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European Coordinated Research on Long-Term ICT and ICT-Based Challenges

Call 2020 Draft Topics

The CHIST-ERA ERA-NET is a consortium of research funding organisations supporting joint transnational research on multidisciplinary ICT and ICT-based challenges with the potential to lead to significant breakthroughs. The consortium is itself supported by the European Union's Future and Emerging Technologies programme (FET). In the Call 2020, to be published in October 2020, two new and emerging topics are addressed.

Advanced Brain-Computer Interfaces for Novel Interactions

Recently we have seen an explosion of brain-based technologies that capitalize on human capabilities to improve human-system interactions. Forerunners of this conception are brain-computer interfaces (BCIs), which have been largely focused on improving the quality of life for particular clinical populations such as paralyzed or "locked-in" patients. Near-term applications are primarily task-oriented and are targeted to overcome development obstacles. However, in the longer-term, a holistic approach to BCIs shall enable a range of task-oriented and opportunistic applications by leveraging pervasive technologies and advanced analytical approaches to sense and merge critical brain, behavioral, task, and environmental information. The objective of this topic is to consider BCIs for human-computer, human-to-human, or human-to-object interaction. Of particular interest are BCIs in Virtual Reality and Augmented Reality, without verbal commands.

Application sectors: Healthcare, Telemedicine, Assisted Living, Education & Training, Entertainment & Gaming, Simulation, Cultural and Creative Industries, Advertising

Keywords: Human-machine interaction, brain-computer interface, augmented brain-computer interface, pervasive sensing and computing, collaboration, virtual reality, augmented reality, cyber-physical systems, cyber-human systems

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Towards Sustainable ICT

The energy and resource footprint of ICT is rapidly increasing and is becoming a significant contributor to climate change and various kinds of pollution. At the same time, ICT is an ideal area where the entire technology involved may be rethought systemically. Sustainable ICT concerns all frugality aspects from computing hardware, over middleware and software, to networking and mobile computing, in an integrated manner. Novel and ambitious approaches are sought to design and build systems, software and protocols that minimise resource and energy usage as well as carbon footprint over their entire life cycle from resource extraction to end-of-life, and favour reusability, reparability and recycling. Reaching such a technology objective is likely to be insufficient on its own to keep the impact of ICT within the Earth system limits. Human factors should also be studied to allow rethinking jointly ICT and their usage, in particular minimise rebound effects, a traditional annihilator of many efficiency gains, and foster an environment-aware usage of ICT.

Application sectors: All application sectors of ICT

Keywords: ICT, carbon footprint, energy consumption, material footprint, life cycle analysis, environment-aware usage, frugality, sustainability

CHIST-ERA Conference 2020

September 29-30, 2020, Online

The *CHIST-ERA Conference 2020* brings together prominent scientists and representatives of CHIST-ERA in order to identify and formulate promising scientific and technological challenges at the frontier of research with a view to refine the contours of the Call 2020 topics.

Participate in the definition of the Call 2020!

In addition to introductory keynote talks by internationally renowned scientists, the conference proposes facilitated breakout sessions to brainstorm on the call content. This event represents a unique opportunity for the scientific community to participate in scoping the call topics and to network with potential partners.

Info and registration:
http://www.chistera.eu/conference-2020-programme

Call Information

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