Machines, Computations and Universality, Part I

Preface

MCU'2007 is the fifth edition of the international conference *Machines, Computations and Universality*. The conference was born in Paris, in 1995. Then it grew up in Metz, in 1998 and then went out of France to Chisinău, Moldova, in 2001 and to Saint Petersburg, Russia, in 2004. Starting from **MCU'2001**, the conference has its proceedings in *Lecture Notes in Computer Science*, see volumes **2055**, **3354** and **4664** respectively. Each edition of the conference was followed by a special issue. Three of them were in *Theoretical Computer Science*, volumes **162-2**, **231-2** and **296-2** respectively and one of them in *Fundamenta informaticae*, volume **74-4**. For its fifth edition, which we organized in Orléans, **MCU** came back to France in order to prepare the big jump over the Atlantic Ocean in 2010. The sixth edition of **MCU** will be held there, at Pittsburg, USA, to be organized with Klaus Sutner. A special issue of *Fundamenta informaticae* was also planned after **MCU'2007**. Now, the conference and the call for papers had a big success. Due to the high number of high quality papers submitted to this special issue both by authors who contributed to **MCU'2007** and by the new authors who answered the call for paper, the issue had been to be split into Part I and Part II.

The present issue contains the papers of Part I, those which were submitted by authors who contributed to **MCU'2007**. All special issues edited after **MCU** contain striking results. This edition does not fail the tradition: quite the contrary, it reinforces it, as we have several outsantding results in this issue. Two of them concern the world of Turing machines and one of them concerns cellular automata.

Moreover, the tradition of **MCU** to present non-classical models of computations is also well represented here. This concerns bio-inspired computations as well as super-Turing computations. Part II, which appears on a a next issue, also contains papers both from traditional fields and from non-classical ones.

All this is possible thanks to the help of Andrzej Skowron, the Editor-in-Chief of *Fundamenta Informaticæ* to whom we are deeply in debt. We take this occasion to thank the referees of the special issue. They achieved a very difficult selection in a very efficient way, which is a decisive contribution to the success of this issue.

We would also like to thanks again our sponsors whose help was determinant in the success of **MCU'2007**: Conseil Régional Région Centre, Conseil Général du Loiret, Mairie d'Orléans, LIFO, Université d'Orléans, LITA, Université Paul Verlaine − Metz, GDR 673 du CNRS Informatique Mathématique.

We hope that the reader will be convinced that this issue goes on the tradition of the previous **MCU** conferences. We hope that he/she will enjoy the papers of this issue.

Île du Saulcy, Metz and Orléans, January, 4, 2009,

Guest Editors **Maurice Margenstern** and **Jérôme Durand-Lose**

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