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Bio-Inspired Model of Network, Information, and Computing Systems

6th International ICST Conference, BIONETICS 2011
York, UK, December 5-6, 2011
Revised Selected Papers

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Preface

Bionetics 2011 was the 6th International ICST Conference on Bio-Inspired Models of Network, Information and Computing Systems, which we were proud to host in the beautiful city of York, UK, which combines a colorful history of Roman and Viking rule with modern science and research developments. This year's conference aimed to continue the tradition of providing a world-leading and unique opportunity for bringing together researchers and practitioners from diverse disciplines who seek the understanding of the fundamental principles and design strategies in biological systems and leverage those understandings to build bio-inspired systems.

Bionetics 2011 opened with a keynote talk by Jeremy Pitt, Reader in Intelligent Systems from Imperial College London. Jeremy's primary research interest is in the science, technology and application of multi-agent systems, especially in communications. Recently, he has been applying socio-economic principles to examine self-organizing institutions. A second keynote was given by Dario Floreano. In 2000 Prof. Floreano was awarded the first Swiss National Science Foundation professorship in bio-inspired robotics at EPFL. In 2005 he was appointed associate EPFL professor and established the Laboratory of Intelligent Systems. In 2011 he was appointed full EPFL professor and became director of the newly established Swiss National Center of Competence in Robotics.

Papers were accepted into two categories; full paper and work-in-progress. Full papers describe significant advances in the bionetics field, while work-in-progress papers present an opportunity for authors to discuss breaking research that is currently being evaluated. Seven full papers were accepted, covering topics ranging from robotic coordination to attack detection in peer-to-peer networks. A further seven work-in-progress papers were inspired by biological mechanisms including evolution, flocking and artificial immune systems. In addition to the main conference track, the conference hosted a parallel stream in the field of "Nano-scale Communication and Networking", chaired by Tadashi Nakano and Michael Moore.

We were delighted to host a PhD forum at Bionetics 2011 to give an opportunity to young researchers to present their work, whatever the stage of their PhD, in a friendly and supportive environment. Researchers attending the forum benefited greatly from the advice given by Prof. A.E. Eiben from the Vrije University, Amsterdam, who has many years' experience of supervising students in the area of biologically inspired computing.

The Bionetics 2011 team would like to thank all the sponsors, including ICST, Create-Net, EAI, and the AWARENESS coordination action, the latter

generously provided support for a number of student bursaries and the keynote speaker for the PhD forum. In addition, we extend our thanks to all those who helped with the conference, including the many people who reviewed papers in the Program Committees, managed publicity and the website and helped in any other way, big or small.

November 2011

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