# FROM THE EDITOR

Here is a special issue of TASK Quarterly devoted to the relationship between Mathematical Logic and Computer Science, a very wide and lively field, rich in interesting branches and sub-branches.

Historically, Mathematical Logic contributed to the very birth of modern Computer Science in the thirties. In those days such eminent logicians as Gödel, Church, Kleene, Turing and others discussed what computing and a computer was and what could or could not be computed. The debate led to a model of computation being proposed (the *Turing machine*) that remains valid to this day.

Also, the very way information is transferred to computers, the way they are taught how to think and work, and the language used to communicate with them, need Logic and are Logic.

The present issue offers only a glimpse of interactions between Logic and Computer Science, and yet we thought it would useful as a brief review of the varied and fascinating issues of this area. Leonesi and Toffalori discuss the theme of computability, highlighting the role of Logic in this framework. Lenzi's paper is an introduction to modal $\mu$-calculus, so to a logic widely used in computer science, in verifying concurrent systems. Marini and Montagna deal with uncertainty logic, *i.e.* with the problem of increasing certitude when information is not secure; in particular they discuss some generalizations of the Rényi-Ulam game with lies. Andretta and Camerlo illustrate an intriguing connection between descriptive set theory and computational complexity. Cintioli's paper is more technical and concerns again computability and complexity. A further single contribution, treating the Logic of quantum computation and information, is scheduled for a forthcoming issue of TASK Quarterly.

We hope to reach readers who are not familiar with Mathematical Logic and Theoretical Computer Science and have thus tried to keep our exposition as self-contained and readable as possible.

I would like to thank the TASK Quarterly editors for suggesting this special issue, for their hospitality and excellent supporting for our work. It has been a great honor and pleasure to cooperate with them. I would also like to thank the anonymous referees for their valuable suggestions.

*Carlo Toffalori*