CHI 2018: Conference Preview

As technology use in daily life continues to increase, so does the responsibility for human-computer interaction professionals to design and implement elegant, secure, useful and usable interactive environments that enhance the quality of life. At CHI 2018, thousands of the world’s top researchers, scientists, and designers will gather to explore new ideas. Presenters from companies such as Google, Facebook and Spotify will join scholars from universities including Stanford, MIT, Harvard, Carnegie Mellon and the University of Waterloo to present their latest research, solve their hardest problems, learn new material and build their networks at this year’s ACM CHI Conference on Human Factors in Computing Systems, (CHI 2018) from 21 April - 26 April at the Palais des Congrès de Montréal, Canada.

Held annually since 1982, the conference is expected to draw about 3,000 professionals from 50 countries. The theme of this year’s conference is Engage. “We’ve organized this year’s event to encourage attendees to engage with the technology, engage with the research, and engage with their colleagues within the SIGCHI community,” explained CHI 2018 Co-chair Mark Hancock.

Christian Rudder will deliver the opening keynote, User Engagement and User Engagements: the Data of Online Dating. As Co-founder of the popular dating site, OkCupid, Rudder will discuss core ideas from his recent book, Dataclysm, in which he explores the human behavior behind datasets and explains how data provides a revolutionary look at who we truly are.

Sue Gardner will deliver the closing keynote: How the Internet has broken democracy, and what we can do now. From 2007 to 2014, Gardner was executive director of the Wikimedia Foundation, the nonprofit that operates Wikipedia and the world’s largest and most popular encyclopedia. During her tenure she grew the Wikimedia Foundation into a sustainable business and an organization that stood against attempts at censorship. She will share her experiences and discuss how she sees the challenges of public access to information and attempts at censorship developing in the future.

“In addition to our opening and closing speakers, CHI 2018 offers a robust conference program full of opportunities to engage and interact with tomorrow’s technologies today,” said Regan Mandryk, CHI 2018 Co-chair.

About the CHI Conference

Originally a small conference for psychologists interested in user interface design, the annual CHI conference has grown to include a very diverse participant group such as interaction designers, computer scientists, engineering psychologists, developers, lawyers and performing artists. It deals with larger problems such as the organizational integration of technology and
the use of technology in all areas of life. The experience at CHI 2018 offers innovative opportunities for engaging and interacting with future technologies.

Featuring 667 works, the CHI conference is the premier worldwide forum for the exchange of all aspects of human-computer interaction. These works are presented in several venues including paper sessions; panel/roundtable discussions; case studies; courses; special interest group sessions; student research and design competitions; interactive Demonstrations and a Video Showcase (snacks included.) Presentation topics including the Internet of Things; usable privacy and security; health and wellness; cryptocurrency and banking; data analytics; automotive; augmented and virtual reality; wearables; social media and the sharing economy will be addressed.

The following areas represent a small portion of this year’s conference. For complete information, consult the CHI 2018 program.

Presentations of Special Interest

- Opening Keynote: Christian Rudder, (Co-Founder of OkCupid and author of Dataclysm) will present User engagement and user engagements: the data of online dating
- Closing Keynote: Sue Gardner (special advisor to the Wikimedia Foundation, journalist and former CEO of Wikipedia) will present: How the Internet has broken democracy, and what we can do now
- CHI Expo and Reception: celebrate the 50th anniversary of Doug Engelbart’s Mother of all Demos with 77 new demonstrations of the future!

A GLIMPSE OF THE FUTURE

Internet of Things
New research to enhance the quality of life:

- Paper: A Bot is Not a Polyglot: Designing Personalities for Multi-Lingual Conversational Agents (Tu)
- Paper: The Ambient Birdhouse: An IoT Device to Discover Birds and Engage with Nature (Tu)
- Late Breaking Work: SpaceBot: Towards Participatory Evaluation of Smart Buildings (W)
- Late Breaking Work: Towards Robust Neuroadaptive HCI: Exploring Modern Machine Learning Methods to Estimate Mental Workload From EEG Signals (W)
- Late Breaking Work: Choptop: An Interactive Chopping Board (W)

Wearables
New approaches to wearable human-computer interaction:

- Paper: Wearables for Learning: Examining the Smartwatch as a Tool for Situated Science Reflection (M)
- CHI Expo/Demo: Design Guidelines for Wearables and Movement in Tabletop Role-Playing Games via a Research Through Design Process (M + Tu)
- Paper: Presenting The Accessory Approach: A Start-up’s Journey Towards Designing An Engaging Fall Detection Device (Tu)
- Paper: Design for Collaborative Survival: An Inquiry into Human-Fungi Relationships (Tu)
- Late Breaking Work: Free-Space Haptic Feedback for 3D Displays via Air-Vortex Rings (W)

Data Analytics
New information on collection and use of data:
- Opening Keynote: Christian Rudder, User engagement and user engagements: the data of online dating (M)
- Paper: We Are the Product: Public Reactions to Online Data Sharing and Privacy Controversies in the Media (M)
- Paper Session: Quantifying and predicting performance (M)
- Paper: ECGLens: Interactive Visual Exploration of Large Scale ECG Data for Arrhythmia Detection (M)
- Late Breaking Work: Fitbit for the Mind?: An Exploratory Study of ‘Cognitive Personal Informatics’ (W)
- Late Breaking Work: Using Eye Movement Data and Visit Contexts to Understand the Experience of Museum Visitors (W)
- Late Breaking Work: Got Flow? Using Machine Learning on Physiological Data to Classify Flow (W)
- Late Breaking Work: Concern But No Action: Consumers’ Reactions to the Equifax Data Breach (W)
- Paper: RecipeScape: An Interactive Tool for Analyzing Cooking Instructions at Scale (Th)
- Closing Keynote: Sue Gardner, How the Internet has broken democracy, and what we can do now (Th)

Cryptocurrency and Banking
New research on digital currency and human-computer interaction:
- Paper: An Experimental Study of Cryptocurrency Market Dynamics (M)
- Paper: Making Sense of Blockchain Applications: A Typology for HCI (M)
- Paper: Digital Payment and its Discontents: Street shops and the Indian Government’s Push for Cashless Transactions (M)
- Late Breaking Work: Exploring Blockchain for Trustful Collaborations between Immigrants and Governments (W)
Sharing Economy
New research on the sharing economy and human-computer interaction:

- Paper: Algorithmic Anxiety and Coping Strategies of Airbnb Hosts (Tu)
- Late Breaking Work: Appropriated or Inauthentic Care in Gig-Economy Platforms: A Psycho-linguistic Analysis of Uber and Lyft (W)
- Paper: More stars or More Reviews? Differential Effects of Reputation on Trust in the Sharing Economy (Th)

Automotive
New research and ideas about automotive interfaces:

- Paper Session: Interactivity in Autonomous Vehicles (M)
- Paper: What makes an automated vehicle a good driver? Exploring lane change announcements in dense traffic situations (M)
- Paper: Fast & Furious: Detecting Stress with a Car Steering Wheel (M)
- Paper: Automotive User Interfaces: Expert Discussion (Th)
- Paper: Human-Machine Interaction for Vehicles: Review and Outlook (Th)

Usable Privacy and Security
New research and ideas on privacy and security using human-computer interaction:

- Social Impact Award Talk: Lorrie Cranor presents Making Security and Privacy More Usable (M)
- Paper: A Stalker's Paradise: How Intimate Partner Abusers Exploit Technology (M)
- Paper: Keeping a Low Profile? Technology, Risk and Privacy among Undocumented Immigrants (M)
- Paper: "We Are the Product": Public Reactions to Online Data Sharing and Privacy Controversies in the Media (M)
- Paper: The Use of Private Mobile Phones at War: Accounts From the Donbas Conflict (M)
- Late Breaking Work: Privacy and Fear in the Drone Era: Preserving Privacy Expectations Through Technology (W)
- Late Breaking Work: Concern But No Action: Consumers' Reactions to the Equifax Data Breach (W)
- Late Breaking Work: Privacy Invasion Experiences and Perceptions: A comparison between Germany and the Arab World (W)
- Paper: What Did I Really Vote For? On the Usability of Verifiable E-Voting Schemes (Th)

Social Media
New research on the effects of social media on real communities:
● Paper: **Social Computing-Driven Activism in Youth Empowerment Organizations: Challenges and Opportunities** (M)
● Late Breaking Work: **Seeing Is Believing: How People Fail to Identify Fake Images on the Web** (W)
● Late Breaking Work: **Oh The Places You'll Share: An Affordances-Based Model of Social Media Posting Behaviors** (W)
● Paper: **Let’s Hate Together: How People Share News in Messaging, Social, and Public Networks** (Th)

**Health and Wellbeing**
New human-computer interaction strategies for maintaining or improving health:
- Paper: **Seismo: Blood Pressure Monitoring using Built-in Smartphone Accelerometer and Camera** (M)
- Paper: **ECGLens: Interactive Visual Exploration of Large Scale ECG Data for Arrhythmia Detection** (M)
- Paper: **More Text Please! Understanding and Supporting the Use of Visualization for Clinical Text Overview** (M)
- Late Breaking Work: **Evaluating Mindfulness Meditation Apps** (W)
- Late Breaking Work: **Sensalert: A Real-time Group and Individual Health Tracking Application** (W)
- Late Breaking Work: **Exteriorizing Body Alignment in Collocated Physical Training** (W)
- Late Breaking Work: **Fitbit for the Mind?: An Exploratory Study of ‘Cognitive Personal Informatics’** (W)

**Augmented Reality and Virtual Reality**
New human-computer interaction considerations for virtual or augmented reality:
- Paper: **Vanishing Importance: Studying Immersive Effects of Game Audio Perception on Player Experiences in Virtual Reality** (W)
- Paper: **The RAD: Making Racing Games Equivalently Accessible to People Who Are Blind** (W)
- Paper: **Remixed Reality: Manipulating Space and Time in Augmented Reality** (W)
- Special Interest Group: **Redefining Natural User Interface** (W)
- Late Breaking Work: **Physical Guides: An Analysis of 3D Sketching Performance on Physical Objects in Augmented Reality** (W)

**Gaming**
New research guiding the development of future games:
- Paper: **The Privilege of Immersion: Racial and Ethnic Experiences, Perceptions, and Beliefs in Digital Gaming** (M)
• **GameJam**: New games made and played at CHI 2018! (Tu)
• Late Breaking Work: *You’re Giving Me Mixed Signals!: A Comparative Analysis of Methods that Capture Players’ Emotional Response to Games* (W)
• Paper: *Vanishing Importance: Studying Immersive Effects of Game Audio Perception on Player Experiences in Virtual Reality* (W)
• Paper: *The RAD: Making Racing Games Equivalently Accessible to People Who Are Blind* (W)
• Course: *Gamification: Tools and Techniques for Motivating Users* (Th)

**Designing for Older Adults**
User interface design with older adults in mind:

• Paper: *Exploring the Design of Tailored Virtual Reality Experiences for People with Dementia* (M)
• Late Breaking Work: *Challenges and Requirements for Technology to Support Mobility of Older Adults* (W)
• Late Breaking Work: *Understanding Older Adults’ Long-term Financial Practices: Challenges and Opportunities for Design* (W)
• Late Breaking Work: *Potential of Exoskeleton Technology to Assist Older Adults with Daily Living* (W)

**Designing for Children**
User interface design with children in mind:

• Paper: *Safety vs. Surveillance: What Children Have to Say about Mobile Apps for Parental Control* (M)
• Paper: *Coco’s Videos: An Empirical Investigation of Video-Player Design Features and Children’s Media Use* (M)
• Paper: *A Matter of Control or Safety? Examining Parental Use of Technical Monitoring Apps on Teens’ Mobile Devices* (M)
• Paper: *Co-designing Mobile Online Safety Applications with Children* (M)
• Paper: *Streets for People: Engaging Children in Placemaking Through a Socio-technical Process* (M)
• Paper: *Huggable: The Impact of Embodiment on Promoting Socio-emotional Interactions for Young Pediatric Inpatients* (W)
• Paper: *Supporting Communication between Grandparents and Grandchildren through Tangible Storytelling Systems* (W)
Courses
In addition to the technical presentations, CHI 2018 offers a diverse series of 24 courses. These courses range from basic classes, such as Designing with the Mind in Mind: The Psychological Basis for UI Design Guidelines to narrowly focused advanced topics such as Speech and Hands-free Interaction: Myths, Challenges, and Opportunities and Navigation Interfaces for Virtual Reality and Gaming: Theory and Practice.

CHI Expo: Conference Reception and Demonstrations
This year’s Conference Reception celebrates the 50th Anniversary of Douglas Engelbart’s Mother of All Demos by providing a glimpse into the future. CHI Expo is a highly immersive program that features 77 hands-on demonstrations and is an opportunity to fully engage at a personal level by touching, seeing and hearing interactive visions for the future. They come as prototypes, artworks, design experiences as well as inspirational technologies. The CHI Expo promotes and provokes discussion about the role of technology by actively engaging attendees one-by-one. CHI Expo includes:

- **Feeling Speech on the Arm**
  A team of researchers from Facebook introduce a language communication system that transmits a tactile representation of spoken or written language to the arm.

- **The MOMENT: A New Brain Controlled Movie**
  This demonstration exhibits some interactions designed for the forthcoming brain-controlled movie The MOMENT.

- **HCI Interventions for Monitoring Environmental Health**
  Dr. Hill H. Kobayashi will present a collection of HCI interventions designed to monitor radiation levels in the exclusion zone around the Fukushima Daiichi Nuclear Power Plant in Japan.

Sneak a peek at the [Demonstrations Video Preview](#).

Professional Networking / Tuesday Night Job Fair
The combination of technical sessions and courses along with informal conversations help form a community of Human-Computer Interaction professionals. Many attendees return each year because the relationships formed with other members of the community are as important as technical presentations. Conference participants can spend their days encountering unexpected new ideas and take advantage of formal and informal networking opportunities to discuss them. Of special interest is the [Tuesday night Job Fair](#), a scheduled time for interested participants to explore employment opportunities. Many of CHI’s exhibitors are active recruiters, in addition to demonstrating prototypes or fully developed products.
Video Showcase and Immersive Art Exhibit On Wednesday evening, participants will have the opportunity to immerse themselves in the CHI 2018 Video Showcase while visiting with colleagues and nibbling on snacks. In addition to Videos, an Immersive Art Exhibit will be presented as well.

SIGCHI Awards Talks provide an opportunity for accomplished members of the community to share their perspectives.

- Social Impact Award: Lorrie Faith Cranor, Carnegie-Mellon University, will present Making Privacy and Security More Usable (M)
- Lifetime Practice Award: Arnie Lund, University of Washington, will present Riding the Wave (M)
- Lifetime Research Award: Steven K. Feiner, Columbia University, will present Seeing Past Looking Forward (Tu)

About SIGCHI

SIGCHI, the ACM Special Interest Group on Computer-Human Interaction (www.sigchi.org), is the premier international society for professionals, academics and students who are interested in human-technology and human-computer interaction (HCI). SIGCHI serves as a forum for ideas on how people communicate and interact with computer systems. This interdisciplinary group of computer scientists, software engineers, psychologists, interaction designers, graphic designers, sociologists, and anthropologists is committed to designing useful, usable technology which has the potential to transform individual lives.

About ACM

ACM, the Association for Computing Machinery (www.acm.org), is the world’s largest educational and scientific computing society, uniting computing educators, researchers and professionals to inspire dialogue, share resources and address the field’s challenges. ACM strengthens the computing profession’s collective voice through strong leadership, promotion of the highest standards, and recognition of technical excellence. ACM supports the professional growth of its members by providing opportunities for life-long learning, career development, and professional networking.

Organizations contributing to the financial support of the conference include Champion Sponsors Alibaba Group, Bloomberg, Facebook, Google, Inc., IBM Research, Microsoft Corporation, and Oath: A Verizon Company.

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