

Quick Reference

Please note that you must read the full Call document for guidance before submitting your proposal

Human-like Computing Workshop

Call type: Expression of interest

Closing date: 23:59 on Sunday 22 November 2015

How to apply: Places at the workshop are limited and participants will be selected on the basis of their responses to the questions on the Expression of Interest form at

<https://www.epsrc.ac.uk/newsevents/events/humanlikecomputing/>

Assessment Process: The Expressions of Interest will be judged by an expert Panel who will be seeking to ensure that a wide range of disciplines are involved in the meeting and that the participants will be able to contribute to the objectives of the workshop

Key Dates:

Activity	Date
Deadline for Expressions of Interest	22 November 2015
Assessment Panel	14 December 2015
Notification of decisions and invitation to participate issued	Wb 21 December 2015
Workshop	17 & 18 February 2016

Contacts:

For general enquiries please contact

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Engineering and Physical Sciences
Research Council

Human-like Computing

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Related themes: ICT

Summary

EPSRC is holding a two-day workshop on Human-like computing: exploring the kind of research projects that would need to be put in place in order to work towards systems that can emulate human cognitive performance. The event will take place on 17 and 18 February 2016 at the Mercure Holland House Hotel, Bristol.

The workshop will be multidisciplinary, bringing together researchers from varied domains: psychology to formal methods; social sciences to software engineering.

Background

What is human-like computing?

Human-like Computing can be defined as:

“offering the prospect of computation which is akin to that of humans, where learning and making sense of information about the world around us can match our human performance.”

Two people are moving heavy objects together. Without discussion they agree on which one of several objects to move and who picks up each end, they select grips in ways that complement the other’s action, and start to lift at almost exactly the same time.

A dancer watches a video of a performance: it is in two dimensions. After seeing it once the performer copies the movements in three-dimensions and goes on to incorporate elements of the original with others to form a new routine.

A human tennis coach watches a player and identifies how a stroke could be executed differently to ensure the ball lands correctly. Computers presently cannot do this, so would need to have techniques which build a model of a particular person's tennis stroke and then generate symbolic instructions which tell the player how to make the improvement.

These examples show activities that humans can carry out well but which computers currently find difficult. Current machine learning systems are not coordinated to do these kinds of tasks. They also need many examples – one is not enough.

Humans are good at drawing on their common-sense background knowledge, they are quick to learn and can apply lessons learned in one situation to instances that occur in different contexts. All things that are well-nigh impossible for today's computers.

Over the past couple of decades studies in artificial intelligence and machine learning have led to computers with the ability to carry out many complex tasks such as recognising faces, tracking moving objects, even driving cars. However, computers still have a long way to go before they can emulate human performance.

Computers that could emulate human performance could have useful impacts in many fields: for example, medical, legal, training and education, manufacturing.

The challenges

The workshop will address the challenges that face researchers attempting to design human-like systems. These include:

- Is it possible to design computer systems that could perform tasks like a human?
- What would be the characteristics of such systems?
- What research steps would be needed to get there?
- Which disciplines would need to be involved?
- What new applications would this enable

The aim will be to define the steps that would be needed to achieve this in a computer. EPSRC will then take the information and devise ways to encourage and support research aimed at this goal.

For more information about EPSRC's portfolio and strategies, see our website: <https://www.epsrc.ac.uk/research/ourportfolio/>

How to apply

Places at the workshop are limited and participants will be selected on the basis of their responses to the questions on the Expressions of Interest form, on the event webpage at

<https://www.epsrc.ac.uk/newsevents/events/humanlikecomputing/>

The workshop will take place from 11:00 on 17 February to 12:30 on 18 February 2016 at the Mercure Holland House Hotel, Bristol.

An application will be considered confirmation of availability on these dates and a commitment to attend if selected.

Full details of the venue and agenda will be made available to the selected participants.

Please note that the cost of accommodation and meals at the event will be paid for by EPSRC, but expenses for travelling and subsistence will not be covered by EPSRC.

Assessment

Assessment process

The Expressions of Interest will be assessed by an expert Panel who will be aiming to ensure that participation at the workshop includes the range of disciplines and expertise necessary to chart a course towards the goal of emulating human performance in computer systems.

Assessment criteria

The Panel's judgement will be based on the responses to the questions in the Survey where you are asked to describe:

- Your research area.
- How your research will contribute to the goals of any initiative in this area.
- The other disciplines and knowledge would you need to bring in in order to realise your ideas.
- If there is research you would you like to highlight in a poster and/or demo at the workshop.
- A short biography that includes your wider research interests

Moving forward

Following the workshop a report meeting will be produced and circulated to participants and published via the EPSRC website. The recommendations arising from the workshop will be considered by EPSRC's Information & Communications Technologies theme and its Strategic Advisory Team with a view to deciding how the recommendations can be implemented.

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Change log

Name	Date	Version	Change
Nigel Birch	15 October 2015	1	N/A