

第二十四屆自然語言與語音處理研討會

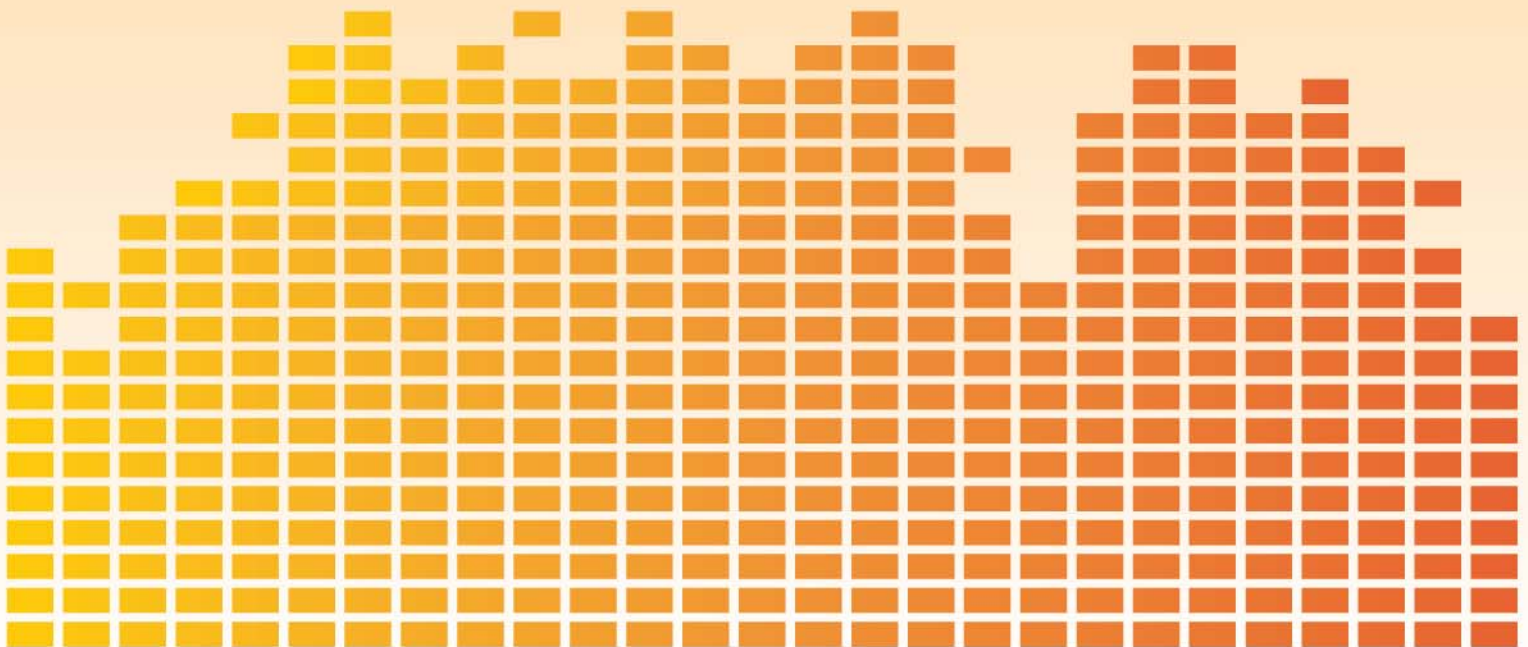
The 24th Conference on Computational Linguistics and Speech Processing

ROCLING 2012

September 21-22, 2012

Yuan Ze University, Chung-Li, Taiwan

Proceedings of the 24th Conference on
Computational Linguistics and Speech Processing



**Proceedings of the Twenty-Fourth Conference on
Computational Linguistics and Speech Processing
ROCLING XXIV (2012)**

**September 21-22, 2012
Yuan Ze University, Chung-Li, Taiwan**

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Preface

Welcome to the 24th Conference on Computational Linguistics and Speech Processing at Yuan Ze University. Sponsored by the Association for Computational Linguistics and Chinese Language Processing (ACLCLP), ROCLING is the oldest and most comprehensive conference to focus on computational linguistics and speech processing. This year we received 45 valid submissions, each of which was reviewed by at least two experts on the basis of originality, significance, technical soundness, and relevance to the conference. In total, 15 papers were accepted for oral presentation and 19 for poster presentation. These papers cover a broad range on topics in natural language processing and speech technology and maintain the consistent quality of papers presented at ROCLING. The publications of these papers represent the joint effort of many researchers, and we are grateful to the efforts of the review committee for their work.

We are honored to have two distinguished invited speakers: Dr. Kenneth Church (President of ACL), speaking on “Towards Google-like Search on Spoken Documents with Zero Resources”, and Dr. Li Deng (Principal Researcher, Microsoft Research), speaking on “Deep Learning and A New Wave of Innovations in Speech Technology”. In addition, Prof. Jhing-Fa Wang will be organizing a panel discussion on “Research & Application of Speech & Language Technology for Orange Computing”.

We would also like to thank our sponsors, including the Ministry of Education, the National Science Council, the Academia Sinica (Institute of Information Science), Chunghwa Telecom Laboratories, the Institute for Information Industry, the Industrial Technology Research Institute (Information and Communications Research Laboratories), Cyberon Corporation, and Behavior Design Corporation.

Finally, we appreciate your active participation and support to ensure a smooth and successful conference.

Richard Tzong-Han Tsai
Liang-Chih Yu
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Cheng-Zen Yang
Shu-Kai Hsieh
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Program Overview

September 21, 2012 (Friday) 9:00 ~ 20:00		
09:00-09:50	Registration	
09:50:10:00	Opening Ceremony	Prof. Jin-Fu Chang Chair: Prof. Richard Tzong-Han Tsai Prof. Liang-Chih Yu
10:00-11:00	Invited Talk: How Many Multiword Expressions do People Know?	Speaker: Dr. Kenneth Church, President of ACL Chair: Dr. Wen-Lian Hsu
11:00-11:30	Coffee Break	
11:30-12:30	Oral Session 1: Speech Processing I	Chair: Dr. Yu Tsao
12:30-13:15	Lunch	
13:15-14:00	ACLCLP meeting for future directions	
14:00-15:20	Oral Session 2: Sentiment Analysis and Semantics	Chair: Dr. Lun-Wei Ku
15:20-15:50	Coffee Break / IJCLCLP editors meeting	
16:00-17:00	Panel Discussion: Research & Application of Speech & Language Technology for Orange Computing	Panelists: Prof. Chung-Hsien Wu Dr. Chih-Chung Kuo Dr. Bo-Wei Chen Chair: Prof. Jhing-Fa Wang
17:00~18:00	YZU — Banquet place (Hotel Kuva Chateau)	
18:00-20:00	Banquet	

September 22, 2012 (Saturday) 9:30 ~ 16:20		
9:30-10:30	Invited Talk: Deep Learning and A New Wave of Innovations in Speech Technology	Speaker: Dr. Li Deng, Microsoft Research Chair: Prof. Chung-Hsien Wu
10:30-11:00	Coffee Break	
11:00-12:00	Oral Session 3: Speech Processing II	Chair: Prof. Yuan-Fu Liao
12:00-13:00	Lunch	
13:00-14:00	Poster Session	
14:00-15:00	Oral Session 4: NLP Applications	Chair: Prof. Chao-Lin Liu
15:00-15:20	Coffee Break	
15:20-16:00	Oral Session 5: Machine Translation and Information Retrieval	Chair: Prof. Shou-De Lin
16:00-16:20	Closing Ceremony and Best Paper Award	

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Invited Speaker: Kenneth Church

How Many Multiword Expressions do People Know?

Abstract

What is a multiword expression (MWE) and how many are there? What is a MWE? What is many? Mark Liberman gave a great invited talk at ACL-89 titled “How many words do people know?” where he spent the entire hour questioning the question. Many of these same questions apply to multiword expressions. What is a word? What is many? What is a person? What does it mean to know? Rather than answer these questions, this paper will use these questions as Liberman did, as an excuse for surveying how such issues are addressed in a variety of fields: computer science, web search, linguistics, lexicography, educational testing, psychology, statistics, etc.

Biography

Kenneth Church was a researcher at Microsoft Research in Redmond, before moving to Hopkins, and before that he was the head of a data mining department in AT&T Labs-Research (formally AT&T Bell Labs). Prof. Kenneth Church received BS, Masters and PhD from MIT in computer science in 1978, 1980 and 1983, respectively. He enjoys working with very large corpora such as the Associated Press newswire (1 million words per week) and larger datasets such as telephone call detail (1-10 billion records per month). He has worked on many topics in computational linguistics including: web search, language modeling, text analysis, spelling correction, word-sense disambiguation, terminology, translation, lexicography, compression, speech (recognition and synthesis), OCR, as well as applications that go well beyond computational linguistics such as revenue assurance and virtual integration (using screen scraping and web crawling to integrate systems that traditionally don't talk together as well as they could such as billing and customer care).

Invited Speaker: Li Deng

Deep Learning and A New Wave of Innovations in Speech Technology

Abstract

Semantic information embedded in the speech signal manifests itself in a dynamic process rooted in the deep linguistic hierarchy as an intrinsic part of the human cognitive system. Modeling both the dynamic process and the deep structure for advancing speech technology has been an active pursuit for over more than 20 years, but it is not until recently that noticeable breakthrough has been achieved by the new methodology commonly referred to as “deep learning”. Deep Belief Net (DBN) and the related deep neural nets are recently being used to replace the Gaussian Mixture Model component in the HMM-based speech recognition, and has produced dramatic error rate reduction in both phone recognition and large vocabulary speech recognition while keeping the HMM component intact. On the other hand, the (constrained) Dynamic Bayesian Net has been developed for many years to improve the dynamic models of speech while overcoming the IID assumption as a key weakness of the HMM, with a set of techniques and representations commonly known as hidden dynamic/trajectory models or articulatory-like models. A history of these two largely separate lines of research will be critically reviewed and analyzed in the context of modeling the deep and dynamic linguistic hierarchy for advancing speech recognition technology. Future directions will be discussed for the exciting area of deep and dynamic learning research that holds promise to build a foundation for the next-generation speech technology with human-like cognitive ability.

Biography

Li Deng received the Ph.D. from Univ. Wisconsin-Madison. He was an Assistant (1989-1992), Associate (1992-1996), and Full Professor (1996-1999) at the University of Waterloo, Ontario, Canada. He then joined Microsoft Research, Redmond, where he is currently a Principal Researcher and where he received Microsoft Research Technology Transfer, Goldstar, and Achievement Awards. Prior to MSR, he also worked or taught at Massachusetts Institute of Technology, ATR Interpreting Telecom. Research Lab. (Kyoto, Japan), and HKUST. He has published over 300 refereed papers in leading journals/conferences and 3 books covering broad areas of human language technology, machine learning, and audio, speech, and signal processing. He is a Fellow of the Acoustical Society of America, a Fellow of the IEEE, and a Fellow of the International Speech Communication Association. He is an inventor or co-inventor of over 50 granted patents. He served on the Board of Governors of the IEEE Signal Processing Society (2008-2010). More recently, he served as Editor-in-Chief for IEEE Signal Processing Magazine (2009-2011), for which he received the 2011 IEEE SPS Meritorious Service Award. He currently serves as Editor-in-Chief for IEEE Transactions on Audio, Speech and Language Processing.



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