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Preface

Quantitative Aspects of Programming Languages and Systems (2011–12)

Quantitative aspects play a central role in the description of computer systems; they allow for a more complete characterisation of the behaviour and properties of systems and make system analysis suitable for a more speculative use based on the consideration of specific (e.g. statistically defined) quantities. For these reasons, quantitative aspects are now increasingly pervading Computer Science, investing areas where the qualitative viewpoint has prevailed for a long time.

The idea of a dedicated forum for researchers working with quantitative aspects in different fields of Computer Science was brought into concrete existence in 2001 with the *First Workshop on Quantitative Aspects of Programming Languages* (QAPL 2001). This workshop was organised by Alessandra Di Pierro and Herbert Wiklicky as a satellite event of *Principle, Logic, and Implementation of high-level programming languages* (PLI 2001) in Florence. The idea was well received and in 2004 a second edition (QAPL 2004) was organised in Barcelona as a satellite workshop of the *European joint conferences on Theory And Practice of Software* (ETAPS). The QAPL workshops have since then been held yearly as satellites of the ETAPS conferences, where researchers working on various topics related to quantitative aspects in Computer Science present and discuss their results. The *Ninth Workshop on Quantitative Aspects of Programming Languages* (QAPL 2011) was held in Saarbrücken, Germany, on April 1–3, 2011 and the *Tenth Workshop on Quantitative Aspects of Programming Languages* (QAPL 2012) was held in Tallinn, Estonia, on March 31 and April 1, 2012.

This special issue of *Theoretical Computer Science* collects 10 papers selected from among 21 submissions received as a result of a general call for papers on *Quantitative Aspects of Programming Languages and Systems* after the QAPL 2011 and QAPL 2012 editions of the workshop. Out of the selected papers, half are based on work presented at either QAPL 2011 or QAPL 2012. All papers have been peer-reviewed in accordance with the high standards of Theoretical Computer Science.

We wish to thank all the people who contributed to bringing this special issue to completion. In particular, the authors who undertook the effort to incorporate the various comments and improvements required by the reviewing process, the reviewers who provided a vital role in ensuring the papers' high quality and Don Sannella for enthusiastically accepting our proposal and helping at the various stages of the editing process.

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