Published on *CHIST-ERA Conference 2013* (http://conference2013.chistera.eu)

Alan Winfield

The deep challenge of making adaptive systems safe and trustworthy
Alan Winfield

Alan Winfield is Professor of Electronic Engineering and Director of the Science Communication Unit at the University of the West of England (UWE), Bristol, United Kingdom.

The research of Prof. Winfield is focussed on the engineering and scientific applications of Swarm Intelligence.

Webpage: http://www.ias.uwe.ac.uk/~a-winfie [1]

Abstract of communication:

For any engineering system to be trusted, it must be safe. One of the most significant challenges facing designers of next generation robots is how to make them safe and trustworthy. Robots designed to share human workspaces and physically interact with humans must be safe, yet guaranteeing safe behaviour is extremely difficult because the robot?s human-centred working environment is, by definition, complex and unpredictable. It becomes even more difficult if the robot is also capable of learning and adapting. In this short talk I will argue that a key technology for tackling this problem exists. It is the robot simulator. But we need to use simulators in a radical new way. By incorporating a simulation of a robot, and its working environment, inside the robot?s control system, we can enable the robot to ask ?what if? questions about the consequences of its own actions. This approach would provide the system with a level of functional self-awareness, and might be the best way to build future adaptive systems that are safe and trustworthy.
Adaptive Machines in Complex Environment
June 13
Keynote talk

Attachment	Size
CHIST-ERA Conference 2013 - Alan Winfield.pdf [2]	1.1 MB

.

© CHIST-ERA

- Administration

Source URL: http://conference2013.chistera.eu/communication/alan-winfield

Links:

[1] http://www.ias.uwe.ac.uk/~a-winfie
[2] http://conference2013.chistera.eu/sites/conference2013.chistera.eu/files/CHIST-ERA%20Conference%202013%20-%20Alan%20Winfield.pdf