

1st Symposium on Languages, Applications and Technologies

SLATE'12, June 21–22, 2012, Braga, Portugal

Edited by

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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

■ Contents

Preface	
<i>Pedro Rangel Henriques</i>	ix

Keynotes

The New Generation of Algorithmic Debuggers	
<i>Josep Silva Galiana</i>	3
From Program Execution to Automatic Reasoning: Integrating Ontologies into Programming Languages	
<i>Alexander Paar</i>	5

Full Communications

On Extending a Linear Tabling Framework to Support Batched Scheduling	
<i>Miguel Areias and Ricardo Rocha</i>	9
Mode-Directed Tabling and Applications in the YapTab System	
<i>João Santos and Ricardo Rocha</i>	25
Generating flex Lexical Scanners for Perl Parse::Yapp	
<i>Alberto Simões, Nuno Carvalho, and José João Almeida</i>	41
A Purely Functional Combinator Language for Software Quality Assessment	
<i>Pedro Martins, João P. Fernandes, and João Saraiva</i>	51
PH-Helper – a Syntax-Directed Editor for Hoshimi Programming Language, HL	
<i>Mariano Luzzi, Mario Marcelo Beron, and Pedro Rangel Henriques</i>	71
Problem Domain Oriented Approach for Program Comprehension	
<i>Maria João Varanda Pereira, Mario Berón, Daniela da Cruz, Nuno Oliveira, and Pedro Rangel Henriques</i>	91
The Impact of Programming Languages in Code Cloning	
<i>Jaime Filipe Jorge and António Menezes Leitão</i>	107
HandSpy – a system to manage experiments on cognitive processes in writing	
<i>Carlos Monteiro and José Paulo Leal</i>	123
Computing Semantic Relatedness using DBpedia	
<i>José Paulo Leal, Vânia Rodrigues, and Ricardo Queirós</i>	133
Query Matching Evaluation in an Infobot for University Admissions Processing	
<i>Peter Hancox and Nikolaos Polatidis</i>	149
Predicting Market Direction from Direct Speech by Business Leaders	
<i>Brett Drury and José João Almeida</i>	163

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Short Communications

Learning Spaces for Knowledge Generation <i>Nuno Oliveira, Maria João Varanda Pereira, Alda Lopes Gancarski, and Pedro Rangel Henriques</i>	175
Automatic Test Generation for Space <i>Ulisses Araújo Costa, Daniela da Cruz, and Pedro Rangel Henriques</i>	185
Interoperability in eLearning Contexts. Interaction between LMS and PLE <i>Miguel A. Conde, Francisco J. García-Peñalvo, Jordi Piguillem, María J. Casany, and Marc Alier</i>	205
Enhancing Coherency of Specification Documents from Automotive Industry <i>Jean-Noël Martin and Damien Martin-Guillerez</i>	225
Probabilistic <i>SynSet</i> Based Concept Location <i>Nuno Ramos Carvalho, José João Almeida, Maria João Varanda Pereira, and Pedro Rangel Henriques</i>	239
A Multimedia Parallel Corpus of English-Galician Film Subtitling <i>Patricia Sotelo Dios and Xavier Gómez Guinovart</i>	255
Investigating the Possibilities of Using SMT for Text Annotation <i>László J. Laki</i>	267

■ 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

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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

Pedro Rangel Henriques

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