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Self-Organizing Systems

Second International Workshop, IWSOS 2007
The Lake District, UK, September 11-13, 2007
Proceedings

Springer

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Preface

The 2nd International Workshop on Self-Organizing Systems (IWSOS 2007) was hosted by Lancaster University and held in the beautiful English Lake District. Lancaster University is fortunate to have on its doorstep some of the finest scenery in the United Kingdom, and research groups often take the opportunity to benefit from this natural advantage. For IWSOS 2007 we chose the quiet North Lakes and specifically the Lodore Falls Hotel, which is situated in the Borrowdale valley, just south of Derwent Water and the town of Keswick.

It was a fitting location for the second workshop in the series on self-organizing systems that began last autumn in Passau, Germany.

Future networked systems will, to some degree, need to be self-organizing. For example, they will be deployed in remote and hostile environments, where manual setup and configuration may be undesirable or impossible. Some networks, such as mobile ad-hoc networks, will be spontaneously deployed, have a dynamic population, and may be short-lived. The time it takes traditional management activities to converge, where people are in the control loop, is unsuitably long for these kinds of network. Furthermore, the potential scale and complexity of future networked systems, including the future Internet, will make some form of self-organization highly desirable and perhaps a necessity. The complexity of these networked systems comes from the heterogeneity of devices, communication technologies and protocols, and the stringent user requirements (e.g., resilience) that they will need to support.

Research into self-organizing networked systems is in its infancy, and there is a multitude of open issues to be addressed. Building on the success of its predecessor, this workshop brought together leading international researchers in a visionary forum for investigating the potential of self-organization and the means to achieve it.

These proceedings, which we present to you here, constitute the technical content of IWSOS 2007. There are 17 full papers, 5 short papers and 2 invited keynote talks.

This year's submission was unusual. We received only 36 papers, but the standard was uniformly high – there was no long tail of unsatisfactory or out-of-scope papers that is sometimes experienced by workshop organizers (whose only benefit is to be able to declare a low acceptance ratio). Each paper submitted to IWSOS 2007 was reviewed by four people drawn from an outstanding Technical Program Committee. We are extremely grateful to the TPC for providing such thorough and thoughtful reviews, which made the task of selecting the successful papers so much easier.

Our technical program consisted of sessions on Ad Hoc Routing for Wireless/Sensor Networks (4 papers), Peer-to-Peer Networking (2 papers), Network Topology and Architecture (3 papers), Adaptive and Self-Organizing Networks (3 papers), Multicast and Mobility Protocols (2 papers), and a Miscellaneous session (3 papers) on other important but difficult-to-classify topics. Finally, we have a short-papers session containing 5 papers on very interesting and highly promising work in progress.

The opening keynote talk will be given by Joseph Hellerstein, formerly of IBM Research, who is now a Principal Architect with Microsoft Corporation at Redmond in the USA. Joe will apply his considerable experience to speaking about the challenges of engineering self-organizing systems.

The second keynote speaker is Ken Calvert, who is Professor of Computer Science at the University of Kentucky and a senior figure in computer networking research. Ken will speak about a current collaborative project that is investigating the infrastructure and self-organizational aspects of a possible postmodern Internet architecture.

As Technical Program Committee chairs, we wish to thank a number of key people whose contributions have made our task an easy one: first, all the authors, whether successful or not, who chose to send us such high quality papers; second, again, the TPC who did such splendid reviewing; and finally the local organizing committee who as with all events take the brunt of the hard work behind the scenes. To all the above we dedicate these proceedings of IWSOS 2007.

July 2007

David Hutchison
Randy H. Katz

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