

OPENING SPEECH



It gives me a great pleasure to welcome each of you to the Asian TeX Conference 2008 to share experiences and ideas on TeX and friends, and digital typography in general. First, I would like to take this opportunity to express my sincere thanks to the College of Humanities & Social Sciences and the Kongju National University for making the conference actually taking place by generously hosting and sponsoring this event. I personally thank Professor Chun-Hoi Jung for giving us a warm welcome.

This conference was organized by the Korean TeX Society in collaboration with the Department of Economics, Kongju National University especially in Asian context bearing a long tradition of literary culture. I truly hope that this opportunity will benefit all of us and give us chances to see the future perspectives regarding TeX and digital typography.

AsiaTeXo8 wouldn't be possible without the excellent speakers. I am very grateful to the invited speakers who have agreed to give us insightful and informative plenary speeches. I am also grateful to general speakers for bringing us up many stimulating subjects. My thanks also go to all the participants who came to Kongju to join this cheerful event.

The organizers have tried their best to set this conference to meet the needs of all participants. If you, however, have any queries and/or worries, please don't hesitate to talk to one of the organizers including me.

Last but not least, I thank staff members of the Korean TeX Society and the local organizers for their hard work for implementing every details of the conference.

Please enjoy yourselves and happy TeX'ing!

In-Sung Cho
President of the Korean TeX Society

About the Korean TeX Society

한국TeX학회는 학술진흥재단에 복합학 학제간 연구 학술단체로 등록된 언어학, 사학, 경제학, 법학, 수학, 전산학, 공학, 의학 등 다양한 전공자들과 각종 연구기관 및 산업체 종사자들이 함께 모인 학회입니다. 개별 전공의 테두리를 넘는 학제간 연구의 지원이 일천한 가운데, 선구적인 지원을 제공한 공주대학교, 특히 인문사회과학대학에 감사의 말씀을 전하고자 합니다.





WELCOMING SPEECH



Hello, everyone. I'm glad to see you and sincerely welcome all of you, especially the foreign scholars to the international conference and to the Kongju National University.

Gongju is a small city of about 130,000 population, but it is famous for the ancient Kingdom of Baekje, and also famous for education in which there are two universities and one college.

I understand that the overall subjects of this international conference is TeX and related tools. I know typesetting is one of three sectors in typography, and TeX is being developed from two viewpoints: the first is design related to beauty and legibility, and the second is technique related to convenience and automation.

Korea has a long history of typography and also has a brilliant writing system called "Hangul", but we know the typesetting technique has not much progressed. From this aspect, I expect the first TeX-related conference here will promotes the development of a new TeX engine for "Hangul".

Finally I want to give many thanks to the members of the organizing committee and the program committee, and especially to Professor In-Sung Cho, the president of the Korean TeX Society. I hope all of the participants enjoy your stay in Gongju.

Thank you for listening.

Chun-Hoi Jung

Dean of the College of Humanities and Social Sciences

Kongju National University (KNU)

About the College of Humanities and Social Sciences, KNU

The College of Humanities and Social Sciences was formed in 1991, when KNU was upgraded from Kongju National Teachers' College established in 1948. It provides students with analytical skills and professional knowledge in the fields of humanities and social sciences offering courses for students in two divisions and 12 departments. The aim of the college is to educate intellectuals with in-depth knowledge in major fields, and an analytic and creative spirit, and to foster the youth who will dedicate themselves to national development and human prosperity through the study of humanities and social sciences.





PROGRAM

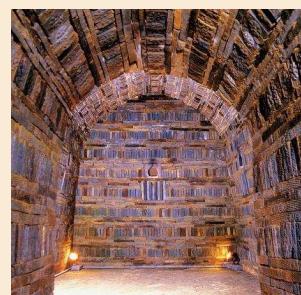
Jan 25, 2008 (Friday)		
09:30-09:50	Registration	
09:50-10:00	Welcome & Opening	Chun-Hoi Jung
10:00-10:50	Plenary Session I Jin-Hwan Cho <i>How to Knock Down TFM, Achilles in the TeX System</i>	Dohyun Kim
10:50-11:00	Break	
11:00-11:30	General Presentation I Nobuyuki Tsuchimura <i>Development of Japanese TeX distributions "ptetex" & "ptexlive"</i>	Dohyun Kim
11:30-12:00	General Presentation II Jean-Michel Hufflen <i>Strategy for Extending MiBibTeX to Asian Languages</i>	Dohyun Kim
12:00-13:00	Lunch	
	Excursion to <i>Muryeong-wangneung</i> (The Royal Tomb of King Muryeong)	
13:00-14:20	Free Discussion with Question & Answer	Kangsoo Kim
14:20-14:30	Break	
14:30-15:20	Plenary Session II Haruhiko Okumura <i>Japanese TeX—Past, Present, and Future</i>	Kangsoo Kim
15:20-15:30	Break	
15:30-16:00	General Presentation III Gernot Hassenpflug <i>A Japanese Letter Class Using the KOMA-Script v.3</i>	Kangsoo Kim
16:00-16:10	Break	
16:10-17:00	Plenary Session III Werner Lemberg <i>Unicode Support in the CJK Package</i>	Kangsoo Kim
17:00-18:00	Break	
18:00-21:00	Banquet for All Participants	

Jan 26, 2008 (Saturday)

09:30-10:20	Plenary Session IV Hàn Thé Thành <i>Experience from a Real-world Application of Micro-typography with pdfTeX</i>	Jin-Hwan Cho
10:20-10:30	Break	
10:30-11:00	General Presentation IV Yusuke Kuroki <i>Japanese TeX Environment for Cygwin</i>	Jin-Hwan Cho
11:00-11:30	General Presentation V Kihwang Lee <i>Typesetting Korean Dictionaries with XML & ETEx</i>	Jin-Hwan Cho
11:30-11:40	Closing	In-Sung Cho
11:40-11:50	Break	
11:50-12:20	Korean TeX Society General Assembly	
12:30-14:00	Lunch	
14:00-18:00	Excursion to Cheongju Early Printing Museum	

About the Excursions

Cheongju Early Printing Museum is located at *Heungsdeok Temple* site where the oldest metal printing types were manufactured in July, 1377. *Jikji* (直指) is the first book published using metal printing method. Unfortunately, *Jikji* is not available in the Republic of Korea, but the National Library in France retains the second volume of the original version.



Muryeong-wangneung (武寧王陵) was found when drainage work was conducted to prevent water penetration into the Songsanri old tombs No. 5 and 6 in 1971 and excavated for the first time about 1,500 years after it was made. In particular, people were so excited because the tomb clearly recorded that the tomb was for King Muryeong and his wife. King Muryeong ruled the Kingdom of Baekje from 501 to 523. This royal tomb has great significance in understanding the cultural exchange between East Asian countries in 6th century.



ABSTRACTS

Plenary Sessions

1. How to Knock Down TFM, Achilles in the TeX system

Jin-Hwan Cho

The University of Suwon, Republic of Korea

Many TeX fonts were originally designed in the format of MetaFont, a font creation software developed by D. E. Knuth as well as TeX. A MetaFont source generates two kinds of TeX font files. One is a TeX font metric (TFM) file, mainly used by TeX and DVI drivers to provide character information in a compact way. The other is a generic font (GF) file containing character shapes rendered in a bitmap format, which is then converted to a packed font (PK) file to be used by most of DVI drivers.

Recently, widespread of PDF file format made less and less use of bitmap PK fonts in the final TeX output, and they were replaced by scalable outline fonts such as PostScript Type1 and OpenType. We notice that these outline fonts contain not only character shapes but also almost all character information. However, many TeX engines and DVI drivers still extract character information from TFM files only, and character shapes from outline fonts.

In this talk we discuss this redundancy residing in between TFM and outline fonts, after a review of various font formats and their roles in the TeX system.

2. Japanese TeX — Past, Present, and Future

Haruhiko Okumura

Mie University, Japan

In 1987, Yasuki Saito, researcher for the then government-owned Nippon Telegraph and Telephone (NTT), developed jTeX, often called NTT jTeX, which can handle Japanese characters. jTeX splits a Japanese font into 33 subfonts, each containing at most 256 characters.

In the same year, Shunji Ohno and Ryoichi Kurasawa, of the technical publisher ASCII Corporation, developed ASCII Nihongo TeX. It was a true multibyte extension of TeX, accomodating thousands of characters in one font.

Three years later, ASCII's Hisato Hamano extended it to enable vertical typesetting. The new version of Nihongo TeX was named pTeX ("p" for publishing) to distinguish it from the NTT jTeX. In 1995, pTeX was revised A in accordance with TeX 3.0, and pTeX 2E was developed. Since then, pTeX has been the typesetting tool of choice for Japanese technical publishing.

I got interested in p_TE_X when I was preparing my third book (on algorithms in C), having been agonized by the proofreading of my first two books (and several high-school math textbooks I coauthored). I described the joy of p_TE_X in my fourth book, but I noted that the Japanese font metrics and style files that came with p_TE_X were less than satisfactory. I asked Hajime Kobayashi, the printing professional who was in charge of my third and fourth books, to design a new set of font metrics based on the then new Japanese Industrial Standard for typesetting, JIS X 4051 (1993). Accumulating experience in Japanese typesetting, I have been rewriting my p_TE_X book every three years.

In 2006, Nobuyuki Tsuchimura developed the p_TE_X implementations, ptetex and ptex-live, that can process UTF-8 files, although the internal encoding remained traditional (JIS) 16-bit representation.

Subsequently, Takuji Tanaka set out to develop up_TE_X, a true Unicode implementation of p_TE_X.

In my talk I will explain what is unique about Japanese typesetting (some of the material appeared elsewhere), and try to describe how p_TE_X and up_TE_X work, and what to expect Japanese T_EX for the future.

3. Unicode Support in the CJK Package

Werner Lemberg

Municipal Theatre, Germany

This article describes how the CJK package for L_AT_EX handles Unicode encoded characters. Using the CJKutf8.sty file, L_AT_EX's native Unicode handling is combined with CJK's capabilities for CJKV scripts. Another recent extension is support for X_ET_EX which is here described also.

4. Experience from a Real-world Application of Micro-typography with pdfT_EX

Hàn Thé Thành

River Valley Technologies, India

This article describes the experience from a real-world application of micro-typography with pdfT_EX. The project involved typesetting a study edition of the Bible in Czech, where there was a lot of further information apart from the original text: footnotes, references, further annotation etc. The design was not complex, but the typographic requirements were very strict. This posed a real challenge to typesetting everything without conflicts. The biggest problem was how to achieve perfect page-breaking without changing a single word of the text. The solution was to use a semi-automated method: manual breaking of each page, with auto-detection of problematic pages (like orphan/widow, too little/too much space between body and footnotes, etc). When such a problem occurred, it had to be fixed by changing the length of one or more paragraphs on that

page until the problem disappeared. Since we are not allowed to modify the text, the length of a paragraph could be changed only by changing the formatting of the paragraph (`\looseness`), in order to make it longer or shorter. This usually results in poor-looking paragraphs. However, with the aid of micro-typography provided by pdfTeX, this was achieved without loss of quality.

General Sessions

1. Development of Japanese TeX distributions “ptetex” and “ptexlive”

Nobuyuki Tsuchimura

The University of Tokyo, Japan

In Japan, TeX is required to have an ability to typeset Japanese characters (up to 6000+ characters) both vertically and horizontally. pTeX is a solution for this requirement, which is a 16-bit extension of TeX developed by ASCII Corporation. pTeX has been the de facto standard extension of TeX in Japan for over ten years.

On the Windows platform, we can install pTeX “W32TeX” by A. Kakuto. However, for a long time, we did not have any source distribution for UNIX which includes pTeX. We, especially Linux distributors, had difficulties in adding pTeX support to “teTeX” because we needed more than a dozen of related patches for DVI drivers or additional data written by many individual authors.

To avoid such hard work, we are developing “ptetex” and “ptexlive.” Our aim is as follows:

- Make it easy to compile Japanese TeX.
- Let our distributions be used in various OSes.
- Push pTeX and the related patches to upstream (WEB2C? “TeX Live”? CTAN?).

We can say that we had some progress for the first two aims. We hope we achieve the last aim and finish developing. While developing the distributions, we are also extending pTeX to automatically detect character encodings such as ISO-2022-JP, EUC-JP, Shift_JIS, and UTF-8. We would like to know the impact of pTeX capable of handling UTF-8 in Asia.

2. Strategy for Extending MlBIBTeX to Asian Languages

Jean-Michel Hufflen

University of Franche-Comté, France

MlBIBTeX (for ‘MultiLingual BIBTeX’) aims to be a ‘better BIBTeX’ especially about multilingual features. The first public version is able to deal with most of European languages

including English, French, German, and others.

In this article, we point out the problems we have to face in order to extend MiBIBTEX to Asian languages and discuss the ways we plan to solve them.

- The syntax of bibliography database (.bib) files is quite old and probably unsuitable for entries expressed in Asian languages, especially if these languages do not use the Latin alphabet. MiBIBTEX can use this syntax but internally deals with XML features. xml-like syntax will be provided to specify such Asian entries.
- Given a person name, BIBTEX recognises four parts: the first name, the particle, the last name, the lineage ('Senior', 'Junior', etc.) BIBTEX's conventions may apply to extra-European names, but only by means of workarounds. On the contrary, our XML-like syntax should be able to express various decompositions for names in Asian cultures.
- MiBIBTEX's present version only uses the Latin 1 encoding (even if some tricks allows characters belonging to Eastern-European languages to be handled): MiBIBTEX's implementation language has just been extended and should be able to deal with Unicode texts now.
- Other calendars than Gregorian may be used to date bibliographical references.

When we launched the MiBIBTEX project, we wrote a questionnaire about bibliography layout used throughout European countries. We also will introduce an extended version of this questionnaire, that should allow us to put bibliographies w.r.t. Asian cultural background into action.

3. A Japanese Letter Class Using KOMA-Script v.3

Gernot Hassenpflug

National Institute of Information and Communications Technology, Japan

Much development has gone into multi-lingualization and the use of CJK in localized T_EX distributions. In Japan, NTT jT_EX and ASCII pT_EX are well-known, and with JIS, SJIS or EUC encodings support Japanese and English. Recently, it has become possible to use CJK characters in other distributions by the use of Unicode.

KOMA-Script is an alternative to the standard classes: it offers a wide range of functionality, is actively developed, and well-documented. Use of the CJK macros is supported, and the letter class, scrlertr2, caters for the Japanese writing environment.

Support for Japanese letter writing is threefold. First, the CJK macros can be used; hence, the input of CJK in various encoding formats is possible, and basic rules for Japanese horizontal and vertical typesetting are provided. Punctuation in vertical typesetting has been improved and half-width katakana as a means of adequately writing compactly in narrow fields have been added.

Second, the `scrlttr2` class provides templates supporting Japanese envelope sizes and windowed envelope variants. The most common of the many window envelope variants are supported.

Third, several variables have been added or modified to allow their use with non-German standards. Another change is increased flexibility of letterhead and letterfoot customization.

The KOMA-Script `scrlttr2` class has arguably the best support for customizable letters among all the L^AT_EX2e packages. CJK input is possible; thus, it may provide a starting point for implementing letter requirements of CJK nations.

Support for Japanese letter requirements and envelope sizes is still under development. Information on formal letter standards for official use at institutions, in companies or at legal firms, is still scarce. Importantly, development is needed to enable use of powerful form letter capabilities with Japanese address formats. Similar development to support Korean and Chinese letter requirements may be possible.

4. Japanese T_EX Environment for Cygwin

Yusuke Kuroki

The University of Tokyo, Japan

A T_EX environment is composed of not only a set of T_EX processors (including compilers, macros, fonts, DVI drivers, etc.), but also Ghostscript — an interpreter for both PostScript language and PDF and an essential tool for handling images in this context. The original T_EX processors in Cygwin, a UNIX-like environment for Windows, is made of teT_EX. In order to properly typeset Japanese, we use pT_EX and related tools these days, but teT_EX does not include them. Moreover, Ghostscript in Cygwin cannot deal with Japanese. Therefore, Japanese Cygwin users need to additionally prepare Japanese T_EX environment. There are some ways to do it, but we are providing a set of binary packages to construct it using Cygwin Net Release Setup Program, i.e., official GUI installer. We intend our new binary to be another choice against a famous binary for the native Windows system, to be installed easily, and to be used comfortably by Cygwin users. We choose the following sources: an ongoing source distribution ‘ptetex’ for T_EX processors, and gs-cjk products and the stable version 7.07 for Ghostscript.

Nowadays, a standard Japanese T_EX environment for Windows is uniquely made up of the following components: (1) T_EX processors except DVI viewer, called W32T_EX by Kakuto A., (2) DVI viewer, named ‘dviout for Windows’ by Ohshima T. and Otobe Y., and (3) Ghostscript compiled by Kakuto.

It is a relief that no one need to wander about choosing a right set of binaries. However, I wonder whether it is welcome from the risk management perspective. However, it was a noteworthy fact that users are still required many steps to install the standard

environment for Windows: (1) choose and gather many files from web pages; (2) apply various methods for installing them; (3) fix environmental variables, and (4) make an initial setting on dvout. While giving our mind to the above circumstances, ‘ptetex’ — a Japanese \TeX distribution for UNIX by Tsuchimura N. — appeared. We believed it could be made available on Cygwin and we started the project.

The project approximately has 300 viewers and 70 downloads for a week. In the future, we would like to contribute something to the world-wide \TeX community, if possible while carefully observing the rapidly changing surroundings.

5. *Typesetting Korean Dictionaries with XML and L^AT_EX*

Kihwang Lee
Yonsei University, Republic of Korea

Digital humanities can be broadly defined to encompass the common ground between information technology and issues in the humanities research and teaching. Is is no doubt that *electronic texts* are in the center of digital humanities as texts in traditional sense are in traditional humanities.

XML is regarded as one of the most efficient ways of encoding electronic texts that can have extremely complex structures. Essentially, XML-based mark-up systems are used to reveal both implicit and explicit textual elements in documents. However, they do not convey any information on how to visualize the documents. Since \TeX and L^AT_EX are also mark-up systems, the possibility of using \TeX or L^AT_EX for rendering XML documents has been considered from the early days and various methods have been proposed. However, reports of application of such methods in real-world problems are hard to find at least in Korea.

This paper presents a method of typesetting XML-encoded Korean dictionaries using L^AT_EX which is being developed as a component of a integrated dictionary production system. We will also look into the perspectives of the roles of \TeX and friends in the age of digital humanities.