



The 27th ROCLING 2015

Oct. 1-2, 2015, Hsinchu, Taiwan

The 27th international Conference on
Computational Linguistics and Speech Processing



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**Proceedings of the Twenty- Seventh Conference
on Computational Linguistics and Speech**

Processing ROCLING XXVII (2015)

October 1-2, 2015

National Chiao Tung University, Hsinchu, Taiwan

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Welcome Message of the ROCLING 2015

On behalf of the organization committee and program committee, it is our pleasure to welcome you to the National Chiao Tung University, Hsinchu, Taiwan, for the 27th Conference on Computational Linguistics and Speech Processing (ROCLING), the flagship conference on computational linguistics, natural language processing, and speech processing in Taiwan. ROCLING is the annual conference of the Computational Linguistics and Chinese Language Processing (ACLCLP) which is held in autumn in different cities and universities in Taiwan. This year, we have 18 oral papers and 9 poster papers, which cover the areas of speech separation and summarization, natural language processing, robust speech recognition, and text mining. We are grateful to the contribution of the reviewers for their extraordinary efforts and valuable comments.

ROCLING 2015 features two distinguished lectures from the renowned speakers in speech processing as well as natural language processing. Dr. Jerome R. Bellegarda (Apple Distinguished Scientist) will lecture on “Virtual Personal Assistance on Mobile Devices” and Prof. Ming-Syan Chen (Distinguished Professor, Department of Electrical Engineering, National Taiwan University) will speak on “Data Processing and Information Extraction for Social Networks”. This ROCLING also features one Industry Track, two Doctoral Consortiums, and two Academic Demo Tracks which provide forums and show-and-tells for graduate students, industrial and academic researchers and developers.

Finally, we thank to the generous government, academic and industry sponsors and appreciate your enthusiastic participation and support. Best wishes a successful and fruitful ROCLING 2015 in Hsinchu.

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Keynote 1 –

Virtual Personal Assistance on Mobile Devices



Dr. Jerome R. Bellegarda

Apple Distinguished Scientist

Thursday, October 1

10:00 - 11:00

Location: International Conference Hall

Biography

Dr. Jerome R. Bellegarda is Apple Distinguished Scientist in Human Language Technologies at Apple Inc., Cupertino, California, which he joined in 1994. Prior to that, he was a Research Staff Member at the IBM T.J. Watson Center, Yorktown Heights, New York. Among his diverse contributions to speech and language advances over the years, he pioneered the use of tied mixtures in acoustic modeling and latent semantics in language modeling. In addition, he was instrumental to the due diligence process leading to Apple's acquisition of Siri personal assistant technology and its integration into iOS. His general interests span statistical modeling algorithms, voice-driven man-machine communications, multiple input/output modalities, and multimedia knowledge management. In these areas he has written close to 200 publications, and holds approximately 100 U.S. and foreign patents. He has served on many international scientific committees, review panels, and advisory boards. In particular, he has worked as Expert Advisor on speech and language technologies for both the U.S. National Science Foundation and the European Commission, was Associate Editor for the IEEE Transactions on Audio, Speech and Language Processing, served on the IEEE Signal Processing Society Speech Technical Committee, and is currently an Editorial Board member for Speech Communication. He is a Fellow of both IEEE and ISCA (International Speech Communication Association).

Abstract

Natural language interaction has the potential to considerably enhance user experience, especially in mobile devices like smartphones and electronic tablets. Recent advances in software integration and efforts toward more personalization and context awareness have brought closer the long-standing vision of the ubiquitous intelligent personal assistant. Multiple voice-driven initiatives, such as Apple's Siri,

have now reached commercial deployment. In this talk, I will review the two major semantic interpretation frameworks underpinning virtual personal assistance, and reflect on the inherent complementarity in their respective advantages and drawbacks. I will then discuss some of the attendant choices made in Siri, and speculate on their likely evolution going forward.

Keynote 2 -

Data Processing and Information Extraction for Social Networks



Prof. Ming-Syan Chen

Distinguished Professor, Department of Electrical Engineering, National Taiwan University

Friday, October 2 09:00-10:00

Location: International Conference Hall

Biography

Ming-Syan Chen (陳銘憲) received the Ph.D. degrees in Computer, Information and Control Engineering from The University of Michigan, Ann Arbor, MI, USA. He is now a Distinguished Professor jointly appointed by EE Department, CSIE Department, and Graduate Institute of Communication Eng. (GICE) at National Taiwan University. He was a research staff member at IBM Thomas J. Watson Research Center, Yorktown Heights, NY, USA from 1988 to 1996, the Director of GICE from 2003 to 2006, the President/CEO of Institute for Information Industry (III), which is one of the largest organizations for information technology in Taiwan, from 2007 to 2008, and also a Distinguished Research Fellow and the Director of Research Center of Information Technology Innovation (CITI) in the Academia Sinica from 2008 to 2015. His research interests include databases, data mining, social networks, and multimedia networking, and he has published more than 350 papers in his research areas.

In addition to serving as program chairs/vice-chairs and keynote/tutorial speakers in many international conferences, Dr. Chen has served as an associate editor of IEEE TKDE, VLDB Journal, KAIS, and also JISE, and also the Editor-in-Chief of the International Journal of Electrical Engineering (IJEE). Dr. Chen was the Chief Executive Officer of Networked Communication Program, which is a national program coordinating several primary activities in information and communication technologies in Taiwan. He is a recipient of the Academic Award of the Ministry of Education, the NSC (National Science Council) Distinguished Research Award, Pan Wen Yuan Distinguished Research Award, Teco Award, Honorary Medal of Information, and K.-T. Li Research Breakthrough Award for his research work, and

also the Outstanding Innovation Award from IBM Corporate for his contribution to a major database product. He received numerous awards for his research, teaching, inventions and patent applications. Dr. Chen is a Fellow of ACM and a Fellow of IEEE.

Abstract

Recently due to the fast increasing activities of social networks, it has become very desirable to conduct various analyses for applications on social networks. However, as the scale of a social network has become prohibitively large, it is infeasible to scrutinize the data and extract the key essence from the entire social network. As a result, a significant amount of research effort has been elaborated upon extracting the essential application-dependent information from a social network. In this talk, we shall examine some recent studies on data processing and information extraction for social networks. Explicitly, we shall explore the methods for three levels of information extraction in a social network, namely, parameter extraction, information extraction, and structure extraction, and interpret them from their respective objectives.

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Processing ROCLING XXVII (2015)**

TABLE OF CONTENTS

Preface	i
表示法學習技術於節錄式語音文件摘要之研究 Kai-Wun Shih, Berlin Chen, Kuan-Yu Chen, Shih-Hung Liu, Hsin-Min Wang	1
使用詞向量表示與概念資訊於中文大詞彙連續語音辨識之語言模型調適 Ssu-Cheng Chen, Kuan-Yu Chen, Hsiao-Tsung Hung, Berlin Chen	4
結合 β 距離與圖形正規限制式之非負矩陣分解應用於單通道訊號源分離 Yan-Bo Lin, Pham Tuan, Yuan-Shan Lee, Jia-Ching Wang	18
以自然語言處理方法研發智慧型客語無聲調拼音輸入法 Hsin-Wei Lin, Ming-Shing Yu, 黃豐隆, 魏俊瑋	27
《全唐詩》的分析、探勘與應用—風格、對仗、社會網路與對聯 Chao-Lin Liu, Chun-Ning Chang, Chu-Ting Hsu, Wen-Hui Cheng, Hongsu Wang, Wei-Yun Chiu	43
Designing a Tag-Based Statistical Math Word Problem Solver with Reasoning and Explanation Huang Chien Tsung, Yi-Chung Lin, Chao-Chun Liang, Kuang-Yi Hsu, Shen -Yun Miao, Wei-Yun Ma, Lun-Wen Ku, Churn-Jung Liao, Keh-Yih Su	58
Explanation Generation for a Math Word Problem Solver Huang Chien Tsung, Yi-Chung Lin, Keh-Yih Su	64

可讀性預測於中小學國語文教科書及優良課外讀物之研究	
Yi-Nian Liu, Kuan-Yu Chen, Hou-Chiang Tseng, Berlin Chen	71
基於貝氏定理自動分析語料庫與標定文步	
Jia-Lien Hsu, Chiung-Wen Chang, Jason S. Chang	87
調變頻譜分解之改良於強健性語音辨識	
Ting-Hao Chang, Hsiao-Tsung Hung, Kuan-Yu Chen, Hsin-Min Wang, Berlin Chen	100
融合多種深層類神經網路聲學模型與分類技術於華語錯誤發音檢測之研究	
Yao-Chi Hsu, Ming-Han Yang, Hsiao-Tsung Hung, Yuwen Hsiung, Yao-Ting Sung, Berlin Chen	103
Automating Behavior Coding for Distressed Couples Interactions Based on Stacked Sparse Autoencoder Framework using Speech-acoustic Features	
Po Hsuan Chen, Chi-Chun Lee	121
語音增強基於小腦模型控制器	
Hao-Chun Chu, Yu Tsao, Junghsi Lee, Yun-Fan Chang	123
類神經網路訓練結合環境群集及專家混合系統於強健性語音辨識	
Chia-Yung Hsu, Jia-Ching Wang, Yu Tsao	136
基於已知名稱搜尋結果的網路實體辨識模型建立工具	
Ya-Yun Huang, Chia-Hui Chang, Chien-Lung Chou	148
Word Co-occurrence Augmented Topic Model in Short Text	
Guan-Bin Chen, Hung-Yu Kao	164
Matching Internet Mood Essays with Pop-Music Based on Word2Vec	
Pin-Chu Wen, Richard Tzong-Han Tsai	167
基於 Web 之商家景點擷取與資料庫建置	
高霆耀, 莊秀敏, Chia-Hui Chang	180
Posters:	
運用關聯分析探勘民眾關注議題與發展方向:以環保議題為例	

Chieh-Jen Wang, Min-Hsin Shen	196
現代漢語語義詞典多義詞詞庫的校正和再修訂	
Yunfei Long, Yuefeng Bian, Weiguang Qu, Rubing Dai	206
以語言模型判斷學習者文句流暢度	
Po-Lin Chen, Shih-Hung Wu	218
The word complexity measure (WCM) in early phonological development: A longitudinal study from birth to three years old	
Li-mei Chen, Yi-Hsiang Liu	233
Learning Knowledge from User Search	
Lee Yen-Kuan, Kun-Ta Chuang	248
部落客憂鬱傾向分析與預測	
Chia-Ming Tung, Wen-Hsiang Lu	263
結合 ANN、全域變異數與真實軌跡挑選之基週軌跡產生方法	
Hung-Yan Gu, Kai Wei Jiang, Hao Wang	277
運用 Python 結合語音辨識及合成技術於自動化音文同步之實作	
ChunHan Lai, Chao-Kai Chang, Ren-Yuan Lyu.....	289
Speech Emotion Recognition via Nonlinear Dynamical Features	
Chu-Hsuan Lin, Yen-Sheng Chen.....	306



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