CALL
FOR
PAPERS
& POSTERS

Human-Centered Computing
Казань, Россия
August, 2017

August 2017

KAZAN
RUSSIA

Human Centered Computing
07-09 August 2017 ● Kazan ● Russia Federation

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The Third International Conference on Human-Centered Computing

http://hcc.scholat.com/

The Joint ICPCA11/SWS8 Conference on Human Centered Computing (HCC) 2017 will be held in Kazan, Russia from 07 to 09 August 2017. The goal of HCC2017 is to further explore both theoretical and practical issues in and around the emerging computing paradigms. It is the main forum to exchanges ideas and visions on how ICT can support the construction of intelligent and sustainable societies.

In 2017, HCC features three special research tracks on human-robot interactions, human enhancements and brain informatics.

Topics

The main HCC2017 track would like to solicit contributions to three main themes:

HYPERCONNECTIVITY

Internet of Things
Internet of Everything
Sensor Network
Smart Environment
Smart Energy
Assisted Living
Cloud Computing:
Virtualisation
Mobile Network
Interaction Devices

DATA

Big Data:
Storage, Curation, Management, Analytics
Data visualisation
Linked Data/Open Data
Data Provenance
Recommendation Systems
Data-driven Interfaces
Data-driven Design
Data security:
Block-chain Technology

COLLABORATION

Pervasive Collaboration
Collective Intelligence
Peer Production
Social Machine
Online Communities
Social Network Analysis
Social Sensing
Context Awareness
Multimodal Interfaces

Publication

Papers should not exceed fourteen (14) pages in length and must be formatted according to the information for LNCS authors. All papers will be peer-reviewed by members of the HCC 2017 programme committee. Papers are selected based on their originality, significance, relevance, and clarity of presentation. Authors of selected papers will be invited to submit an extensively expanded version of their papers to be considered for publication in special issues in international journals.

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Human Enhancement

Motivation

In the EU FP7 project on *RoboLaw: regulating emerging robotic technologies in Europe- robotics facing law and ethics*, robotic enhancing technologies were shown to be not only restorative, restoring a lost function, but also to enhance capabilities (RoboLaw, 2014).

Stradella (in Warwick et al., 2013) cites the case of the first legal cyborg, Neil Harbisson, who sought renewal of his passport. In the first instance Harbisson did not succeed, because the British passport Office would not allow him to appear in his passport photograph with electronic equipment on his head (Fig 1). Harbisson was born with achromatopsia and only a cyber-implant allowed him to perceive colours by memorising the frequencies related to each colour.

Fig 1: Neil Harbisson with eyeborg device

Fig. 2: Dave Hurban's iPod-magnet implants

While Harbisson's technological implant allows him to 'see' colour, so embed a function most humans have, others have used implants as enhancements. The case of Dave Hurban shows implants to enhance body capacity (Fig 2). Hurban had four magnets implanted in his left wrist to hold his iPod Nano music device leaving his hands free (Saginor, 2012).

Like tattoos, should technological enhancements be allowed as far as the human is able to pay for them? **HCC2017 seeks original papers considering** where the line should be drawn between human and cyborg. What are the medical, social, ethical and legal implications for a society of free-for-all technological enhancement if it means those who can afford are faster, stronger and more capable?

Topics

List of Topics include but are not restricted to:

- The meaning of *human* and *enhanced human*
- Human body and evolution through enhancement
- Social relations between humans and enhanced humans
- Enhancing the body and the law
- Liability of enhancing technology designers
- Governance and the Enhanced Society
- Preventing hacking of enhancing technologies and control of enhanced humans

Track Chair

Huma Shah   Coventry University UK

Motivation

Alan Winfield, Bristol University roboticist's position on gender in robots states is that it is tantamount to deception (Winfield, 2016):

> "*Robots cannot have a gender in any meaningful sense. To impose a gender on a robot, either by design of its outward appearance, or programming some gender stereotypical behaviour, cannot be for reasons other than deception - to make humans believe that the robot has gender, or gender specific characteristics.*"

Jennifer Robertson's research into gendering humanoid robots in Japan considered the question *how do (the mostly male) roboticists design and attribute the female or male gender of humanoid robots?* (2010). What Robertson learnt was that "the practice of attributing gender to robots" is a "manifestation of roboticists' tacit, common sense knowledge", and "how robot makers gender their humanoids is a tangible manifestation of their tacit understanding of femininity in relation to masculinity and vice versa" (2010: p.4). Robertson's investigation revealed that the criteria by which roboticists assigned gender, was as a result of "naive and unreflexive assumptions about humans' differences" and these "informed how they imagined both the bodies and the social performances of their creations" (2010: p. 5).

HCC2017 seeks original papers considering Winfield's position and Robertson's study from a philosophical, psychological, social, economic, legal and ethical perspective.

Should robot development be democratised with gender-balanced labs? Especially where robots are being developed as humanoid carers and companions to human elderly and the sick. (ICAART2016). If we don't, do we risk stereotyping robots with female-formed humanoids fulfilling roles such as that of *Nadine* Singapore's Nanyang Technological University robo-receptionist ? (Fig 1).

Fig 1: Nadine robo-receptionist

Topics

List of Topics include but not limited to:

- Social Gender and Biological Sex in Humans
- Stereotypical male and female roles in society
- Genderless Robot and Humanoid development
- Gendering Humanoids: purpose?
- Gendered robots and the law
- Governance of Gendered Robots
- Interaction between Humans and Gendered Robots

Track Chair

Huma Shah   Coventry University UK

Motivation

Anthropic-oriented computing is an interdisciplinary process which lies at the intersection of sociology, neuroscience, philosophy, anthropology, psychology, and computer science. Currently, anthropic-oriented computer systems are a 'melting pot' of interacting parts which mix a broad range of economical, philosophical, and socio-technological interests and challenges. Addressing these interests and challenges demands suitable approaches to enable the holistic management of ecosystems, this requires trans/interdisciplinary approaches.

In this special session we specifically focus on the anthropic aspects of this complex scenario projecting them into computer science. The principal focus is on humans, covering a broad spectrum from inward (emotions and affective computing) to outward aspects of this field of research. On one hand, the focus is on AI through the neuro-physiological perspective. On the other hand, collective intelligence springing from human collaboration and inter-action is at stake, taking into account the cultural divergences that flavour the bounded rational processes with local or situated cognitive perspectives.

Topics

The intention is to raise interest in cross-disciplinary research with potential practical outcomes in the following (but not restricted to) topics:

Affective Computing
- Bio-informatics and neuroscience
- Cognitive Architectures: Emotional computer interface
- Minimal cognitive models and scalability
- Neuroscientific aspects of Affective computing and Robotics

Artificial Intelligence
- Situated and embodied cognition
- Artificial Neural Networks
- Multi agent neural networks
- Realistic and spiking neural networks

Anthropological computing
- Computational Philosophy
- Artificial consciousness
- Computational Psychology

Swarm cognition
- Swarm intelligence
- Distributed cognition
- Swarm cognition

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Joint ICPCA-SWS conferences

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