HCI International 2020

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AC Bella Sky Hotel and Bella Center, Copenhagen, Denmark

AI-HCI 2020
1ST INTERNATIONAL CONFERENCE ON ARTIFICIAL INTELLIGENCE IN HCI

Jointly held under one management and one registration with HCI International 2020

http://2020.hci.international/ai-hci

Chairs
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The conference brings academics, practitioners and students together to exchange results from academic and industrial research, as well as industrial experiences, on the use of Artificial Intelligence technologies to enhance Human-Computer Interaction. In particular, the following areas of research are relevant: (i) AI-enabled components to model the behavior of humans, groups, and computer-enabled dialogs; (ii) Evolution of HCI methods, tools and processes based on AI; (iii) Processes, methods and technical frameworks in the area of generative UX / UI design, automatic creation and adaptation of user interfaces ; (iv) AI-enabled advanced and natural interaction modalities and styles, (e.g., conversational voice or text user interfaces), and enhancement of traditional ones (e.g. visual, direct manipulation, 2D, 3D); (v) AI-based user task support in various application domains, by making core tasks useful, usable, explainable, comprehensible, safe, secure and ethical. The conference is targeted at individuals and organizations who have performed research and developed industrial applications in the area of AI in HCI. The conference is also targeted at individuals and organizations which want to learn from those results, so they can (re-)use them in research or industrial applications.

Indicative topics/keywords of the broad spectrum of issues to be addressed under an HCI perspective:

- **User, social and dialog models**
  - Human modelling: Cognitive models, emotional models, stress models, perception models, actor models, goal / workflow / task models, constrained ability models, aging models (cradle to grave), learning models
  - Social models: Regional models, cross-regional models, group organization models, group - machine organization models, group communication models, group - machine communication models
  - Dialog models: Interaction models, dialog models, interaction modality models, content models, adaptation models (adapting UI over usage life spam)

- **Tools, methods and processes**
  - Tools: identify training / testing content, acquire training / testing content, annotate content, train and test models, evaluate trained models, improve trained models
  - Methods: user research methods, evaluation methods, usability evaluation metrics
  - Processes: Revised human-centered design (HCD) process; revised integration of HCD process into development process

- **Generative UX/UI design**
  - Process: goal settings, model selection / training, data acquisition, learning and improvement, refinement.
  - Method and tools: user model, data model, interaction model, domain model, adaptability model, evaluation model
  - Generative UI design frameworks

- **Interaction modalities and devices**
  - Visual: 2D, 3D, virtual realities, augmented realities, mixed realities; glasses, lenses,
  - Voice / sound: Languages, accents, dialects, grammar, tone of voice, grammar; headsets, ear buds, built-in speakers; microphones
  - Gesture / mimic / bodies; gesture / mimic language, gesture / mimic grammar, movements; camera, image analysis, heat analysis, wave analysis
  - Haptic: language, grammar for different body parts; haptic actors
  - Brain, emotion / stress
  - Multimodal interfaces

- **Core tasks in application domains**
  - Content management: facilitating and supporting content finding, creation, configuration, optimization, review and/or improvement (e.g. for engineering, products, services, healthcare, infrastructure, science, design, art, regulations, news, ...)
  - Communication with computers / machine / robots: facilitating and supporting awareness; communication, clarification, negotiation, acceptance, rejection and confirmation of messages (e.g. in manufacturing, field work, virtual environment)
  - Corrective or preventive actions: identification and presentation of issues; identification of root causes; suggestion and selection of corrective or preventive actions of (e.g. in design, engineering, operation, manufacturing, maintenance, healthcare, ...)
  - Learning: suggestion of learning topics and tactics; presentation of learning content; evaluation of learning progress (e.g. in self-learning, schools, universities, product design, product installation, product usage, maintenance, repair, other life situations, ...)
  - Teaming (consisting of humans or humans and machine / robots): Definition of goals; derivation, definition and explanation of tasks; suggestion of task assignments to team members; negotiation of task assignment; task execution and task execution suggestions; task completion monitoring (e.g. in manufacturing, field work, health care, home care)
  - Match finding: Define, suggest, refine offerings; define, suggest, refine demands; suggest matches; select and track match; identify deviations (e.g. buying/selling, hiring, dating, investments, ...)
  - (Semi-)Autonomous systems: Setting goals, context and boundaries; suggesting, selecting and starting execution; monitoring execution progress, identifying deviations, suggesting corrective actions (e.g. cars, airplanes, ships, plants)
  - Safety: Make AI- based system collaboration safe and comfortable for humans and machine / robots
  - Security: predicting and identifying vulnerabilities; predicting and suggesting mitigations; selecting and executing mitigations; monitoring incidents
  - Ethical: identifying and addressing biases and potential conflicts such as fairness, privacy, equity, diversity, power assignment and distribution, norms, values / believes

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