

Chairman's message

Welcome to ICSLP2000 in Beijing China. Year 2000 is unique, which marks the end of the 20th century and the beginning of the new 21st century. As a meeting held at this century turning, ICSLP2000 will be an important conference in ICSLP history and a significant event in the Spoken Language Processing.

Following the interdisciplinary tradition established by the first conference that was held in Kobe Japan in 1990, we will put an emphasis on the balance, interaction and integration of the science and technology, of human-oriented research and machine-oriented research as well as of speech processing and natural language processing. The theme of the conference will be "Spoken Language Processing in Trans-Language and Trans-modal Communication for the New Century".

The Technical Program Committee has compiled a four-day technical program that covers broad areas of Spoken Language Processing relevant to linguistics, physiology, psychology, communication technology, man-machine interface.

The technical program consists of sessions including special ones and is also highly lighted by a plenary session.

There will also be five satellite events:

1. Workshop on Multi-lingual Speech Communication
2. International Symposium on Chinese Spoken Language Processing
3. The 4th International Symposium on Spoken Dialogue
4. COCOSDA Workshop 2000
5. Oriental COCOSDA Workshop

Technical exhibition of state-of-art technologies will also be held during the conference.

The conference venue is the Beijing International Convention Center, Beijing, China. China is a country that possesses long and brilliant cultural history. As Confucius said more than 2500 years ago, "we are always delighted to welcome friends coming from afar."

October is the best month of the year and in a beautiful season of traveling around China.

I believe that ICSLP2000 in Beijing will be a most important and enjoyable meeting and would like to extend a whole-hearted welcome from all the members of the Conference Committee.

Dinghua GUAN

ICSLP2000 General Chair

Technical Chair' s Message

Welcome to the 6th International Conference on Spoken Language Processing (ICSLP2000/INTERSPEECH2000), to be held in Beijing, China in October of the year 2000. As a meeting held in this centenary year, ICSLP 2000 would be the most important conference in ICSLP's history, and a significant event in the field of Spoken Language Processing. This conference will bring together international professionals in this field to summarize and display the latest developments, and to discuss prospects for the 21st century. The response of the spoken language community to ICSLP 2000 is overwhelming. More than 1200 abstracts were submitted from 47 countries and regions, it manifests increasing interests and vigorous research activities in spoken language processing field.

After review, near 930 papers will be include in the proceedings and presented at the conference. The Technical Program Committee had the difficulty task of selecting among so many papers of near equal quality. So submissions, which did not be included in the proceedings, are still fine papers. We would like to express our sincerely thanks to all the contributors who were interested in and made great efforts to the conference.

The technical program consists of plenary presentations, regular sessions and special sessions. In addition as many as five satellites symposia will be held in Beijing and Kyoto. During the course of four days, 37 oral sessions and 17 poster sessions will be held. The plenary presentations will be given by Prof. Kenneth N. Stevens (Research Laboratory of Electronics, MIT, U.S.A), Prof. Zongji Wu (Institute of Linguistics, China), and Prof. Karalyn Patterson (MRC Cognition & Brain Science Unit, U.K.). Seven special sessions were organized to discuss topics of current and future importance. Topics to be covered during the special sessions are as follows:

SS1 Speech Production Control

SS2 Speech Perception, Comprehension and Production: Insight from Neuropsychology and Neuroimaging

SS3 Prosody and Paralinguistic s

SS4 Trans-modal and Multi-modal Human-computer Interaction

SS5 Rules and Corpora: Descriptions, Optimization and Acquisition

SS6 Language Resources and Technology Evaluation— Globalized Efforts and Directions

SS7 Problems and Prospects of Trans-lingual Communication

Finally, we would like to thank reviewers from local and abroad and the members of the Technical Program Committee for their enormous work in reviewing all submissions and setting up the final program. We would express our special thanks to Prof. Fujisaki for his invaluable advises in organizing special sessions, and to Prof. Victor Zue for his invaluable support and advises. Our thanks also are to be sending to all the participants for presenting papers, attending sessions and being session chairs.

We sincerely hope that you will enjoy the conference and the beautiful city of Beijing with exciting history, wonderful sights and famous autumn sky.

Baozong Yuan

Chairman

Taiyi Huang

Co-chairman

Technical Program Committee

Conference Committee

Chinese Consultants

Qihu Li, Institute of Acoustics, CAS

Dah-you Maa, Institute of Acoustics, CAS

Zongji Wu, Institute of Linguistics, CASS

International Advisors

Hiroya Fujisaki, Science University of Tokyo, Japan (Foundation Chairman)

Souguil J M Ann, Seoul National University, Korea

Jens P Blauert, Ruhr University Bochum, Germany

Michael Brooke, University of Bath, UK

Timothy Bunnell, University of Delaware, USA

Anne Cutler, Max-Planck Institute, Netherlands

Julia Hirschberg, Bell Laboratory, USA

Bjorn Granstrom, Royal Inst. of Technology, Sweden

Chin Hui Lee, Bell Laboratory, U.S.A.

J Bruce Millar, Australian National University, Australia

Roger Moore, Defence Research Authority, UK

John J Ohala, University of California, Berkeley, USA

Louis C W Pols, University of Amsterdam, Netherlands

Christel Sorin, CNET, France

Yoh' ichi Tohkura, NTT, Japan

Victor Zue, MIT, USA

Conference Organizing Committee

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Renhe Zhang (Co-chair), Institute of Acoustics, CAS

Jian Zong (Vice chair), Institute of Acoustics, CAS

Jing Tian (Vice chair), Institute of Acoustics, CAS

Chaohuan Hou (Vice Chair), Institute of Acoustics, CAS

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Yi Yuan	Institute of Acoustics, China
Yan Luo	Institute of Acoustics, China
Jian Xu	China Association for Science and Technology
Jin Feng Mao	China Association for Science and Technology
Hualing Zhang	China Association for Science and Technology

Technical Program Committee

Baozong Yuan (Chair), Northern Jiaotong University

Taiyi Huang (Co-chair), Institute of Automation, CAS

Lin-shan Lee (Vice Chair), Taiwan University

Jialu Zhang(Vice Chair), Institute of Acoustics, CAS

Limin Du (Vice Chair), Institute of Acoustics, CAS

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Sadaoki Furui	Tokyo Institute of Technology, Japan
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Stephanie Seneff	MIT Laboratory for Computer Science, USA
Alex Waibel	University of Karlsruhe, German
Victor Zue	MIT Laboratory for Computer Science, USA
Huaiqiao Bao	Institute of Nationality Studies of Chinese Academy of Social Science
Jianfen Cao	Institute of Linguistics, China
Peiqi Chai	Tongji University, China
Daowen Chen	Institute of Automation, China
Huisheng Chi	Peking University, China
Limin Du	Institute of Acoustics, China
Ditang Fang	Tsinghua University, China
Wen Gao	Institute of Compyting Technology, China
Dinghua Guan	Institute of Acoustics, China
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Chengfa Wang	Harbin Institute of Technology, China
Renhua Wang	University of Science and Technology of China, China
Zuoying Wang	Tsinghua University, China
Wenhu Wu	Tsinghua University, China
Bo Xu	Institute of Acoustics, China
Yufang Yang	Institute of Psychology, China
Tiecheng Yu	Institute of Acoustics, China
Yuan Baozong	Northern Jiaotong University, China
Jialu Zhang	Institute of Acoustics, China
Fang Zheng	Tsinghua University, China
Tongchun Zhou	Beijing Normal University, China

Secretary

Xiaofang Tang Northern Jiaotong University, China

Satellite Meetings

1. **Workshop on Multi-lingual Speech Communication**, 11-13 Oct. 2000, Kyoto, Japan
2. **International Symposium on Chinese Spoken Language Processing**, 14-15 Oct. 2000, Beijing, China
3. **The 4th International Symposium on Spoken Dialogue**, 16 Oct. 2000, Beijing, China
4. **COCOSDA Workshop 2000, 21 Oct. 2000**, Beijing, China
5. **Oriental COCOSDA Workshop 2000**, 16, Oct. 2000, Beijing, China

The Information of Exhibition

An affiliated special and small sized exhibition will be held simultaneously on the same floor of the conference building. Some newly designed equipment related with language processing will be on display.

General Information

Proceedings

The CD ROM Proceedings and the Printed Proceedings for the conference will be available in the conference satchel upon registration on the spot (the student participants will not have the printed proceedings).

The additional copies of the Printed Proceedings may be available at the additional cost of USD12.

Morning and afternoon teas

Morning and afternoon teas from Tuesday Morning to Friday afternoon are included in the registration fee.

Lunch coupon

Every participants who want to save time for the conference sessions could purchase the lunch coupon upon registration on the spot at the cost of USD10/each lunch. The lunch will be served in buffet style.

Insurance

We regret that the Conference organizers can not accept responsibility for personal accidents and damage to private property of Conference and exhibition delegates

Registration and Information Area

Registration Desk

The registration desk will be located on the second floor of the conference building, and will be operating during the following hours:

Monday, (Oct. 16 th , 2000)	08:00 —21:30
Tuesday, (Oct.17 th , 2000)	08:30---17:30
Wednesday (Oct. 18 th , 2000)	08:30 —17:30
Thursday (Oct. 19 th , 2000)	08:30 —17:30
Friday (Oct.20 th , 2000)	08:30---17:30

Conference Tours Desk

Please visit the Conference Tours Desk, located at the same place as it of Registration Desk, for advice or enquiries regarding any day local tour or post conference tours. The Conference Tours staffs are happy to assist with general enquiries on exiting activities in Beijing and can arrange individualized tours. Tickets are available for all tour programs.

Name Badges

All delegates and accompanying persons are requested to wear name badge at all times. Entry to Conference sessions and social functions is by name badge only.

Conference Hotels

Participants of the conference and the exhibition and accompanying persons are hereby recommended to make hotel reservation at the following hotels with favorable room fee:

The hotel name	Luxury level	Room rate
Beijing Continental Grand Hotel	4 stars	Single room USD 95/night Double room USD 116/night
The Catic Plaza Hotel	3 stars	Single room USD 80/night Double room USD 90/night
The Laodong Hotel	2 stars	Single room USD 55/night Double room USD 60/night

- a) Western breakfast is included in the room rate mentioned above.
- b) Shuttle buses from the Laodong Hotel to BICC will be available daily during the conference period.
- c) Anyone who haven't make any hotel reservation previously, could get the correspondent hotel information and help in making the reservation from the working staffs at the registration desk

Information on Beijing

Beijing, the capital city of China, is located in the northeast part of China with population of 12million and area of 1600 square km among which about 300 square km belong to the city area and the rest belong to the counties that are under the jurisdiction of Beijing municipal government. October is the most convenient and beautiful season in Beijing with brilliant sunshine and comfortable temperature every day. From the first time when Beijing became the organized human settlement area should dates back to about 3000 years and as the capital city of China, Beijing possesses nearly 1000 years history. So, apart from the natural beautiful scenic spots around, Beijing could also provide a lot of valuable historical relics that are all worth well seeing.

The Forbidden City (Palace Museum) is located in the heart of Beijing. It is the former imperial palace of the Ming (1368 - 1644) and Qing (1644-1911) dynasties, and is China's largest and most complete existing group of imperial palace buildings. For 500 years 24 emperors ascended to the throne, lived and handled state affairs here.

The Forbidden City is enclosed by a 10 m high battlement wall, which extends 960 m from north to south and 750 m from east to west. At each of the four corners of the wall is a watchtower, and a moat outside the wall. The Forbidden City covers an area of 720,000 m² and contains more than 9,000 rooms. The layout of the palaces highlights the supremacy of the imperial power. The main buildings on the central axis are dominant, while other buildings were built in strict symmetry on either side and their styles vary.

Tian An Men Square & Tian An Men (Gate of Heavenly Peace) Rostrum. The 33.7 m high rostrum used to be the front gate of the Imperial City during the Ming and Qing dynasties. At the foot of the rostrum lies the Golden Water Bridge, with two grand viewing stands on both sides. In front of it are two ornamental columns (called "Hua Biao") weighing 20 tons each with carved decorations of clouds and dragon on the white marble. It was on the Tian An Men Rostrum that the late Chairman Mao Zedong held the grand ceremony marking the founding of the People's Republic of China on October 1, 1949.

Covering an area of 400,000 m², the square is the largest one in the world. Located in the center of Beijing, it is an expansion of the square in front the Imperial City. In the center of the square are the Monument to the People's Heroes, with the Chairman Mao's Memorial Hall to the south. The square is surrounded by the Tian An Men Rostrum to the north, the Great Hall of the People to the west, and the Museum of the Chinese History and the Museum of the Chinese Revolution to the east. The regular flag-raising and flag-lowering ceremonies on the square attract many local people and tourists every day.

The Summer Palace. The famous imperial garden was constructed in 1750 under the order of Qing Dynasty Emperor Qian Long to celebrate his mother's 60th birthday. It was the summer resort of the royal family and the venue for extravagant celebrations.

The Summer Palace is the largest existing imperial garden in China. It consists primarily of the Longevity Hill and Kunming Lake. Of its 2.9 km² area, water covers 3/4. Based on the natural hills and water courses, most of the buildings - pavilions, bridges, corridors, halls and palaces - reflect scenic spots and historical sites south of the Yangtze River. Other attractions include the Long Corridor, the 17-Arch Bridge, the Marble Boat and the

newly restored Suzhou (Business) Street with old style teahouses, wine shops, private banks, etc.

The Ming Tombs. These are tombs of 13 emperors of Ming dynasty. Construction of the tombs started in 1409 and ended with the fall of the Ming dynasty in 1644. In over 200 years the tombs were built over an area of 40 km² surrounded by walls totaling 40 km. The tombs spread around a valley that looks like a natural courtyard. Of the tombs, only the underground palace at Dingling, the tomb of the 13th Ming Emperor Wanli, is excavated. On display in the museum near the tomb are marble coffins, religious regalia and jewelry, garments, porcelain and curios.

The Great Wall. To the northwest of Beijing, a huge, serrated wall zigzags its way to the east and west along the mountains. This is the Great Wall, the greatest construction project of ancient China. The construction of the Great Wall started in the 7th century BC. The vassal states under the Zhou dynasty in the northern parts of the country each built their own walls in defense of their own borders. After the state of Qin unified China in 221 BC, it joined the walls to keep out the nomadic invaders from the north. With a total length of over 6000 km, the wall winds from the Bohai Gulf in the east China to Jiayu Pass in the west. Being 7.8 m high and 5.8 m wide at the top on the average. A major renovation started in 1368 in Ming dynasty and took 200 years to complete. The wall we see today is almost the result of this effort.

The Temple of Heaven It was believed to be the place with direct access to Heaven. Emperors of the Ming and Qing dynasties came here to pray for a good harvest in spring and for rain in summer, and to offer sacrifices to Heaven in winter. Built between 1406 - 1420. In line with the ancient Chinese concept of round heaven and square earth, the buildings in the temple were given a circular shape, except the double wall, which is circular in the north but square in the south, and the outer walls of the Altar of Heaven and the Hall of Prayer for Good Harvest are square. The main building, the Hall of Prayer for Good Harvest, has become the symbol of Beijing. It is 38 m high and 32 m in diameter. With 3 layers of eaves, the hall is supported by 28 pillars, among which 4 pillars in the middle represent the 4 seasons, and two outer rings of 12 pillars each symbolize the 12 months and 12 two-hour periods in a cycle of day and night. The 3-tiered Altar of Heaven, where the emperors offered sacrifices to Heaven, is 5 m high. The Echo Wall is best known for its interesting acoustic phenomena. It is a circular structure composed of polished bricks on the inside. A whisper at one point of the wall can be heard at any other point.

Welcome Reception

19:00-20:30 Oct. 17th, 2000 Tuesday

Welcome Reception in Beijing International
Convention Center

Optional Social Program

19:30 –21:00 Oct. 19th, 2000 Friday Conference Banquet in Beijing International
Convention Center

The Performance Show:

Oct. 18 Beijing Opera (6:00pm Leave the hotel for dinner then 7:30pm enjoy the Beijing
Opera Show) Price: USD 30/person (the dinner fee is included)

Oct. 20 Acrobatics Show (the schedule is the same as the above one)
The price: USD 35/per person (the dinner fee is included)

Optional Local Tours

- Oct. 16 (LT-1): Beijing Zoo- -Lunch –The Yuan Ming Yuan Park
8:30am-4:00pm The price: \$ 35/per-person
- Oct. 17 (LT-2): Tian' anmen Square -The Forbidden City-Lunch-Lama Temple
8:30am-4:00pm The price: USD 40/per-person
- Oct. 18 (LT-3): option-1 The Summer Palace-Lunch-The Sleeping Buddha Temple
8:30am-4:00pm The price: USD 35/per-person
option-2 The Great Wall & The Ming Tombs
The price: USD45/per-person
- Oct. 19 (LT-4): The Beihai Park & Jingshan Park -Lunch-Liu Lichang Street
8:30am-4:30pm The price: USD 35/per-person
- Oct. 20 (LT-5): The Temple of Heaven – Lunch – The Grant View of Garden
8:30am-4:00pm The price: USD 35/per person
- Oct. 21 (LT-6): The Great Wall & The Ming Tombs
8:00am-5:00pm The price: USD 45/per-person

* The lunch fee is included in the above local tour quotations.

Optional Post-Conference Tours

PT-1 Beijing-Xi'an-Guilin-Guangzhou (6.5 days)

Price: Single room occupancy USD 1080/person

Double room share USD 980/per-person

PT-2 Beijing-Hangzhou-Shanghai-Suzhou-Shanghai, exit (6.5 days)

Price: Single room occupancy USD 980/person

Double room share USD 860/per-person

PT-3 Beijing-Tai'an-Qufu-Beijing (5 days)

Price: Single room occupancy USD 590/per-person

Double room share USD 490/per-person

- *1. Participants for PT-2 and PT-3 should reserve the exit air-ticket from Beijing and Shanghai to overseas by yourself.
- *2. Quotations for the above post-conference tour programs include inter-city transportation, accommodation, full meals, admission fee for the tourist spots and the tourguide service. Quotation for the PT-1 also includes the train ticket from Guangzhou to Hong Kong.