Invited Speakers

Dan Ghica, University of Birmingham
Akitoshi Kawamura, University of Tokyo
Damiano Mazza, CNRS-University of Paris 13, LIPN
Georg Moser, University of Innsbruck

Scope and Topic

The area of Implicit Computational Complexity (icc) has grown from several proposals for using logic and formal methods to provide languages for complexity-bounded computation (e.g. PTIME, LOGSPACE computation). Its aim is to study computational complexity without reference to external measuring conditions or particular machine models, but only in terms of language restrictions or logical/computational principles implying complexity properties.

This workshop focuses on icc methods related to programs (rather than descriptive methods). In this approach one relates complexity classes to restrictions on programming paradigms (functional programs, lambda calculi, rewriting systems), such as ramified recurrence, weak polymorphic types, linear logic and linear types, and interpretative measures. The two main objectives of this area are:

- to find natural implicit characterizations of various complexity classes of functions, thereby illuminating their nature and importance;
- to design methods suitable for static verification of program complexity.

These goals connect both to the study of complexity classes and to static program analysis. The workshop is open to contributions on various aspects of icc including (but not exclusively):

- types for controlling complexity
- logical systems for implicit computational complexity
- linear logic
- semantics of complexity-bounded computation
- rewriting and termination orderings
- interpretation-based methods for implicit complexity
- programming languages for complexity-bounded computation
- theoretical foundations of program complexity analysis
- application of implicit complexity to security

Submission

Authors are invited to submit an extended abstract of up to 5 pages. Submission instructions can be found at:

http://dice14.tcs.ifi.lmu.de

Accepted abstracts will be presented at the workshop.

Submissions will be judged on originality, relevance, interest and clarity. Preference will be given to abstracts describing work (including work in progress) that has not been published elsewhere before the workshop. Any previous publication or submission of submitted work should be clearly indicated in the submission. The workshop will not have formal proceedings and is not intended to preclude later publication at another venue.