Language, Information and Computation

Proceedings of
The 15th Pacific Asia Conference
1 – 3 February 2001, Hong Kong

Edited by
Benjamin K. T’sou, Olivia O.Y. Kwong and Tom B.Y. Lai

Language Information Sciences Research Centre
City University of Hong Kong
Hong Kong
©2001 City University of Hong Kong

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the publisher.

ISBN 962-442-184-6

Published by City University of Hong Kong

For the Language Information Sciences Research Centre
City University of Hong Kong
Tat Chee Avenue
Kowloon
Hong Kong
Foreword

By having Hong Kong as its venue after Japan in 2000, the Pacific Asia Conference on Language, Information and Computation (PACLIC 15) has shown itself to be well on its second cycle of rotation among organizers, following the 1994 amalgamation of the Asian Conference on Language, Information and Computation (ACLIC) and the Pacific Asia Conference on Formal and Computational Linguistics (PACFoCoL). Moreover, even though PACLIC 15 is held less than six months after the 38th Annual Meeting of the Association for Computational Linguistics (ACL-2000), held in Hong Kong for the first time, it has nonetheless managed to draw a healthy slate of worthy submissions, thereby demonstrating that Hong Kong has matured as a major base for the field.

The call for extended abstracts for PACLIC 15 drew some 60 enthusiastic responses from Australia, Canada, Denmark, Hong Kong, Japan, Korea, Mainland China, Taiwan, Thailand, and U.S.A. Some authors in fact were able to submit full papers. We took on a double blind review process, and sent out each submission to be reviewed by three assessors. For some papers we were able to invite additional reviewers from outside the program and organizing committees of PACLIC15. The comments from the assessors were returned to the relevant authors along with the committee's recommendations. This process yielded 24 full papers.

Since both PACLIC 15 and PACLIC 10 came under the same organizers, the occasion invites comparison, especially in terms of the thrusts of papers in both volumes. It is clear that the convergence of numerical methods and discrete approaches as well as parallel developments in the field have yielded fruitful results. This is perhaps best exemplified by the keynote presentation of Professor Charles Fillmore on FrameNet-2, included in this volume. The organizers are particularly gratified that, fresh from getting his honorary doctorate from the University of Chicago, he is all prepared to travel across the Pacific, in spite of discomfort in walking, to personally make the presentation and to support PACLIC.
Acknowledgments

PACLIC 15 has benefited from the contributions of numerous individuals, without whose help the conference would not have been possible. I wish to record my gratitude towards Jae-Woong Choe, Chu-Ren Huang, Akira Ikeya and Kim Teng Lua, co-chairpersons of PACLIC 15, as well as Masahito Kawamori and Jong-Bok Kim, for their advice and support. We are just as grateful to members of the program committee and the invited reviewers. I wish to also thank Prof. C.C. Cheng and the Department of Chinese, Translation and Linguistics, City University of Hong Kong, for becoming a generous sponsor of the conference, and to the Linguistic Society of Hong Kong, the Logic-Linguistic Society of Japan, as well as the Chinese Language Computer Society for co-sponsorship. Additional support for the conference has come by way of CityU Enterprises. Vice-president P.S. Chung and the staff at the Research Office have always given direct and implicit support for our research activities, as has been staff at the Language Information Sciences Research Centre and its subsidiary Corpus Linguistics Laboratory. Our special thanks for support go to Helena Tsang, Eunice Ma, Grace Ko, Francis Chik, Lawrence Cheung, W.F. Tsoi, and Morris Sung. I am no less grateful to Tom Lai who, despite his attachment to Microsoft's China Research Laboratory in Beijing for one semester, has been generous with his time when needed. I should also register my heartfelt gratitude to Olivia Kwong who has provided yeoman service in attending to details of the conference and deserves much of the credit for the excellent turnout at the conference as exemplified by this volume.

Benjamin K. T'sou
Chair, Organizing Committee
Organizing Committee

Chair: Benjamin T'sou, City University of Hong Kong, Hong Kong
Co-Chairs: Jae-Woong Choe, Korea University, Seoul
           Chu-Ren Huang, Academia Sinica, Taipei
           Akira Ikeya, Toyo Gakuen University, Tokyo
           Kim Teng Lua, National University of Singapore, Singapore
Secretary: Olivia Kwong, City University of Hong Kong, Hong Kong
Members:  Suk-Jin Chang, Seoul National University, Seoul
          Yong-Beom Kim, Kwangwoon University, Seoul
          Tom Lai, City University of Hong Kong, Hong Kong
          Byung-Soo Park, Kyung Hee University, Seoul
          Kam-Fai Wong, Chinese University of Hong Kong, Hong Kong

Program Committee

Chair: Benjamin T'sou, City University of Hong Kong, Hong Kong
Secretary: Olivia Kwong, City University of Hong Kong, Hong Kong
Members:  Samuel Chan, Chinese University of Hong Kong, Hong Kong
          Jason Chang, Tsing Hua University, Hsinchu
          Jing-Shin Chang, Chi Nan University, Nantou
          Chin-Chuan Cheng, City University of Hong Kong, Hong Kong
          Yasunari Harada, Waseda University, Tokyo
          One-soon Her, Chengchi University, Taipei
          Kiyoshi Ishikawa, Hosei University, Tokyo
          Makoto Kanazawa, Tokyo University, Tokyo
          Masahito Kawamori, NTT Research Laboratories, Tokyo
          Sue-jin Ker, Soochow University, Taipei
          Jong-Bok Kim, Kyung Hee University, Seoul
          Tom Lai, City University of Hong Kong, Hong Kong
          Chungmin Lee, Seoul National University, Seoul
          Ik-Hwan Lee, Yonsei University, Seoul
          Kiyong Lee, Korea University, Seoul
          Minhaeng Lee, Yonsei University, Seoul
          Robert Luk, Hong Kong Polytechnic University, Hong Kong
          Yuji Matsumoto, Nara Institute of Science and Technology, Nara
          Peter Sells, Stanford University, Stanford
          Hsue-hueh Shih, Sun Yat-sen University, Kaohsiung
          Maosong Sun, Tsinghua University, Beijing
          Shu-Chuan Tseng, Academia Sinica, Taipei
          Kam-Fai Wong, Chinese University of Hong Kong, Hong Kong
          Chung-hsien Wu, Cheng Kung University, Tainan
          Jie Xu, National University of Singapore, Singapore

Additional Reviewers

Charles J. Fillmore, University of California, Berkeley
Thomas Lee, City University of Hong Kong, Hong Kong
Wenjie Li, Chinese University of Hong Kong, Hong Kong
# Table of Contents

Foreword .......................................................................................................................... i
Acknowledgments ............................................................................................................. ii
Organizing Committee, Program Committee, Additional Reviewers .............................. iii
Conference Program ...................................................................................................... iv

Introduction ....................................................................................................................... 1

**Building a Large Lexical Databank Which Provides Deep Semantics**  
Charles J. Fillmore, Charles Wooters and Collin F. Baker ............................................. 3

**A Comparative Study of English and Chinese Synonym Pairs: An Approach based on The Module-Attribute Representation of Verbal Semantics**  
Kathleen Ahrens and Chu-Ren Huang ............................................................................. 27

**Inferring Semantics from Collocation Clusters to Represent Verbs and Nouns**  
Bowen Hui ....................................................................................................................... 33

**A Parallel Interpretation of Floated Quantifiers and Adverbials**  
Masahiro Kobayashi and Kei Yoshimoto ........................................................................ 45

**What else to quantify?**  
Michiyuki Sato .............................................................................................................. 53

**Asymmetry, Zero Morphology and Tractability**  
Anna Maria Di Sciullo and Sandiway Fong .................................................................... 61

**Emphatic Particles and their Scopal Interactions in Japanese**  
Akira Ishikawa ............................................................................................................... 73

**Japanese Negative Polarity Items and Negative Concord**  
Masahito Kawamori and Akira Ikeya .............................................................................. 85

**Towards a Conceptual Representation of Lexical Meaning in WordNet**  
Jen-nan Chen and Sue J. Ker ......................................................................................... 97

**Forming an Integrated Lexical Resource for Word Sense Disambiguation**  
Oi Yee Kwong ............................................................................................................... 109

**Some Principles of Automated Natural Language Information Extraction**  
Gregers Koch ............................................................................................................... 121
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Structure-Shared Trie Compression Method</td>
<td>Thanasan Tanhermhong, Thanaruk Theeramunkong and Wirat Chinnan</td>
<td>129</td>
</tr>
<tr>
<td>Processing Local Coherence of Discourse in Centering Theory</td>
<td>Jianhua Hu and Haihua Pan</td>
<td>139</td>
</tr>
<tr>
<td>Temporal Structure on Discourse Level within the Controlled Information Packaging Theory</td>
<td>Ik-Hwan Lee and Minhaeng Lee</td>
<td>151</td>
</tr>
<tr>
<td>Highlighting Utterances in Chinese Spoken Discourse</td>
<td>Shu-Chuan Tseng</td>
<td>163</td>
</tr>
<tr>
<td>A Decidable Linear Logic for Speech Translation</td>
<td>Tsutomu Fujinami</td>
<td>175</td>
</tr>
<tr>
<td>Building domain-independent text generation system</td>
<td>XinYu Deng, Sadao Kurohashi and Jun-ichi Nakamura</td>
<td>187</td>
</tr>
<tr>
<td>Vowel Shortening and Surface Ternary Feet: Ternary Rhythm Through Strictly Binary Footing</td>
<td>Seiichiro Inaba</td>
<td>195</td>
</tr>
<tr>
<td>Mappings From the Source Domain of Plant in Mandarin Chinese</td>
<td>Vicky Tzuyin Lai and Kathleen Ahrens</td>
<td>203</td>
</tr>
<tr>
<td>Floating Quantifiers and Lexical Specification of Quantifier Retrieval</td>
<td>Eun-Jung Yoo</td>
<td>211</td>
</tr>
<tr>
<td>Pragmatic Inference with Conditionals and Concessives in Japanese</td>
<td>Yasunari Harada and Kumiko Honda</td>
<td>223</td>
</tr>
<tr>
<td>On the Semantics of Japanese Particles wa and mo and Their Interaction with Quantifiers</td>
<td>Ryoya Okabe</td>
<td>235</td>
</tr>
<tr>
<td>Nominal Markers and Word Order in Korean</td>
<td>Sae-Youn Cho and Jong-Joo Choe</td>
<td>247</td>
</tr>
<tr>
<td>Thai Classifiers and the Structure of Complex Thai Nominals</td>
<td>Pornsiri Singhapreecha</td>
<td>259</td>
</tr>
<tr>
<td>Negation, VP Ellipsis, and VP Fronting in English: A Construction-HPSG Analysis</td>
<td>Jong-Bok Kim</td>
<td>271</td>
</tr>
<tr>
<td>Feature Percolation, Movement and Cross-Linguistic Variation in Pied-Piping</td>
<td>Jeong-Me Yoon</td>
<td>283</td>
</tr>
</tbody>
</table>
Gerundive Complements in English: A Constraint-Based Analysis
Byung-Soo Park .................................................................293

An HPSG Account of the Hierarchical Clause Formation in Japanese: HPSG-Based
Japanese Grammar for Practical Parsing
Takashi Miyata, Akira Ohtani and Yuji Matsumoto ........................................305

The Japanese Internally-Headed Relative Clause as a Marked Head-Complement Structure
Chiharu Uda Kikuta .............................................................317

Distributional Properties and Endocentricity of English Gerunds
Yong-Beom Kim .................................................................325

Robust N-gram Based Syntactic Analysis Using Segmentic Words
Nobuo Inui and Yoshiyuki Kotani ..................................................333

Recursive Top-down Fuzzy Match: New Perspectives on Memory-based Parsing
Oliver Streiter .................................................................345

Author Index .............................................................................357