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To my parents.

Alberto Simões

To my wife, Márcia, and our daughter, Gabriela,
for their unconditional support and love.

Ricardo Queirós

To rocas, zinha and necas.

Daniela da Cruz
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Preface

This story has to be told. It was ready and mature in our minds for many years of discussions, research and fruitful developments. It is not the story of our group, or of our laboratory. It is about people and about the most primitive need everyone has to live in society: the communication. This process and the ideas around should be converted into an event like this 1st international Symposium on Languages, Applications and Technologies, SLATe’2012, dedicated to everyone interested in the study of languages to dialog with, or through, computers.

As Human Beings invented many different alphabets and various rules to transmit messages among them, in the computers world a similar phenomena emerged. Creativity justifies one part of this variety, but the desire of novelty is not the reason for all. Environment also conditions the choice of vocabulary, transmission media and conventions to follow in the composition of symbols. Another strong influential reason is the community’s literacy, education, and cultural heritage.

All these different forms of communication use languages, different languages, but that still share many similarities. In SLATe we are interested in discussing all these languages.

In a computer system, even nowadays, most relevant digital data still circulates in textual format: computer programs, specifications, documents and other information resources have their content in this format. In order to be read and interpreted by a machine, texts should be valid sentences of a known language to be possible to associate them some meaning. The path towards this meaning takes us to the formal definition of syntax and then to the formalization of semantics. So the broad area of Language Processing, that is precisely the SLATe framework, is concerned with approaches, methods and tools for the specification of languages and the systematic development of their processors.

Language syntax and semantics is formally defined by a Grammar; Language Processors are systematic and automatically built using tools, called Generators, that read a grammar and produce the analyzers/translators.

Although we keep the same approach, different kind of texts require specialized methods and tools. So, the area is split into three main research directions that will be covered by SLATe’2012:

1. completely structured texts, that belong to a formal language — we named it as Processing Human-Computer Languages (denoted by HCL Track);
2. semi-structured texts, that are compliant to an annotation language — we said Processing Computer-Computer Languages (denoted by CCL Track)
3. unstructured texts, that belong to a natural languages — we referred to as Processing Human-Human Languages (denoted by HHL Track).

Born from a group of Portuguese researchers that organized over a decade two different conferences — XATA, with interest in XML as the de facto language for computer interaction; and CoRTA, with interest in Compilers and related techniques to understand computer
languages — and share the fascination by the way languages work, being them natural or artificial, SLATe’2012 arrives as the generalization of the three directions into the abstraction of languages.

The strong motivation and the total enthusiasm of that group, the generous acceptance by Alberto Simões to co-chair the Symposium with Daniela da Cruz and Ricardo Queirós, the quick choice of a small but very effective local organizing team and the privilege of finding immediately, for the three tracks, a large international Program Committee gathering renown names in the area, made possible to bring SLATe to light here in Braga, hosted by Departamento de Informática da Universidade do Minho, which is proud to provide a birth for this first edition of a series of Symposiums on Languages, Applications and Technologies that will attract more and more people and become a great event in a while.

And it is my truly, my full, pleasure to write today this Preface for the SLATe’2012 Proceedings!

Before finishing and after expressing my sincere gratitude to all that make this dream a reality, from the Chairs and Committee Members to our Sponsors, I want to write a warm thank you to Alexander Paar and Josep Silva Galiana that accepted the invitation to enrich the meeting with two talks on From Program Execution to Automatic Reasoning: Integrating Ontologies into Programming Languages and The New Generation of Algorithmic Debuggers, respectively.

Braga, May 31st, 2012

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