Preface

Language theory, as originated from Chomsky's seminal work in the fifties last century and in parallel to Turing-inspired automata theory, was first applied to natural language syntax within the context of the first unsuccessful attempts to achieve reliable machine translation prototypes. After this, the theory proved to be very valuable in the study of programming languages and the theory of computing.

In the last 15–20 years, language and automata theory has experienced quick theoretical developments as a consequence of the emergence of new interdisciplinary domains and also as the result of demands for application to a number of disciplines.

Language methods (i.e. formal language methods) have been applied to a variety of fields, which can be roughly classified as:

- Computability and complexity,
- Natural language processing,
- Artificial intelligence, cognitive science, and programming,
- Bio-inspired computing and natural computing,
- Bioinformatics.

The connections of this broad interdisciplinary domain with other areas include: computational linguistics, knowledge engineering, theoretical computer science, software science, molecular biology, etc.

This volume gives just a few examples of the sort of research involved in this framework, with the intention to reflect the spirit of the whole book series.

Carlos Martín-Vide