



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

Call 2017 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 2017, to be published in October 2017, two new and emerging topics are addressed.

Object recognition and manipulation by robots: Data sharing and experiment reproducibility

The ability of recognising objects and manipulating them is central to robotics. Robots should for example be able to recognise objects mentioned by a user and fetch them or to visually determine if and how an object can be safely grasped. However, despite decades of research, such abilities remain limited in practice. Limiting factors are the lack of large data sets for training robust models for the tasks under study and of objective evaluation protocols to test these models in a reproducible way. A new approach going beyond the organisation of robotics competitions is needed, whereby robotic perceptions about the surrounding environment and internal states are recorded, annotated with reference information usable to evaluate models, and shared across researchers working on the same task.

Application sectors: Industrial and service robotics

Keywords: Robotics, object recognition, image recognition, artificial vision, visual servoing, grasping, object manipulation, perception through interaction, embodied cognition, machine learning, benchmarking, performance evaluation, experiment reproducibility





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Industrial big data and process modelling for smart factories

Industry and its production plants are increasingly digitized and the production processes generate increasing amounts of heterogeneous data, from simple sensor data to complex 3D video streams. This opens the way for new intelligent, flexible, network-centric production approaches where parts, products and machines are interconnected across plants, companies and value chains. This evolution is often referred to as the fourth industrial revolution. Most industrial sectors are concerned, including aeronautics, energy, chemical industry, dairy farming and 3D industry, among others.

The goal is to enable production at higher yield, higher quality, lower costs, lower environmental footprint and increased flexibility. For that purpose, intelligent context-aware automation systems should be developed. Such systems should be generic enough to be reusable in various settings. One of the research challenges is to combine a priori knowledge about the processes with learning from data.

Application sectors: Industry, manufacturing, maintenance.

Keywords: Smart industry, cognitive plants, advanced manufacturing, predictive maintenance, process modelling, big data, machine learning

CHIST-ERA Conference 2017

June 21-23, Kraków (Poland)

The *CHIST-ERA Conference 2017* in Kraków (Poland), June 21-23, 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 call text.

Participate in the definition of the Call 2017

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://conference2017.chistera.eu>

Call Information

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