, SINTEF Digital, Trondheim, Norway

Janet C. Read, University of Central Lancashire, UK

Keyur Sorathia, IIT Guwahati, India

#### Session 3d: Course (Lecture Hall 31)

Course C1 (2/2): The Science behind User Experience Design Asad Ali Iunaid

## Session 3e: Industry presentations I (Lecture Hall 32) Chair: Fernando Loizides

Affective HCI: Emotional and Motivational Aspects of Adapting to a New Technology Anjeli Singh, and Jahnavi Mirashi (Hureo)

Experience Design for Digitalization Veera Venkata Atmakuri (Siemens)

User Testing Vs. User Teaching Andrew Whited (Designer)

Chatbot Platform for Services Within a Mobile Operating System Nikhil Karwall, and Ankita Agrawal (Indus OS)

## Session 3f: Student Research Consortium (2/2) (Lecture Hall 33) Chairs: Naveen Bagalkot, Janet Wesson

Three Sixty Degree Vision Interfaces: Evaluation of Performance and Eye Movements Aniruddh Ravipati, and Ambika Shahu Unifying E-Commerce and Markerless Mobile Augmented Reality Using Real-time Face Tracking and Head Pose Estimation Anuradha Welivita, Nanduni Nimalsiri, Ruchiranga Wickramasinghe, and Upekka Pathirana

Use of ICT for behavioral change in dietary habits Ashish Jain, Priyanka Arora, and Umang Luhadia



Thursday, September 28 | 8:30 AM | Invited Talk (Professor B. Nag Auditorium)

Gerrit van der Veer: Human-Computer Interaction—the Life and Times, and the History Chair: Marco Winckler

## Session 4

## Thursday, September 28 | 9:40 AM

Session 4a: Audience engagement (Lecture Hall 21) Chair: Keyur Sorathia

Short Paper: Designing Collaborative Co-located Interaction for an Artistic Installation
Oussama Mubarak, Pierre Cubaud, David Bihanic, and Samuel Bianchini

Short Paper: Designing Interactive Technologies for Interpretive Exhibitions: Enabling Teen Participation Through User-Driven Innovation

Vanessa Cesário, Sónia Matos, Marko Radeta, and
Valentina Nisi

Full Paper: Haunting Space, Social Interaction in a Large-Scale Media Environment

Ian C. Schacher, and Daniel Bisig

**Full Paper:** In-the-moment and beyond: Combining post-hoc and real time data for the study of audience perception of electronic music performance S. M. Astrid Bin, Fabio Morreale, Nick Bryan-Kinns, and Andrew P. McPherson

Short Paper: Piano Staircase: Exploring Movementbased Meaning Making in Interacting with Ambient Media Liang Tan, and Kenny K. N. Chow

## Session 4b: Mediated communication in eHealth (Lecture Hall 22) Chair: Janet Wesson

Full Paper: Co-designing a mHealth application for selfmanagement of cystic fibrosis Thomas Vilarinho, Jacqueline Floch, and Erlend Stav

**Short Paper:** Even when Icons are Not Worth a Thousand Words They are Helpful in Designing Asthma mHealth Tools

Michael Lefco, Jensi Gise, Burton Lesnick, and Rosa I. Arriaga

Full Paper: Keeping Children Safe Online: Understanding the Concerns of Carers of Children with Autism Mike Just, and Tessa Berg Short Paper: Mediating Interaction between Healthcare Professionals and Patients with a Dual-Sided Tablet Ashley Colley, Juho Rantakari, Lasse Virtanen, and Ionna Häkkilä

**Short Paper:** Stimulating Conversations in Residential Care through Technology-mediated Reminiscence Francisco Ibarra, Marcos Baez, Francesca Fiore, and Fabio Casati

**Short Paper:** Viability of Magazines for Stimulating Social Interactions in Nursing Homes Valentina Caforio, Marcos Baez, and Fabio Casati

## Session 4c: Social media and design innovation (Lecture Hall 23) Chair: Naveed Ahmed

Full Paper: 10 Design Themes for Creating 3D Printed Physical Representations of Physical Activity Data Rohit Ashok Khot, Simon Stusak, Andreas Butz, and Florian 'Flovd' Mueller

Short Paper: Breathing Friend: Tackling Stress through Portable Tangible Breathing Artifact Miroslav Macik, Katerina Prazakova, Anna Kutikova, Zdenek Mikovec, Jindrich Adolf, Jan Havlik, and Ivana Jilekova

**Short Paper:** Citizen Tagger: Exploring social tagging of conversational audio

Delvin Varghese, Patrick Olivier, and Madeline Balaam

Delvin Varghese, Patrick Olivier, and Madeline Balaan

**Short Paper:** Exploring Offline Context and Consciousness in Everyday Social Media Use Yubo Kou

Full Paper: Special Digital Monies: The Design of Alipay and WeChat Wallet for Mobile Payment Practices in China

Yong Ming Kow, Xinning Gui, and Waikuen Cheng

## Session 4d: Course (Lecture Hall 31)

**Course C2 (1/2):** Design of Location-based Mobile Games: Introduction

Christos Sintoris, Nikoleta Yiannoutsou, and Nikolaos Avouris (University of Patras, Greece)

## Session 4e: Industry presentations II (Lecture Hall 32) Chair: Ishneet Grover

Design Sprints: Concept to Completion Natasha Sant (Google Inc.)

Designing for Billions Natasha Sant (Google Inc.)

Importance of Human Factors in Medical Devices Jitesh Jaidev Jumani, Nitin KD, and Deepak Arasu (HCL Technologies Ltd.)

Event-based and state-based visual interfaces for learning computer programming and robotics Sumesh Jaiswal (Symantec Software)



Tea | 11:00 AM

#### Session 5

## Thursday, September 28 | 11:30 AM

Session 5a: Information on demand, on the move, and gesture interaction (Lecture Hall 21)
Chair: Yoshifumi Kitamura

**Full Paper:** Presenting Information on the Driver's Demand on a Head-Up Display Renate Haeuslschmid, Christopher Klaus, and Andreas Butz

**Full Paper:** Seeing Through the Eyes of Heavy Vehicle Operators *Markus Wallmyr* 

**Short Paper:** TrackLine: Refining touch-to-track Interaction for Camera Motion Control on Mobile Devices

Axel Hoesl, Sarah Aragon Bartsch, and Andreas Butz

Full Paper: Understanding Gesture Articulations Variability Orlando Erazo, Yosra Rekik, Laurent Grisoni, and José A. Pino

Short Paper: Watching Your Back While Riding Your Bike: Designing for Preventive Self-Care During Motorbike Commuting Tomas Sokoler, and Naveen L Bagalkot

## Session 5b: Assistive technology for blind users (Lecture Hall 22) Chair: Prachi Sakhardande

Full Paper: Blind FLM: An Enhanced Keystroke-Level Model for Visually Impaired Smartphone Interaction Shiroq Al-Megren, Wejdan Altamimi, and Hend S. Al-Khalifa

Full Paper: Comparing Two Approaches of Tactile Zooming on a Large Pin-matrix Device Denise Prescher. and Gerhard Weber **Short Paper:** Improve the Accessibility of Tactile Charts Christin Engel, and Gerhard Weber

**Short Paper:** Investigations on Laterotactile Braille Reading *Anupama Thomas, and Elizabeth Rufus* 

**Full Paper:** Performance of Accessible Gesture-based Indic Keyboard

Pabba Anu Bharath, Charudatta Jadhav, Shashank Ahire, Manjiri Joshi, Rini Ahirwar, and Anirudha Joshi

## Session 5c: New interaction techniques (Lecture Hall 23) Chair: Peter Dannenmann

Short Paper: Comfort: A Coordinate of User Experience in Interactive Built Environments

Hamed S. Alavi, Himanshu Verma, Michael Papinutto, and
Denis Lalanne

**Short Paper:** Designing Smart Shoes for Obstacle Detection: Empowering Visually Challenged Users through ICT

Vikram Singh Parmar, and Krishna Sai Inkoolu

Full Paper: Effects of Haptic Feedback in Dual-Task Teleoperation of a Mobile Robot José Corujeira, José Luís Silva, and Rodrigo Ventura

**Full Paper:** Pupil-Assisted Target Selection (PATS) Christoph Strauch, Jan Ehlers, and Anke Huckauf

Short Paper: Effects of Human Cognitive Differences on Interaction and Visual Behavior in Graphical User Authentication Marios Belk, Christos Fidas, Christina Katsini, Nikolaos Avouris, and George Samaras

## Session 5d: Course (Lecture Hall 31)

Course C2 (2/2): Design of Location-based Mobile Games: Introduction Christos Sintoris, Nikoleta Yiannoutsou, and Nikolaos Avouris (University of Patras, Greece)

## Session 5e: Industry presentations III (Lecture Hall 32) Chair: José Abdelnour Nocera

Designing healthcare for rural india Noopur Varma (Nilenso Software) Empowering the marginalised by bringing the university to their phones

Promit Sanyal, Savy A, and Aveejeet Palit
(Moonraft Innovation Labs)

Principles of Inclusive and Resilient Design on the Web Shwetank Dixit (BarrierBreak)

Technology Platform for Social Inclusion Ojas Vyas, and Karan Rai Bahadur (Mindtree Ltd)



Lunch | 12:50 PM

#### Session 6

## Thursday, September 28 | 2:00 PM

Session 6a: Games (Lecture Hall 21) Chair: Marco Winckler

Short Paper: Effects of Image-Based Rendering and Reconstruction on Game Developers Efficiency, Game Performance, and Gaming Experience George E. Raptis, Christina Katsini, Christos Fidas, and Nikolaos Avouris

**Short Paper:** Exploring In-the-Wild Game-based Gesture Data Collection

Kiyoshi Oka, Weiquan Lu, Kasım Özacar, Kazuki Takashima, and Yoshifumi Kitamura

Full Paper: From Objective to Subjective Difficulty
Evaluation in Video Games
Thomas Constant, Guillaume Levieux, Axel Buendia, and
Stéphane Natkin

Full Paper: Improved Memory Elicitation in Virtual Reality: New Experimental Results and Insights Joel Harman, Ross Brown, and Daniel Johnson

**Full Paper:** Practice in Reality for Virtual Reality Games: Making Players Familiar and Confident with a Game Jeffrey C. F. Ho

Session 6b: Persuasive technology and rehabilitation (Lecture Hall 22) Chair: Sayan Sarkar

**Short Paper:** A Technology for Prediction and Prevention of Freezing of Gait (FOG) in Individuals with Parkinson Disease

Megh Patel, Gottumukala Sai Rama Krishna, Abhijit Das, and Uttama Lahiri **Full Paper:** Designing User Interfaces in Emotionallysensitive Applications Alistair Sutcliffe

Short Paper: iKnowU—Exploring the Potential of Multimodal AR Smart Glasses for the Decoding and Rehabilitation of Face Processing in Clinical Populations Simon Ruffieux, Nicolas Ruffieux, Roberto Caldara, and Denis Lalanne

Short Paper: Personalized Persuasion in Online Advertisements: A Case Study of a Micro-Funding Website Suleman Shahid. Nicole Heise, and Sundas Zaman

**Short Paper:** FIT Decision Aid: Matching the Needs of People with Dementia and Caregivers with Products and Services

Nazli Cila, Hester van Zuthem, Fleur Thomése, Wilma Otten, Franka Meiland. and Ben Kröse

Short Paper: Perswedo: Introducing Persuasive Principles into the Creative Design Process through a Design Card-Set Xipei Ren, Yuan Lu, Harri Oinas-Kukkonen, and Aarnout Brombacher

Short Paper: Towards the Applicability of NAO Robot for Children with Autism in Pakistan Muneeb Imtiaz Ahmad, Suleman Shahid, and Anam Tahir

### Session 6c: Panels (Lecture Hall 23)

Panel 2: Novel Interfaces and Future Applications

#### **Panelists**

Joel Harman, Queensland University of Technology, Brisbane Australia

Jeffrey C. F. Ho, School of Design, The Hong Kong Polytechnic University

Rohit Ashok Khot, RMIT University, Australia

Pekka Kallioniemi, University of Tampere, Finland

Max Willis, University of Trento, Italy

Markku Turunen, University of Tampere, Finland

## Session 6d: Course (Lecture Hall 31)

Course C5: Designing for Accessibility Helen Petrie (University of York, UK), Gerhard Weber (Technische Universität Dresden, Germany), and Jenny Darzentas (University of York, UK)

## Session 6e: Case studies of interaction in meeting places and in classrooms (Lecture Hall 32) Chair: Junaid A

Augmenting the Textbook for Enaction: Designing Media for Participatory Learning in Classrooms Priyanka Borar, Durga Prasad, Harshit Agrawal, and Sanjay Chandrasekharan

Designing Interactive Spatiotemporal Visualizations to Enhance Movie Browsing Ana Jorge, Nuno Correia, and Teresa Chambel

From Minutes of Meeting to 'Memories of Meeting'— How we designed impactful and engaging Visual MoM for Client Visit Lakshmi Deshpande

Leveraging Virtual Trips in Google Expeditions to Elevate Students' Social Exploration Antigoni Parmaxi, Kostas Stylianou, and Panayiotis Zaphiris



Tea | 3:20 PM

Thursday, September 28 | 3:50 PM
Invited Talk (Professor B. Nag Auditorium)
Devdutt Pattanaik: Designing a 'Mahabharata for Children'—Challenges
Chair: Sugandh Malhotra



Adobe Sponsor Tutorial | 5:10 PM-6:10 PM



Campus Walk | 5:10 PM-6:10 PM



HCIPAI Member Meet | 5:30 PM



Conference Dinner at Meluha The Fern, Powai | 7:00 PM Friday, September 29 | 8:30 AM
Invited Talk (Professor B. Nag Auditorium)
Tom Gross: Towards Human-Centered
Collaborative Computing
Chair: Anirudha Joshi

## Session 7

## Friday, September 29 | 9:40 AM

## Session 7a: Multitouch interaction (Lecture Hall 21) Chair: Panayiotis Zaphiris

**Full Paper:** An Observational Study of Simultaneous and Sequential Interactions in Co-located Collaboration Shuo Niu, D. Scott McCrickard and Steve Harrison

Full Paper: Dynamic UI Adaptations for One-Handed Use of Large Mobile Touchscreen Devices Daniel Buschek, Maximilian Hackenschmied, and Florian Alt

Full Paper: Horizontal vs. Vertical: How the Orientation of a Large Interactive Surface Impacts Collaboration in Multi-Surface Environments
Lili Tong, Aurélien Tabard, Sébastien George, and
Audrey Serna

**Full Paper:** Investigating Notifications and Awareness for Multi-user Multi-touch Tabletop Displays Shuo Niu. D. Scott McCrickard. and Steve Harrison

## Session 7b: Aging and disabilities (Lecture Hall 22) Chair: Helen Petrie

**Full Paper:** Age-related effects of task difficulty on the semantic relevance of query reformulations

Saraschandra Karanam, and Herre van Oostendorp

Full Paper: Could People with Stereo-deficiencies Have a Rich 3D Experience Using HMDs? Sonia Cárdenas-Delgado, M.-Carmen Juan, Magdalena Méndez-López, and Elena Pérez-Hernández

**Full Paper:** How Older People Who Have Never Used Touchscreen Technology Interact with a Tablet Roberto Menghi, Silvia Ceccacci, Francesca Gullà, Lorenzo Cavalieri, Michele Germani, and Roberta Bevilacqua

Full Paper: MeViTa: Interactive Visualizations to Help Older Adults with their Medication Intake using a Camera-Projector System Robin De Croon, Bruno Cardoso, Joris Klerkx, Vero Vanden Abeele. and Katrien Verbert

## Session 7c: Digital inclusion (Lecture Hall 23) Chair: Indrani Medhi Thies

Short Paper: Contextualizing ICT based Vocational Education for Rural Communities: Addressing Ethnographic Issues and Assessing Design Principles KP Sachith, Aiswarya Gopal, Alexander Muir, and Rao R Bhayani

Full Paper: Enhancing Access to eLearning for People with Intellectual Disability: Integrating Usability with Learning

Theja Kuruppu Arachchi, Laurianne Sitbon, and Jinglan Zhang

Full Paper: Identifying support opportunities for foreign students: Disentangling language and non-language problems among a unique population

Jack Jamieson, Naomi Yamashita, and Jeffrey Boase

**Short Paper:** PersonaBrowser Status Quo and Lessons learned from a Persona-Based Presentation Metaphor of WCAG

Alexander Henka, and Gottfried Zimmermann

Full Paper: Women in Crisis Situations: Empowering and Supporting Women through ICTs Tara Capel, Dhaval Vyas, and Margot Brereton

## Session 7d: Course (Lecture Hall 31)

Course C3 (1/2): Designing and Assessing Interactive Systems Using Task Models Célia Martinie, Philippe Palanque, and Marco Winckler (ICS-IRIT, University Paul Sabatier, France)

## Session 7e: Industry presentations IV (Lecture Hall 32) Chair: Robit Ashok Khot

Application of Conversational User Interfaces in Healthcare Ami Sampat (SAP Labs, Bangalore)

Paradigm-Shifting Use-Cases for IoT Reeta Mehrishi, and Astha Johri (Tata Consultancy Service)

Acting fast and slow online: What is the right suite of UX methodologies for each type of actions? Saeideh Bakhshi (Facebook)

## Session 7f: Pitney Bowes Design Challenge—Final Presentations (Lecture Hall 33) Chair: Manish Sharma



Tea | 11:00 AM

## **Session 8**

## Friday, September 29 | 11:30 AM

Session 8a: Pointing and target selection (Lecture Hall 21) Chair: Nikolaos Avouris

**Full Paper:** Dynamics of Pointing with Pointer Acceleration *Jörg Müller* 

Full Paper: How can Adding a Movement Improve Target Acquisition Efficacy? Alexander R. Payne, Beryl Plimmer, Andrew McDaid, Andrew Luxton-Reilly, and T. Claire Davies

Short Paper: Information-Theoretic Analysis of Human Performance for Command Selection Wanyu Liu, Olivier Rioul, Michel Beaudouin-Lafon, and Yves Guiard

**Short Paper:** One Fitts' Law, Two Metrics Julien Gori, Olivier Rioul, Yves Guiard, and Michel Beaudouin-Lafon

Short Paper: Towards Pupil-Assisted Target Selection in Natural Settings: Introducing an On-screen Keyboard Christoph Strauch, Lukas Greiter, and Anke Huckauf

## Session 8b: Interaction with children (Lecture Hall 22) Chair: Rama Vennelakanti

**Full Paper:** An interactive elementary tutoring system for oral health education using an augmented approach *Mitali Sinha, and Suman Deb* 

**Full Paper:** Empowered and Informed: Participation of Children in HCI

Janet C Read, Matthew Horton, Daniel Fitton, and Gavin Sim

Full Paper: Gaze Awareness in Agent-Based Early-Childhood Learning Application Deepak Akkil, Prasenjit Dey, Deepshika Salian, and Nitendra Rajput Full Paper: Puffy: A Mobile Inflatable Interactive Companion for Children with Neurodevelopmental Disorder Franca Garzotto, Mirko Gelsomini, and Yosuke Kinoe

## Session 8c: Cultural differences and communication technology (Lecture Hall 23) Chair: Gerrit van der Veer

**Full Paper:** A Confucian Look at Internet Censorship in China

Yubo Kou, Bryan Semaan, and Bonnie Nardi

Full Paper: A Cross-Cultural Noticeboard for a Remote Community: Design, Deployment, and Evaluation Alessandro Soro, Margot Brereton, Jennyfer Lawrence Taylor, Anita Lee Hong, and Paul Roe

Full Paper: Culturally Informed Notions of Mobile Context Awareness - Lessons Learned from User-Centred Exploration of Concepts of Context and Context Awareness

Xiangang Qin, Chee-Wee Tan, Mads Bødker, Wei Sun, and Torkil Clemmensen

**Full Paper:** How do you want your chatbot? An exploratory Wizard-of-Oz study with young, urban Indians

Indrani Medhi Thies, Nandita Menon, Sneha Magapu, Manisha Subramony, and Jacki O'Neill

#### Session 8d: Course (Lecture Hall 31)

Course C3 (2/2): Designing and Assessing Interactive Systems Using Task Models Célia Martinie, Philippe Palanque, and Marco Winckler (ICS-IRIT, University Paul Sabatier, France)

## Session 8e: Industry presentations V (Lecture Hall 32) Chair: Naveen Bagalkot

Modernising our Design Tools Prahbat Mahapatra (Adobe)

Establishing Context: Designing for Intercultural and Intracultural Communication in Traditional Research Settings
Camela Logan, and Saide Bakhshi (Facebook)

Participatory and Interactive Installations as a Design Research Mechanism for Smart Cities Reeta Mehrishi and Astha Johri (Tata Consultancy)

Opentype Enhancements in Adobe InDesign & Illustrator

Mrinalini Sardar (Adobe)

## Session 8f: Field Trips Summary (Lecture Hall 33) Chair: Debjani Roy



Lunch | 12:50 PM

### Session 9

## Friday, September 29 | 2:00 PM

Session 9a: Adaptive design and mobile applications (Lecture Hall 21)

Chair: Takahiro Miura

**Short Paper:** A Minimalist Approach for Identifying Affective States for Mobile Interaction Design Subrata Tikadar, Sharath Kazipeta, Chandrakanth Ganji, and Samit Bhattacharya

Full Paper: Automatic Generation of User Interface
Layouts for Alternative Screen Orientations
Clemens Zeidler, Gerald Weber, Wolfgang Stuerzlinger, and
Christof Lutteroth

Full Paper: Defining Gestural Interactions for Large Vertical Touch Displays Robin Andersson, Jonas Berglund, Aykut Coşkun, Morten Field, and Mohammad Obaid

**Short Paper:** MyCarMobile: A travel assistance emergency mobile app for deaf people *Tânia Rocha, Hugo Paredes, Diogo Soares, Benjamim Fonseca, and João Barroso* 

Short Paper: Touch Shadow Interaction and Continuous Directional User Interface for Smartphone Sanjay Ghosh, Joy Bose, Rajkumar Darbar, and Punyashlok Dash

## Session 9b: Design rationale and camera-control (Lecture Hall 22)

Chair: Geraldine Fitzpatrick

Full Paper: Capturing Design Decision Rationale with Decision Cards

Marisela Gutierrez Lopez, Gustavo Rovelo, Mieke Haesen, Kris Luyten, and Karin Coninx

Full Paper: Coping with Design Complexity: A Conceptual Framework for Design Alternatives and Variants

Judy Bowen, and Anke Dittmar

Short Paper: Identifying the Interplay of Design Artifacts and Decisions in Practice: A Case Study Judy Bowen, and Anke Dittmar

**Short Paper:** On the Effects of Progressive Reduction as Adaptation Strategy for a Camera-based Cinematographic User Interface Axel Hoesl, Mujo Alic, and Andreas Butz

Full Paper: You've Got the Moves, We've Got the Motion—Understanding and Designing for Cinematographic Camera Motion Control Axel Hoesl, Partrick Mörwald, Philipp Burgdorf, Elisabeth Dreßler, and Andreas Butz

## Session 9c: Panels (Lecture Hall 23)

Panel 3: Interactive Panel: Designing with Culture in Mind

#### Panelists

Jose Abdelnour-Nocera, University of West London, UK and Madeira Interactive Technologies Institute, Portugal

Torkil Clemmensen, Copenhagen Business School, Copenhagen, Denmark

Jack Jamieson, University of Toronto

Florian Lachner, University of Munich (LMU), Munich, Germany

Dorina Rajanen, University of Oulu, Oulu, Finland

Pradeep Yammiyavar, IIT Guwahati, India

## Session 9d: Course (Lecture Hall 31)

**Course C6:** Introduction to Service Design for Digital Health Ashley Colley, and Henna Marttila (University of Lapland, Finland)

## Session 9e: Case studies of HCI in organizations (Lecture Hall 32) Chair: Sachin Patil

A Digital Employability Marketplace Ojas Vyas, and Karan Rai Bahadur

Adoption of Structural Analysis Capabilities in an IOT based Scenario for Connected Assets Sparshad Kasote, Suvodeep Das, and Santhosh Rao

Connected by Design - Our learnings from designing digital profiler journeys IDFC Bank Digital Experience Debasish Biswas, Nihal Pimpale, and Konark Ashara

Design guidelines for exploring relationships in a connected big data environment Iaison Iacob, and Santhosh Rao

Session 9f: Workshops Summary (Lecture Hall 33) Chairs: Torkil Clemmensen, Venkatesh Rajamanickam



Tea | 3:20 PM

Friday, September 29 | 3:50 PM Closing Keynote (Professor B. Nag Auditorium) Matt Jones: Weaving New Mobile UX Futures through Integrated Innovation across 3 Continents, 4 Countries and a Diversity of Perspectives Chair: Ian Gulliksen

# Installations, Demonstrations, and Interactive Posters

### Installations (See maps on pages 40-41)

Conversations and Things—The pattern maker Reeta Mehrishi, Anindita Saha, and Astha Johri

Data Jalebi Bot

Gaurav Patekar, Himanshu Bablani, and Karan Dudeja

Depth Data Visualization using Kinect and Processing Katyayani Singh, and Priyanka Rai

Insight-Out: Shaping Our World of Ideas Chitra Chandrashekhar, Lakshmi Deshpande, Chinmayee Samant, Himanshu Goyal, and Rohit Soni

Project Air Draw Prabhat Mahapatra, and Nikhil Tailang

Snakes and Ladders: A Sonification Hanif Baharin

Tick Tock Yash Chandak

Who you are is what you get—A reflection on search and information gathering Rohit Gupta

## Demonstrations (See maps on pages 40-41)

Little Bear—A Gaze Aware Learning Companion for Early Childhood Learners Deepak Akkil, Prasenjit Dey, and Nitendra Rajput

Inclusive Side-scrolling Action Game Securing Accessibility for Visually Impaired People Masaki Matsuo, Takahiro Miura, Masatsugu Sakajiri, Junii Onishi, and Tsukasa Ono

ReRide A Platform to Explore Interaction with Personal Data Before, During, and After Motorcycle Commuting Naveen Bagalkot, Tomas Sokoler, Riyaj Shaikh, Gaurav Singh, Anders Edelbo Lillie, Pratiksha Dixit, Aditi Rai, Chakravarthy Vignesh, and Ashwin Senthil

Coaching Compliance: A Tool for Personalized e-Coaching in Cardiac Rehabilitation Supraja Sankaran, Mieke Haesen, Paul Dendale, Kris Luyten, and Karin Coninx

SoPhy: Smart Socks for Video Consultations of Physiotherapy Deepti Aggarwal, Thuong Hoang, Weiyi Zhang, Bernd Ploderer, Frank Vetere, and Mark Bradford

## Interactive Posters (See maps on pages 40-41)

BendSwipe: One Handed Target Zooming for Flexible Handheld Display Keyur Sorathia, Aditi Singh, and Mayank Chhabra

Crowdsourcing of Accessibility Attributes on Sidewalk-based Geodatabase

Michaela Riganova, Jan Balata and Zdenek Mikovec

Dual-Mode User Interfaces for Web based Interactive 3D Virtual Environments Using Three.js
Matthew Stanton, Thomas Hartley, Fernando Loizides, and
Adam Worrallo

Fine-grained Privacy Setting Prediction using a Privacy Attitude Questionnaire and Machine Learning Frederic Raber, Felix Kosmalla, and Antonio Krueger

Interactive Reading Using Low Cost Brain Computer Interfaces Fernando Loizides, Liam Naughton, Paul Wilson, Michael

Loizou, Shu-fan Yang, Thomas Hartley, Adam Worrallo, and Panayiotis Zaphiris

Investigating Control of Virtual Reality Snowboarding Simulator Using a Wii FiT Board Rhiannon Wood, Fernando Loizides, Thomas Hartley, and Adam Worrallo

Pragati - A Mobile Based Virtual Reality (VR) Platform to Train and Educate Community Health Workers Keyur Sorathia, Kshipra Sharma, Shimmila Bhowmick, and Preetham Kamidi

Shifting from the Children to the Teens' Usability: Adapting a Gamified Experience of a Museum Tour Vanessa Cesário, Marko Radeta, António Coelho, and Valentina Nisi

TTracker: Using Finger Detection to Improve Touch Typing Training Elvin Kollie, Fernando Loizides, Thomas Hartley, and Adam Worrallo

URetail: Privacy User Interfaces for Intelligent Retail Stores Frederic Raber, and Nils Vossebein

Versatile Classroom Management Solution for Teachers in Developing Countries

Muhammad Zahid Iqbal

## Social Events at INTERACT 2017



Gateway of India, Mumbai (Image Credit: Rahul Manoharan)

## (Top) Mumbai Darshan

## September 24, 25, 26 & 30 | 8 AM-6 PM

For participants of INTERACT 2017, we are organizing one-day Mumbai guided tours called "Mumbai Darshan". A professional guide will accompany each tour. In addition, a student volunteer will also be present.

## (Below) Freshie's Night

## September 25 | 6:00 PM-7:30 PM

Come get introduced to the conference. Find out more about the conference programme, mingle with INTERACT veterans or just meet new people.



Delegates during the Welcome Reception at INTERACT 2015 Bamberg



Dancers dressed to dance for the Navratri festival (Image credit: Flickr/Restless mind)

## (Top) Dandia Night

## September 27 | 6:30 PM

INTERACT 2017 falls during the time of Navratri, the festival of dance in the praise of Goddess Durga. It is a wonderful opportunity for the participants of the conference to seep themselves in the spirited activities and soak in the culture and joy of Navratri.

## (Below) Conference Dinner

September 28 | 7:00 PM-9:00 PM



Meluha The Fern, Powai, Mumbai (Image Credit: www.meluhafernhotel.com)

## Chairs

#### **General Chairs**

Anirudha Joshi (IDC, IIT Bombay, India) Girish Dalvi (IDC, IIT Bombay, India)

## Keynotes and Invited Talks Chair

Philippe Palanque (IRIT, France)

## **Full Papers Chairs**

Regina Bernhaupt (Ruwido, France) Jacki O'Neill (Microsoft Research, India)

## Workshops Chairs

Torkil Clemmensen

(Copenhagen Business School, Denmark)

Venkatesh Rajamanickam (IDC, IIT Bombay, India)

## Field Trips Chairs

Nimmi Rangaswamy (Xerox, India)

Jose Abdelnour Nocera (University of West London, UK) Debjani Roy (Mumbai, India)

## **Short Papers Chair**

Peter Forbrig (University of Rostock, Germany) Sriganesh Madhvanath (PARC, USA)

#### **Demonstrations Chairs**

Takahiro Miura (University of Tokyo, Japan)

Shengdong Zhao

(National University of Singapore, Singapore)

Manjiri Joshi (IDC, IIT Bombay, India)

#### **Posters Chairs**

Girish Prabhu (Srishti Labs, India)

Zhengjie Liu (Dalian Maritime University, China)

#### **Doctoral Consortium Chairs**

Paula Kotze (CSIR Meraka Institute, South Africa) Pedro Campos (Madeira Interactive Technologies Institute, Portugal)

#### Student Research Consortium Chairs

Indrani Medhi Thies (Microsoft, India)

Naveen Bagalkot (Srishti Labs, India)

Janet Wesson (Nelson Mandela Metropolitan University, South Africa)

#### **Student Design Consortium Chairs**

Abhishek Shrivastava (IIT Guwahati, India)

Prashant Sachan (Trell, India)

Arnab Chakravarty (Philips Design, India)

#### **Installations Chairs**

Ishneet Grover (Samsung, India) Jayesh Pillai (IDC, IIT Bombay, India)

Nagraj Emmadi (TCS, India)

#### **Courses Chairs**

Gerrit van der Veer

Dhaval Vyas

(Queensland University of Technology, Australia)

#### **Case Studies Chairs**

Ravi Poovaiah (IDC, IIT Bombay, India)

Elizabeth Churchill (Google, USA)

#### **Industry Presentations Chairs**

Suresh Chande (Microsoft, Finland)

Fernando Loizides (University of Wolverhampton, UK)

#### **Panel Chairs**

Antonella De Angeli (University of Trento, Italy)

Rosa Arriaga (Georgia Tech, USA)

## **Technical Program Chair**

Marco Winckler (IRIT, France)

## **Proceedings Chairs**

Marco Winckler (IRIT, France)

Devanuj (IDC, IIT Bombay, India)

#### Web and Social Media Chair

Naveed Ahmed (Adobe Systems, India)

#### Student Volunteer Chairs

Rasagy Sharma (Mapbox, India)

Jayati Bandyopadhyay (Conduent Labs, India)

#### Sponsorship Chair

Atul Manohar (Informatica, India)

#### Venue Arrangements Chair

Sugandh Malhotra (IDC, IIT Bombay, India)

#### **Travel Arrangements Chair**

Rupesh Nath (IDC, IIT Bombay)

#### Childcare Club Chairs

Atish Patel

Susmita Sharma (IDC, IIT Bombay, India)

#### **Accessibility Chairs**

Prachi Sakhardande (Microsoft India R&D, India)

Sonali Joshi (TCS, India)

#### Food and Social Events Chair

Rucha Tulaskar (Mumbai, India)



The 18th IFIP TC.13 International Conference on Human-Computer Interaction

2-6 SEPTEMBER 2019 / PAPHOS - CYPRUS

The 18th IFIP TC.13 International Conference on Human-Computer Interaction - INTERACT 2019 will be held from 2 - 6 September. 2019 in Paphos, Cyprus.

INTERACT conferences are an important platform for researchers and practitioners in the field of human-computer interaction (HCI) to showcase their work. Over the years, the conferences have attracted researchers from several countries and cultures.

www.interact2019.org











# INDIA HCI 2018 Bangalore

December 2018



# Beyond & Behind the Screen



On one hand the screen is getting smaller, and on the other the underlying technology driving screen based interaction is getting larger and complex. Algorithms, Machine Learning, and Artificial Intelligence are driving most of our day-to-day interaction with digital technology. Furthermore, digital technology is also made available in modes that do not need a screen to interact with. Tangible, physical, audio and aural modes of interacting are becoming more pervasive.

















We will explore this foundational shift at INDIA HCI 2018, Bangalore.

The hi-tech city of gardens.

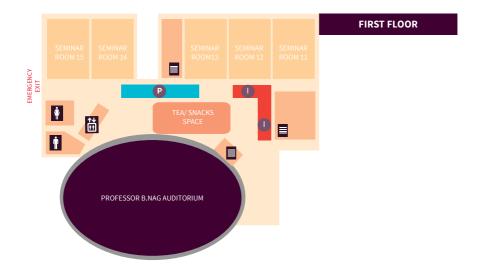
Conference Host

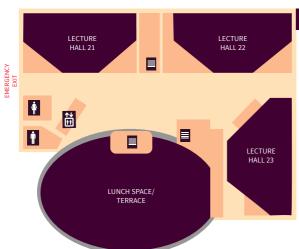


Institute of Art, Design and Technology

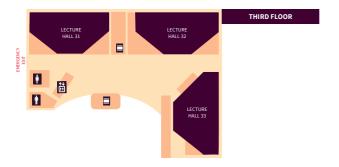
## Venue Map: VMCC, IIT Bombay



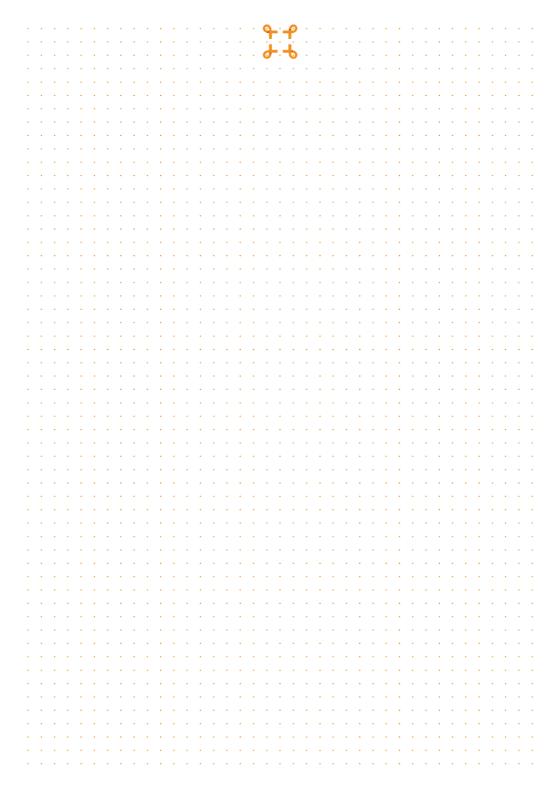














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