SPECIAL ISSUE: HUMAN LANGUAGE TECHNOLOGIES

PREFACE

This Special Issue of the South African Journal of African Languages is dedicated to Human Language Technologies (HLT), and is the first of its kind in the history of the journal. It provides an overview of some of the current activities in the field in South Africa. This publication results from an initiative of the ALASA Special Interest Group (SIG) for Language and Speech Technology Development (http://www.alasa.org.za/sig). The SIG was responsible for organizing a "Special Track for HLT" that ran in parallel with the first two days of the 13th International Conference of the African Language Association of Southern Africa. This conference was held at the University of Johannesburg in July 2005.

The theme of the Special Track was *Embarking on HLT development in the South African context*, and included the following sub-themes: (a) resource development, (b) speech processing, (c) text processing and (d) HLT applications. In accordance with the aims of the SIG, the purpose of the Special Track was to

- engage the growing HLT community in South Africa and encourage interactions;

- encourage dissemination of results;

- foster interaction between academic and industrial research;

- provide a forum for discussion of new research, as well as students' research;

- increase visibility of HLT research in South Africa.

Nineteen papers were accepted for presentation during the Special Track, after which all authors had an opportunity to submit their full papers for publication in one of the two Special Issues of this journal. All papers submitted were peer reviewed by two members of a Scientific Committee consisting of national and international scholars. Finally, twelve articles, covering all the sub-themes mentioned above, were accepted for publication.

While the six articles contained in volume 25(1) focus exclusively on text processing, this volume, 25(2), deals with speech processing, language resources and localization.

Philippa Louw provides a set of empirically tested grapheme-to-phoneme rules for Xhosa, claiming an improvement in accuracy and implementation to the first set of rules that was developed in 1989. Louw, Davel and Barnard then describe the development of a general Zulu speech synthesizer referring to a number of challenges related to "...the interface between speech technology and linguistics." They present some solutions to the challenges encountered and, following some evaluation procedures, indicate "encouraging results". Malaza, Martins, Roux and Niesler describe challenges involved in porting a spoken dialogue system from English to, respectively, Xhosa and Zulu. They focus on language specific and cultural issues that need to be addressed in such a process, in order to devise an effective and user-friendly system. Anderson and Kotzé address an extremely interesting application in the field of HLT, i.e. the automatic matching of like-sounding phonetic strings used in information retrieval systems. They evaluate existing phonetic string matching algorithms present in commercial products and suggest customized as well as new algorithms as appropriate alternatives when dealing with the Sotho languages. Gauton introduces a localization project and focuses on the "...nature of, and the problems and challenges inherent in, the localization of computer software" into a language such as Zulu. This is indeed a groundbreaking activity which stresses the importance of standardized terminology. The final article in this volume, presented by Jones, Bosch, Pretorius

ii

and Prinsloo addresses the critical issue of reusable resources for the development of HLT applications. After providing concrete examples of data types they convincingly argue for the establishment of a national resource centre to address the growing needs of researchers in African languages.

We would like to express our gratitude to all authors for their valued contributions; the members of the Scientific Committee for their dedication and co-operation; the Editorial Associates, Inge Kosch and Andrew van der Spuy for taking care of the language editing; as well as the Coordinating Editor, Albert Kotzé for his patience, advice, proof reading and handling of the final details.

Justus C Roux and Sonja E Bosch
Guest Editors, SAJAL Special Issue