1987 International Conference on Chinese and Oriental Language Computing

Table of Contents

Message from Conference Chairman ........................................ v
Message from Program Chairmen .......................................... vi
Conference Committee ........................................................ vii
Referees ................................................................................ viii
Pre-Conference Tutorial ......................................................... ix
Pre-Conference Panel Discussion ............................................ x

Invited Paper

Visualization in Scientific Computing: State of the Art (title only)
C.N. Liu

Large Scale Computer Input of Chinese Documents (abstract only) ........ 1
C.Y. Suen

Session 1: Input/Output (I)

Chair: K.Y. Cheng and K. Ushijima

On Disambigous Chinese Phonetic Input ................................ 2
K.Y. Cheng and F.K. Yu

Recent Development of Chinese Laser Printer Controller in Taiwan ...... 9
Tzao-Lin Lee

Suikou: Writing Tools for Japanese Documents ............................ 12
K. Ushijima, T. Takagi, and J. Yoon

Design of a Dynamically Reconfigurable Keyboard ...................... 20
A. Mathur and F. Fowler

CRT Display of Chinese Characters ......................................... *
K.T. Lua

Session 2: Speech Recognition and Processing (I)

Chair: Y.H. Chu and J.S. Huang

Two New Efficient Techniques to Recognize the Finals of Mandarin Syllables . 24
Yen-Ming Hsu, Biing-Chin Wang, Chiu-Yu Tseng, and Lin-Shan Lee
Mandarin Final Recognition Based on Vector Quantization and Markov Model Method .................................................. 32
   Jianxiong Wu, Chorkin Chan, and Guolian Cai

An Efficient Recognition System for the Finals of Mandarin Syllables Based on Branch-and-Bound Algorithm .................................................. 36
   Chia-Hwa Hwang, Chiu-Yu Tseng, and Lin-Shan Lee

Recognition of Lexical Tones for Isolated Syllables and Disyllables in Mandarin Speech .................................................. 41
   Wu-Ji Yang, Jyh-Chyang Lee, Hsiao-Chuan Wang, and Yueh-Chin Chang

A Fast Chinese Characters Accessing Technique Using Mandarin Phonetic Transcriptions .................................................. 49
   C.C. Chang and H.C. Wu

Session 3: Intelligent and Knowledge-based Systems

Chair: T. Morishita and W. Ouyang

Generating Responses in Chinese from a Question-Answering System .................................................. 53
   P.Y. Li and Martha Evens

Knowledge Acquisitive System on Chinese Texts in DSS .................................................. 61
   Jian-Chang Zhou and Dao-Ying Pi

A Kanji Recognition Method Detecting Incorrectness in Writing .................................................. 67
   T. Morishita, M. Ooura, and Y. Ishii

An Expert System Developing Environment with Chinese Texts and Images in Parallel .................................................. 75
   Wei-Whua Loa and Ching-Tu Chang

The Micro-Structures of Chinese Words and Their Representation in a Chinese Knowledge Base .................................................. 79
   Wendao Ouyang

The Intelligence in Chinese Characters .................................................. 85
   Patrick Wang

Session 4: Chinese Language Understanding and Processing

Chair: H.R. Zhou and C.C. Hsieh

Some Uses of Restricted Logic Grammars in Chinese Language Processing .................................................. 89
   Hsin-Hsi Chen, I-Peng Lin and Chien-Ping Wu
1987 International Conference on Chinese and Oriental Language Computing

Parsing Chinese Conjunctions Using SASC .............................................. 94
Yen-Shing Tsai, I-Peng Lin, and Lin-Shan Lee

A Word-based Chinese Language Understanding System ........................... 100
Tien-Shun Yao

Difficulties in Chinese Language Processing and Methods to Their Solution ... *
Yongquan Liu

A Simple Model of Chinese Natural Language Understanding ...................... *
H.R. Zhou and T.S. Yao

Classifications and Concurrence Relations in Simple Chinese Noun Phrase ........ 107
L.L. Chang, J.C. Huang, L.P. Chang, W.C. Wei, Y.H. Cheng,
K.J. Chen, S.S. Tseng, and C.C. Hsieh

Session 5: Input/Output (II)

Chair: W.C.P. Yu and A. MacDonald

Some New Advancement in High Speed Two-Stroke Chinese Input System .......... 111
Wellington C.P. Yu

A Generic Chinese Input System ........................................................... 118
Hsu Loke Soo

Sequence Prediction for Chinese Language Input ...................................... 126
Alan MacDonald and Yan H. Ng

Chinese Characters Encoded in Stroke-Sequences .................................... 130
Wai-Hung Wu

The 2nd Study on the Coding of Chinese Characters ................................. *
C.Y. Dong, J.K. Wang, J.C. Wan, and Huq-S

Session 6: Applications (I)

Chair: T.Y. Hwang and C.Y. Suen

An Implementation of Computer-Aided Structured Analysis System on Chinese
Personal Computer .............................................................................. 134
Miiin-Fang Liaw, Shu-Shang Wei, Wan-Chung Wu, Yeong-Mau Hsu, and
Tai-Yang Hwang

An Application of Image Segmentation to a Kind of Pattern Recognition
Problems ................................................................................. 142
Bin Li and Shu-Xiang Zhao
1987 International Conference on Chinese and Oriental Language Computing

A Language for Office Procedure Description ........................................ 146
Ying-Chun Guan and Yue Xu

A Knowledge-based Chinese Business Letter-Writer .............................. 156
Toh Tzu Koh

Computer Processing of Japanese Ideograph ........................................ 158
S.K. Bhattacharyya

Linguistic Implications of Database Systems ...................................... 162
S.G. Krishnamoorthy, C.Y. Suen, and R. Jesuraj

Session 7: Character Recognition

Chair: J.T. Heinzl and W.H. Hsu

A System for On-line Recognition of Chinese Characters ....................... 167
Keh-Jiann Chen, Kuo-Chun Li, and Yeong-Long Chang

Radical Extraction by Background Thinning Method for Handwritten Chinese Characters .................................................. 175
Fang-Hsuan Cheng and Wen-Hsing Hsu

Recognition System for the FILE composed of Chinese Words ................. *
Guo-Shi Tao

New Probabilistic Model for Chinese Character Recognition .................. 183
Tsing-Yee Tu and Yung-Lung Ma

Separating Similar Complex Chinese Characters ................................ 187
Jun S. Huang and Ma-Lung Chung

Session 8: Applications (II)

Chair: S.C. Chan and J.T. Tou

Considerations of Developing a Chinese Publishing System on Microcomputers 192
Lynn Lee, Rei-Yao Wu, and Tai-Yang Hwang

A Preliminary Framework for a Cooperative Text Composer .................. 196

New Design and Research of Office-type Chinese Word Processor .......... *
Cui Wei

A Chinese Reading System .............................................................. 200
H.W. Kuo, S.K. Su, and T.C. Kao
Towards an Implementation of a Computer Aided Chinese Input System for Casual Users

T.M. Ng, L.L. Lim, H.K. Tan, L.E. Tan, and H.Y. Wong

Session 9: Input/Output (III)

Chair: C.N. Liu and B.Q. Fong

PINXXIEE: The Chinese Computer Input Language

H.C. Tien

The Phonetic Chinese Language Computer System

Victor C. Yeh

Survey on the Establishment of Indexing System for Composed Chinese Characters

Te-Yao Kiang and Tao-Ho Cheng

The Dai-E Chinese Encoding Method

Timothy Huang

A New Input System for Chinese Language Processing

Jianhua Zhu and Xing Liu

Session 10: Speech Recognition and Processing (II)

Chair: H.C. Wang and L.S. Lee

Recognition of Isolated Syllable Finals in Mandarin Speech

Liang-Jin Lin, Hsiao-Chuan Wang, and Yuch-Chin Chang

Automatic Speech Recognition of Chinese Mandarin Words Based on the Syllables Recognition

Jun Li

Direct Radical-Consonant Coding of Chinese Characters

Yuhang Mao

Tone Recognition of Mandarin Homonyms

Gee-Swee Poo and Edward Tan

Session 11: Special Topics

Chair: D. Chang and J.K.T. Huang

Modular Dictionary Design for Chinese-to-English Machine Translation

Mei-Du Li and Gary G. Erickson
1987 International Conference on Chinese and Oriental Language Computing

Automatic Understanding of an Arabic Sentence ........................................... 253
   Ahmed A. Rafea and Aisha Rafea

A New Design Technique of Chinese and English Database Management System ................................................................. 257
   Songqiao Chen and Xinlin Wu

A Powerful Language Processing System for English-Chinese Machine Translation ................................................................. 260
   K.Y. Su, J.S. Chang, and H.H. Hsu

The Computational Analysis of Chinese Sentences ................................... *
   Zhongxiao Wang

Session 12: Panel Discussion

Chair: T.C. Ting

Intelligent Chinese Workstation: Present Status and Future Direction 265

Author Index ................................................................................................ 267