

Workshop @ AlifeX on Motion, Morphologies and Cognition

Source: <http://sci.tech-archive.net/Archive/sci.cognitive/2006-02/msg00004.html>

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 - *Date:* Sat, 18 Feb 2006 21:46:08 GMT
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Call for papers and demos.....
Motion, Morphologies and Cognition.....
 Workshop @ AlifeX.....
www.informatics.sussex.ac.uk/morphodynamicsgroup/alifexwk
Organized by the Morphodynamics and Cognition Group.....
University of Sussex.....

AlifeX, in June, taking place at Indiana University, USA, is to host a workshop on "Morphologies, Motion and Cognition" organised by the Morphodynamics and Cognition Group from the University of Sussex. This workshop will take place on the 3rd of June (all-day session), and on the evening of the 4th. Venue: Indiana Memorial Union, in the same area as the main conference presentations.

We are accepting submissions of papers and/or proposals of demos.

Aim of the workshop

Our intention is to bring together researchers from robotics, psychology, and ethology to examine and discuss how morphology and motion shapes the perceptual worlds and cognitive behaviours of robots and natural organisms. Although we welcome simulations, we want to encourage work on "physical" robots, or simulated robots that have interesting morphologies.

In the approach to cognition that we will be discussing, cognitive activity is regarded as crucially dependent upon, and emerging from, the exploitation of all the physical properties available to the agent, namely its morphology and motion. The key principle of this approach is to minimise the amount of control at the algorithmic level by exploiting the dynamics of the agent, produced by its interaction with the environment.

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This approach views organisms and robots as dynamic systems, whose parts are continually perturbed by cues from their environments that act to modulate their behaviours.

Keynote Speakers

Inman Harvey, University of Sussex

Rolf Pfeifer, University of Zurich

Topics

The work to be submitted may include (but is not limited to) the following topics:

- the exploitation by an agent of its morphodynamics (morphologies and motion) for cognitive purposes, at any level of "cognition" in both humans and robots.
- passive dynamic walkers
- relation with the environment through active perception
- evolution of morphologies, morphogenesis
- developmental issues in both humans/animals and robots
- dynamical theories of cognition
- embodied and situated robotics
- constructed worlds of robots
- articulated motion in robots and animals
- sensorimotor and movement coordination
- evolvable hardware
- design principles for fully embodied and situated robots
- automatic robot manufacture
- 3D rapid prototyping printers
- non-holonomic robot control
- control for underactuated or compliant structures
- methods for the analysis of the interaction of morphology, motion, and control

Papers

Papers can either be technical or conceptual, in the area covered by the workshop.

Length should not exceed 10 pages, double spaced, and must be emailed in pdf format to one of the organisers (see addresses below in "organising committee")

Demos

Demos can be presented as physical robots, computer simulations or videos of physical robots. If you are interested in presenting a demo please contact

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one of the members of the organising committee as soon as possible.

Important dates

Deadline submission: May 1
Notification of acceptance: May 10
Camera-ready versions: May 20

Publication

If the submitted contributions are of sufficient quality, papers emerging from the workshop will be forwarded to undergo the review process of a scientific journal, for a special issue.

Details

You may find detailed information about the workshop in our webpage at www.informatics.sussex.ac.uk/morphodynamicsgroup/alifexwk or through the conference webpage at www.alifex.org

PROGRAMME COMMITTEE

- Bill Bigge, University of Sussex
- Josh Bongard, Cornell University
- Inman Harvey, University of Sussex
- Phil Husbands, University of Sussex
- Fumiya Iida, University of Zurich
- Eduardo Izquierdo-Torres, University of Sussex
- Akio Ishiguro, University of Nagoya
- Hod Lipson, Cornell University
- Max Lungarella, University of Tokyo
- Romi Nijhawan, University of Sussex
- Chandana Paul, Cornell University
- Rolf Pfeifer, University of Zurich
- Linda Smith, Indiana University
- Olaf Sporns, Indiana University
- Kasper Støj, University of Southern Denmark
- Tim Taylor, Timberpost, Ltd.
- Eric Vaughan, University of Sussex
- Rachel Wood, University of Sussex
- Tom Ziemke, University of Skövde

Organising Committee

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