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Evolvable Systems: From Biology to Hardware

7th International Conference, ICES 2007
Wuhan, China, September 21-23, 2007
Proceedings

Springer

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Preface

We are proud to introduce the proceedings of the 7th International Conference on Evolvable Systems: From Biology to Hardware (ICES 2007) held in Wuhan, China, September 21–23, 2007. ICES 2007 successfully attracted 123 submissions. After rigorous reviews, 41 high-quality papers were included in the proceedings of ICES 2007, representing an acceptance rate of 33%.

ICES conferences are the first series of international conferences on evolvable systems. The idea of evolvable systems, whose origins can be traced back to the cybernetics movement of the 1940s and the 1950s, has recently led to bio-inspired systems with self-reproduction or self-repair of the original hardware structures, and evolvable hardware with the autonomous reconfiguration of hardware structures by evolutionary algorithms.

Following the workshop Towards Evolvable Hardware taking place in Lausanne, Switzerland, in October 1995, the 1st International Conference on Evolvable Systems: From Biology to Hardware (ICES 1996) was held in Tsukuba, Japan (1996). Subsequent ICES conferences were held in Lausanne, Switzerland (1998), Edinburgh, UK (2000), Tokyo, Japan (2001), Trondheim, Norway (2003), and Barcelona, Spain (2005) where it was decided that China University of Geosciences, Wuhan, would be the location of ICES 2007 with Lishan Kang as the General Chair.

ICES 2007 addressed the theme "From Laboratory to Real World" by explaining how to shorten the gap between evolvable hardware research and design for real-world applications in semiconductor engineering and mechanical engineering. ICES 2007 featured the most up-to-date research and applications in digital hardware evolution, analog hardware evolution, bio-inspired systems, mechanical hardware evolution, evolutionary algorithms in hardware design, and hardware implementations of evolutionary algorithms. ICES 2007 also provided a venue to foster technical exchanges, renew everlasting friendships, establish new connections, and presented the Chinese cultural traditions to overcome cultural barriers.

On behalf of the Organizing Committee, we would like to thank warmly the sponsors, China University of Geosciences and Chinese Society of Astronautics, who helped in one way or another to achieve our goals for the conference. We wish to express our appreciation to Springer, for publishing the proceedings of ICES 2007 in the *Lecture Notes in Computer Science*. We would also like to thank also the authors for submitting their work, as well as the Program Committee members and reviewers for their enthusiasm, time and expertise.

The invaluable help of active members of the Organizing Committee, including Xuesong Yan, Qiuming Zhang, Yan Guo, Siqing Xue, Ziyi Chen, Xiang Li, Guang Chen, Rui Wang, Hui Wang, and Hui Shi, in setting up and maintaining the online submission systems, assigning the papers to the reviewers, and

preparing the camera-ready version of the proceedings was highly appreciated and we would like to thank them personally for their efforts to make ICES 2007 a success.

September 2007

Lishan Kang
Yong Liu
Sanyou Zeng

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ICES 2007 was organized by the School of Computer Science and Research Center for Space Science and Technology, China University of Geosciences, sponsored by China University of Geosciences and Chinese Society of Astronautics.

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