

Editorial

This is the first issue of *Computability – the Journal of the Association Computability in Europe*, which is published by IOS Press in Amsterdam. The international conference series Computability in Europe (CiE), organized since 2005, has led to the formation of the Association Computability in Europe in 2008; both conference series and association became a platform for researchers who work on topics related to computability. The great success of this conference series and its related publications has created the demand for a journal that is entirely devoted to the subject of computability. Here the subject is understood from a multidisciplinary perspective by linking theoretical and real-world concerns from computer science, mathematics, biology, physics, computational neuroscience, history and the philosophy of computing.

From this perspective the journal *Computability* recaptures the spirit and work of Alan Turing (1912–1954) who is seen as one of the most influential founders of the subject area. Hence, we are particularly enthusiastic about the fact that the first issue of the journal *Computability* can appear in 2012, the year of the centenary of Alan Turing's birth. The front cover of our journal shows a portrait of Alan Turing in honor of the enormous impact that his work has on computability theory and its applications.

Our aim is to establish the journal *Computability* as a leading journal within our very special field, which does not just consider computability as one of many topics in the wider context of theoretical computer science and mathematical logic, but treats computability as conceptually fundamental to a wide spectrum of topics and disciplines. The journal is devoted to publishing original research of the highest quality. We are very fortunate in that we have managed to ensure the contribution of an editorial board of the highest caliber that will stand for the quality of the journal and that reflects all the multidisciplinary facets of the subjects:

- Samson Abramsky (*Oxford, UK*)
- Manindra Agrawal (*Kanpur, India*)
- Eric Allender (*Piscataway, USA*)
- Jeremy Avigad (*Pittsburgh, USA*)
- Arnold Beckmann (*Swansea, UK*)
- Olivier Bournez (*Palaiseau, France*)
- Alessandra Carbone (*Paris, France*)
- Karine Chemla (*Paris, France*)
- Bruno Codenotti (*Pisa, Italy*)
- Stephen A. Cook (*Toronto, Canada*)
- Anuj Dawar (*Cambridge, UK*)
- Rodney G. Downey (*Wellington, New Zealand*)
- Natasha Jonoska (*Tampa, USA*)
- Ulrich Kohlenbach (*Darmstadt, Germany*)
- Russell Miller (*New York, USA*)
- Andrei Morozov (*Novosibirsk, Russia*)
- Prakash Panangaden (*Montreal, Canada*)
- Frank Stephan (*Singapore*)
- Vlatko Vedral (*Oxford, UK*)
- Rineke Verbrugge (*Groningen, The Netherlands*)
- Ning Zhong (*Cincinnati, USA*)

It is our plan that this editorial board will slightly grow and develop during the coming years in order to reflect the trends and developments of the subject area.

In 2012 we plan to edit two issues of the journal *Computability*, each with about 100 pages. We have deliberately decided not to publish too many issues too soon in order to establish the journal on the intended high quality level. For the moment our policy is not to publish any special issues coordinated by guest editors.

We are delighted that we have managed to attract excellent articles for the first issue of the journal *Computability* that cover a number of subject areas that range from computable analysis, effective descriptive set theory, ordinal computations, Kolmogorov complexity, computational complexity, quantum randomness to algorithmic randomness (papers listed in order of submission):

1. Mathieu Hoyrup, Cristóbal Rojas and Klaus Weihrauch
Computability of the Radon-Nikodym Derivative
2. Samuel Coskey, Joel David Hamkins and Russell Miller
The Hierarchy of Equivalence Relations on the Natural Numbers under Computable Reducibility
3. John M. Hitchcock
Limitations of Efficient Reducibility to the Kolmogorov Random Strings
4. Philipp Schlicht and Benjamin Seyffferth
Tree Representations via Ordinal Machines
5. Alastair A. Abbott and Cristian S. Calude
Von Neumann Normalisation of a Quantum Random Number Generator
6. Denis R. Hirschfeldt and Rebecca Weber
Finite Self-Information

Obviously, six articles can only give an idea of the breadth of the subject area that the journal stands for and further subjects are covered by articles that are still in the review or revision process. The number of submissions that we have received so far indicates that there is clearly a demand for a journal centered around the subject area of computability and it is already foreseeable that the next issue will meet the standards defined by this first one.

Besides the printed issues of the journal the publisher also offers an online version that will in particular be accessible for all members of the Association CiE. We are happy that the articles of the first volume will also be freely accessible for all readers.

This first issue of the journal *Computability* would not have been possible without the contributions of many colleagues. Besides the authors, the members of our editorial board and the anonymous referees we would like to thank especially Maarten Fröhlich from IOS Press in Amsterdam, who coordinates our journal on the publisher's side. He has enthusiastically and tirelessly supported our project from the very beginning and we are looking forward to a successful cooperation with him and IOS Press in the future! Obviously, most of all we hope that you will enjoy reading the articles of this first issue and we are looking forward to all submissions of high quality!

Vasco Brattka (*Cape Town, South Africa*)

Paola Bonizzoni (*Milan, Italy*)

S. Barry Cooper (*Leeds, UK*)

Benedikt Löwe (*Amsterdam, The Netherlands*)

Elvira Mayordomo (*Zaragoza, Spain*)

The Editor-in-Chief and the Managing Editors

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