Overview of NTCIR-10*

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ABSTRACT

This is an overview of NTCIR-10, the tenth sesquiannual workshop for the evaluation of Information Access technologies. NTCIR-10 celebrates its tenth cycle of the research activities attracting the largest and most diverse set of evaluation tasks led by cutting-edge researchers worldwide. This paper presents a brief history of NTCIR and overall statistics of NTCIR-10, followed by an introduction of eight evaluation tasks. We conclude the paper by discussing the future directions of NTCIR. Readers should refer to individual task overview papers for their activities and findings.

Keywords

Evaluation, Information Access, Information Retrieval, Natural Language Processing, Summarization, Question Answering, Test Collection

1. INTRODUCTION

NTCIR is a leading evaluation forum for Information Access technologies located in Asia. The acronym stands for NII Testbeds and Community for Information access Rsearch, since NTCIR-9. NTCIR is a community-led activity where researchers propose an evaluation task and the proposals are assessed by the program committee. This ensures that the evaluation tasks of NTCIR are well motivated by a group of researchers, but also that the tasks are well designed and managed to attract diverse research groups worldwide.

NTCIR-10 started on January 2012 and ended on June 2013. At NTCIR-10, eight evaluation tasks were selected by the program committee. Of those, six were core tasks and two were pilot tasks. The selected core tasks were CrossLink-2, INTENT-2, 1Click-2, PatentMT-2, RITE-2, and SpokenDoc-2, and pilot tasks were Math and MedNLP. All core tasks were the 2nd round of their activity since NTCIR-9, and pilot tasks were new at NTCIR-10. MedNLP was accepted via the 2nd call for task proposals, which was an experimental attempt in NTCIR-10 to accommodate emerging research topics during the 18 months of one round. The transition of evaluations tasks from NTCIR-1 to NTCIR-10 is shown in Figure 1.

The members of the NTCIR-10 Program Committee were Charles Clarke (University of Waterloo, Canada), Kalervo Järvelin (University of Tampere, Finland), Hideo Joho (Co-Chair, University of Tsukuba, Japan), Gareth Jones (Dublin City University, Ireland), Noriko Kando (NII, Japan), Tsuneaki Kato (The University of Tokyo, Japan), Tetsuya Sakai (Co-Chair, Microsoft Research Asia, PRC), Mark Sanderson (RMIT University, Austraria), and Ian Soboroff (NIST, USA).

The selected tasks typically developed the evaluation methodologies and resources (i.e., test collections) in the first four to six months, and started to call for participation. Participating teams submitted runs (outputs of a system) to task organisers. Task organisers then assessed the submitted runs using some form of metrics, and returned the results to the participants. Participants and task organisers then wrote a paper reporting their findings from the NTCIR-10 participation. NTCIR-10 was concluded by the NTCIR-10 conference held between 18th and 21st June, 2013, at NII, Tokyo.

A total of 101 teams participated in at least one of the NTCIR-10 tasks. This is 12% increase from NTCIR-9 (90 teams, [1]), which indicated a steady growth of the community. The breakdown of the participating teams by country or region is shown in Table 1. As can be seen, while many participants were from Asian regions, researchers from North America, Europe, and Oceania have actively participated in NTCIR-10. A full list of all participating teams can be found in Appendix. The range of languages covered by NTCIR-10 is shown in Figure 2.

The next section will introduce the eight evaluation tasks run at NTCIR-10. For those who are interested in the cur-

Table 1: Number of participating teams by country/region

Country/Region	# of Teams
Japan	53*
China	15
Taiwan	11
Germany	6*
USA	4
Canada	3*
France	3*
Ireland	2
Korea	2
Australia	1
India	1
Czech Republic	1
United Kingdom	1
TOTAL	103 (101)

Countries with * had a joint international team.

*This is a revised version published on 11th July 2013.

	RITE	Patent MT	INTENT	1CLICK	CrossLink	Spoken Doc	Math	MedNLP
Chinese (simplified)		CE						
Chinese (traditional)								
English		EJ			CE, JE, KE			
Japanese		JE						
Korean								

Figure 2: Languages covered by NTCIR-10 Tasks

rent and past activities of NTCIR, please visit the website[1] and publication page[2].

2. NTCIR-10 EVALUATION TASKS

NTCIR-10 had six core tasks and two pilot tasks, which are briefly introduced in this section. Readers should refer to the overview paper of individual tasks for more details regarding their activities and findings.

2.1 CrossLink-2

Producing valuable resources on the Web involves the creation of useful contents and hyperlinks to appropriate resources available in other pages. However, finding appropriate resources to link is not trivial, given the availability of millions of choices. The issue becomes even more challenging when we consider multilingual cases. For example, although translation (whether manual or automatic) can be used to obtain multilingual contents on the web, translating all the linked resources is not feasible. Therefore, you will need to find other resources to link from a translated content. Moreover, not all hyperlinks available in an original page are necessarily useful nor appropriate when translated, and thus, you might need to reconsider existing hyperlinks in multilingual contents.

Cross-lingual link discovery (CLLD) is concerned with the challenge of "automatically finding potential links between documents (written) in different languages" [2]. CLLD usually involves two stages of process such as anchor text finding, and link discovery. CrossLink-1 at NTCIR-9 explored its evaluation methodology and created the test collection using a snapshot of Wikipedia by removing the links from the topic pages. Participants were asked to re-established the links from the stripped website. CrossLink-1 had three sub tasks such as English to Chinese (E2C) CLLD, English to Japanese (E2J) CLLD, and English to Korean (E2K) CLLD.

The second cycle at NTCIR-10, CrossLink-2 extended its resources by creating new sub tasks such as Chinese to English (C2E) CLLD, Japanese to English (J2E) CLLD, and Korean to English (K2E) CLLD, in addition to the existing sub tasks of E2C, E2J, and E2K. The new sub tasks required more sophisticated processing of Asian languages to find appropriate anchors from original pages, when compared to CrossLink-1. A total of 67 submissions were made by 10 groups. Performance of submitted runs was measured by the metrics that were link-based measures such as Link Mean Average Precision (LMAP) and its variants. The details of their activities and findings can be found in the overview paper [2] and website[3].

2.2 INTENT-2

Queries, people's expression of information needs, are often short, ambiguous, and underspecified. However, their potential intension behind such queries has been diversified as the range of resources and services available on the Web has expanded. For example, a searcher might submit a query "harry potter" to a search engine. Her intension behind the query can be about the original novels, films, characters, plots, or DVDs. Consequently, individual query intents are likely to need different kinds of relevant information. Recent search engines are designed to *diversify* search results to adapt varied intents expressed by typical queries. Therefore, finding potential intents of queries is an extremely important technology of current search engines.

Subtopic Mining is concerned with the identification of potential intents of queries. A subtopic string is defined as a "query that specialises and/or disambiguates the search intent of the original query" [3]. Document Ranking then can consider the identified query intents to achieve diversified search results. INTENT-1 established the design of evaluation resources using Japanese (JA subset of ClueWeb09 collection) and Chinese (SogouT) datasets. Since not all subtopics were equally important, probability and graded relevance judgements were provided for individual intents per topic.

The second cycle at NTCIR-10, INTENT-2 extended its topic set to include English topics in a coordination with TREC Diversity Track. It also had navigational queries in the topic set to encourage participants to develop selective search result diversification. A total of 91 runs was submitted by 12 teams. Submitted runs were evaluated using diversity measures such as D#-nDCG, DIN-nDCG and P+Q. It should be emphasised that INTENT-2 also evaluated the performance of the systems used in INTENT-1 to highlight rigorous performance measures using multiple test collections. The details of their activities and findings can be found in the overview paper [3] and website[4].

2.3 1CLICK-2

Text-based Information Retrieval (IR) systems, whether a classic OPAC system at a library or modern search engine, are often designed to deliver *documents* (e.g., news article, academic paper, web page) to users, not the information itself for which the users seek. While this particular form of interaction has its significant advantage of being scalable against variety, volume, and velocity of document collections, it is also evident that users have to spend a relatively long time to go through a ranked list of retrieved documents to locate actual relevant information. Therefore, when information needs are well recognised by searchers, *information* (not document) retrieval might be desirable.

Multi-document summarisation addressed by 1CLICK Task is concerned with extraction of textual strings called iUnits (called "nuggets" at 1CLICK-1) from a corpus in response

[1]http://research.nii.ac.jp/ntcir/index-en.html
[2]http://research.nii.ac.jp/ntcir/publication1-en.html
[3]http://ntcir.nii.ac.jp/CrossLink-2/
[4]http://research.microsoft.com/INTENT/

Year	1999	2001	2002	2004	2005	2007	2008	2010	2011	2013
Task/NTCIR round	1	2	3	4	5	6	7	8	9	10
Automatic Term Recognition and Role Analysis (TMREC)	9									
Ad hoc/Crosslingual IR(1) -> Chinese/English/Japanese IR(2) -> CLIR(3-6)	28	30	20	26	25	22				
Text Summarization Challenge (TSC)		9	8	9						
Web Retrieval (WEB)			7	11	7					
Question Answering Challenge (QAC)			16	18	7	8				
Patent Retrieval [and Classification] (PATENT)			10	10	13	12				
Multimodal Summarization for Trend Information (MUST)					13	15	13			
Crosslingual Question Answering (CLQA)(5,6) -> Advanced Crosslingual Information Access (ACLIA)(7,8)					14	12	19	14		
Opinion(6) -> Multilingual Opinion Analysis (MOAT)(7,8)						12	21	16		
Patent Mining (PAT-MN)							12	11		
Community Question Answering (CQA)								4		
Geotemporal IR (GeoTime)								13	12	
Interactive Visual Exploration (Vis-Ex)									4	
Patent Translation (PAT-MT)(7,8) -> **Patent Machine Translation (PatentMT)(9,10)**							15	8	21	**21**
INTENT									16	**11**
One Click Access (1CLICK) (subtask of INTENT at NTCIR-9)									4	**8**
Recognizing Inference in Text (RITE)									24	**28**
Crosslingual Link Discovery (Crosslink)									11	**10**
IR for Spoken Documents (SpokenDoc)									10	**12**
Math										**6**
Medical Natural Language Processing (MedNLP)										**12**

Figure 1: Evaluation Tasks from NTCIR-1 to NTCIR-10

to a query. 1CLICK-1 at NTCIR-9 focused on four types of queries such as celebrity, local, definition, and QA. 1CLICK-1 also defined the appropriate length of nuggets for different output devices such as Desktop PC (500 to 1000 characters) or Mobile (140 to 280 characters). Participating systems were expected to produce an answer string by combining relevant nuggets found in different documents.

1CLICK-2 extended its design in multiple ways. For example, new queries were created for both Japanese and English. The category of queries was also refined to artists, athletes, politicians, athletes, facility, geo references, definitions, and QAs. The authors explored semi-automatic extraction of iUnits. A total of 59 runs was submitted by 10 teams. Performance of submitted runs was measured by Weighted recall, S-measure, and T-measure, proposed by the organisers. Like INTENT-2, 1CLICK-2 was also designed to evaluate systems using 1CLICK-1 test collections. The details of their activities and findings can be found in the overview paper [4] and website[5].

2.4 PatentMT-2

Development of domain-specific technologies is equally valuable as open domain technologies in the context of Information Access. Patent information is one of the most prominent and actively investigated domains across the world. Unlike people would imagine, patent documents are intentionally ambiguously described, augmented with various kinds of graphical information such as product designs and chemical compounds, and trace of classification code across documents can be expensive. This poses many challenges to patent machine translation technologies which are now indispensable to global intellectual property strategies.

PatentMT is concerned with the development of state of the arts machine translation (MT) techniques tailored to patent documents. NTCIR is a pioneer evaluation forum of patent documents, and its MT tasks have been continued since NTCIR-7 in 2008. PatentMT-1 built parallels sentence pairs (1-3 Millions) in Chinese, English, and Japanese to evaluate the translation techniques between the three languages. PatentMT-1 also established the methods of human assessments of translation acceptability.

PatentMT-2 extended the test collections in multiple ways. Most notably, Patent Examination Evaluation was added to increase a level of practicality in performance measures of MT systems. Two experienced patent examiners cooperated to this evaluation. Like INTENT-2 and 1CLICK-2, PatentMT-2 also carried out evaluation using PatentMT-1 collections to measure chronological improvements. A total of 21 teams participated PatentMT-2. Performance of participating systems was measured by manual (Adequacy and Acceptability) and automatic (RIBES, BLEU, NIST) methods. The details of their activities and findings can be found in the overview paper [5] and website[6].

2.5 RITE-2

As suggested in the description of 1CLICK-2, Information Access (IA) technologies such as Information Retrieval sometime require a shallow level of text understanding. However, other types of IA technologies such as Question Answering and Summarisation can benefit from a deeper level of text understanding. Understanding meaning of texts has a range of degrees, and one such challenge addressed by RITE Task is to infer whether or not two statements, with different language use and linguistic features, indicate a similar idea. This is called *text entailment*, and is expected to greatly widen the application of Question Answering and Summarisation technologies.

For a given pair of texts, the inference of text entailment can be binary-class (BC) or multi-class (MC). In BC inference, researchers were asked to predict whether one text can be inferred from another text. In MC inference, researchers were asked to predict if the relationship between the texts fell into one of the four classes such as Paragraph (Bi-direction), Forward Entailment (Single direction), Contradiction, and Independent. RITE-1 established some of the foundation of evaluation methodologies based on Japanese and Chinese. RITE-1 also devised additional task using University entrance exam questions as a wild dataset for BC inference. The organisers also provided the evaluation resources for Question Answering applications.

[5] http://research.microsoft.com/1CLICK/

[6] http://ntcir.nii.ac.jp/PatentMT-2/

RITE-2 extended its resources by additional two subtasks such as Exam Search (finding documents that entail a text, rather than another text) and UnitTest task which allowed researchers to examine effects of detail linguistic featuers. Moreover, the MC categories were refined from RITE-1 and additional topics were created for QA subtask. A total of 215 runs was submitted by 28 teams. RITE-2 attracted the largest number of research groups in NTCIR-10. The performance of submitted runs was measured by *macroF1* (for text entailment), a variant of F-measure using Precision and Recall, and Mean Reciprocal Ranking (for QA). The details of their activities and findings can be found in the overview paper [6] and website[7].

2.6 SpokenDoc-2

Much of the research problems addressed by the NTCIR-10 tasks so far is based on written documents. Another type of textual documents that has great potential value as the source of Information Access is called *spoken documents*. Spoken documents are usually created from audio or video recordings of people's speech such as broadcasting programs, academic lectures, and all sorts of verbal presentations. Extraction of people's speech from the recordings is typically carried out by automatic speech recogniser (ASR) systems. Effective access to spoken documents poses significantly different types of challenges from those of written documents. First, the language use in spoken documents can be very colloquial that can affect term distribution and language processing. Second, the outputs of ASR systems can contain errors in their recognition of words that can create noisy documents.

Spoken document retrieval (SDR) addressed by SpokenDoc task is concerned with the retrieval of relevant spoken documents in response to a query. As a subtask of SDR, the organisers also offered the spoken term detection task which asked participant to fine the occurrences positions of query terms within spoken document collections. The document collections devised in SpokenDoc-1 at NTCIR-9 was mainly derived from academic lectures. In the spoken content retrieval subtask, participants were asked to find either lectures or passages that contained relevant information for a given query. SpokenDoc-1 established these basic designs of the spoken term detection task and spoken document retrieval task at NTCIR-9.

SpokenDoc-2 at NTCIR-10 extended the test collections in multiple ways. First, the organisers added a new document collection that was derived from academic presentations at a workshop. Also, a new subtask, the inexistent spoken term detection task was devised to encourage participants to develop techniques that can inform whether or not a term occurred in a collection at all. A total of 132 runs was submitted by 12 teams. The performance of submitted runs was measured by a series of MAP based evaluation metrics that consider speech-oriented units. The details of their activities and findings can be found in the overview paper [7] and website[8].

2.7 Math

One can argue that truly universal language is mathematical formulae. It is used to represent theoretical constructs in almost any disciplines, and mathematics are universally taught at all levels of education. Surprisingly, however, a means to accessing mathematical formulae written in texts is fairly under-developed. Math task in NTCIR-10 is the first to construct test collections for mathematical information access technologies. The organisers aimed to explore their evaluation methodology as a pilot task of NTCIR-10.

In the Math Retrieval subtask, 100,000 documents in Mathematics, Physics, and Computer Science were sampled from the arXive.org collection via arXMLiv Project which converted LaTeX sources of arXiv papers into XML (XHTML and *MathML*). The organisers devised three sub-categories in NTCIR-10: Formula Search, Full-Text Search, and Open Math Information Retrieval. In the Formula Search, participants were asked to find formulae that matched a formula query which contained query variables expressed with a particular annotation. The other two sub-categories were more similar to standard IR tasks.

The organisers created a total of 56 queries across the three subtasks. A total of 19 runs was submitted by 6 teams from USA, Germany, Czech Republic, and Japan. Performance of submitted runs was measured by formula based relevance assessments and metrics such as MAP and Precision at N. The Math task also had the Math Understanding subtask which aimed to extract natural language definitions of mathematical formulae from documents. The details of their activities and findings can be found in the overview paper [8] and website[9].

2.8 MedNLP

Although medical records have been thought to have great potential to mine profound information than description of medical history, no extensive work on language processing has been carried out due to its highly sensitive nature. MedNLP task, a pilot task in NTCIR-10, is the first attempt towards sophisticated natural language processing on medical record information written in Japanese. To avoid privacy issues, the organisers asked experienced physicians to compose fictional medical reports of imaginary patients. As a result, 50 such reports were created, consisting of over 3,000 sentences in 40,000 words. The reports were manually annotated with the information such as patients' complaint, diagnosis, age, name, sex, time of reports, and hospital data. This round of MedNLP focused on automatic annotation tasks but also welcomed exploratory tasks using the valuable dataset. The details of their activities and findings can be found in the overview paper [9] and website[10].

3. CONCLUSIONS

Ingwersen and Järvelin [10] suggested that Information Access can addressed in a series of contextual layers, from intra-document structures, inter-document context, user interaction context, social context, to infrastructural context. As can be seen from the description of the evaluation tasks in the previous section, the evaluation tasks at NTCIR-10 as a whole allowed us to investigate many of these contextual layers in Information Access. Also, the range of media types and domains addressed by the evaluation tasks were quite diverse (e.g., Web, Patent, Speech, Medical, Math). The specific applications of Information Access technologies

[7] http://www.cl.ecei.tohoku.ac.jp/rite2/

[8] http://www.cl.ics.tut.ac.jp/~sdpwg/index.php?ntcir10

[9] http://ntcir-math.nii.ac.jp/

[10] http://mednlp.jp/medistj-en/

developed by the participants include Web Search, Link Discovery, Multi-document Summarisation, Machine Translation, Text Entailment, Spoken Document Retrieval, Mathematical Formula Analysis, and Medical NLP. These achievements suggest that NTCIR is vital for and supported by heterogenous research communities. It should be emphasised that the various resources all tasks strived to create during NTCIR-10 will be released to the community and remain to be valuable resources for sustainable research and development in Information Access and related fields.

So, where do we go from here? NTCIR has pioneered many of significant evaluation methodologies as part of test collections such as graded relevance assessments, extensive manual relevance assessments, classification and translation tasks for patent documents, module-based evaluation for cross-language question answering, and continuous performance measures over multiple dataset. We are strived to maintain these strengths in future NTCIR activities. One area where collective efforts are desired for the development of evaluation methodology is the Big Data field. It is likely that the fundamental methodology developed in Information Access, developed via current and past NTCIR tasks, will still be valid in Big Data evaluation. Nevertheless, the range of data can be much more diverse than what we typically address. Therefore, there is ample room for investigating and developing new test collections for Big Data.

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APPENDIX

A. PARTICIPATING TEAMS

Table 2: NTCIR-10 Participating Teams (A-L)

Team ID	Organisation	Country/Region
AKBL	Akiba Laboratory, Toyohashi University of Technology	Japan
ALPS	ALPS-Lab. at University of Yamanashi	Japan
BBN	Raytheon BBN Technologies	USA
bcNLP	BCMI Lab, NLP group at Shanghai Jiao Tong University	China
BJTUX	Beijing Jiaotong University	China
BnO	National Institute of Informatics	Japan
BRKLY	Berkeley Text Retreival Research Group at University of California, Berkeley	USA
BUAA	BeiHang University, School of Computer Science & Engineering	China
cks01	The University of Tokyo	Japan
CYUT	Chaoyang University of Technology	Taiwan
DCU	Dublin City University	Ireland
DCUMT	Dublin City University	Ireland
EHIME	Ehime University	Japan
EIWA	Yamanashi Eiwa College	Japan
FLL	Fujitsu Laboratories Ltd.	Japan
FSE	DIMA, TU-Berlin	Germany
FUN-NRC	Future University Hakodate / National Research Council Canada	Canada / Japan
HCRL	Central Research Laboratory at Hitachi, Ltd.	Japan
HDU	Statistical Natural Language Processing Group, Institute for Computational Linguistics, Heidelberg University	Germany
HUKB	Knowledge Base lab. at Hokkaido University	Japan
Hultech	University of Caen Lower Normandy	France
HYM	Hayamiz Lab at Gifu University	Japan
IASL	Academia Sinica	Taiwan
IBM	IBM Japan, Ltd.	Japan
ICRCS	Harbin Institute of Technology Shenzhen Graduate School	China
III(III-IDEAS)	Institute for Information Industry	Taiwan
IMTKU	TamKang University	Taiwan
INCT	kane_lab at Ishikawa National College of Technology	Japan
ISTIC	Institute of Scientific and Technical Information of China	China
IWAPU	Iwate Prefectural University	Japan
JAIST	Japan Advanced Institute of Science and Technology	Japan
Japio	Japan Patent Information Organization (Japio)	Japan
JUNLP	Jadavpur University	India
KC99	National Kaohsiung University of Applied Sciences	Taiwan
KDR	Knowledge Discovery Research Laboratories at NEC Corporation	Japan
KECIR	Research Center for Knowledge Engineering at Shenyang Aerospace University	China
KitAi	Kyushu Institute of Technology	Japan
KLE	Knowledge and Language Engineering Laboratory, Pohang University of Science and Technology	Korea
KMI	Knowledge Media institute, The Open University	United Kingdom
KobeU	Kobe University	Japan
KSLP	Language Processing Laboratory at Kyungsung University	Korea
KUIDL	Katsumi Tanaka Lab, Digital Library, Graduate School of Informatics, Kyoto University	Japan
KWARC	Jacobs University	Germany
KYOTO	Kyoto University	Japan
LIA	University of Avignon	France
LSDP	Kyoto University	Japan

Table 3: NTCIR-10 Participating Teams (M-Y)

Team ID	Organisation	Country/Region
mcat	National Institute of Informatics	Japan
MCU	Ming-Chuan University	Taiwan
MIG	Department of Computer Science, National Chengchi University	Taiwan
MIRMU	Masaryk University, Faculty of Informatics	Czech Republic
msiknowledge	Mathematical Systems Inc.	Japan
MSINT	Microsoft Research Asia	China
MSRA	Microsoft Research Asia	China
nak	Keio University	Japan
NECLA	NEC Laboratories America	USA
niph	National Institute of Informatics/National Institute of Public Health	Japan
NKGW	Toyohashi University of Technorogy	Japan
NKI13	Toyohashi University of Technology	Japan
NSTDB	Nara Institute of Science and Technology	Japan
NTHU	National Tsing Hua University	Taiwan
NTITI	NTT Corporation / National Institute of Informatics	Japan
NTOUA	National Taiwan Ocean University	Taiwan
NTTD	NTT DATA Corporation	Japan
NUTKS	Nagaoka University of Technology	Japan
oka1	Okayama University	Japan
okapu	Okayama Prefectural University	Japan
OKSAT	Sato Laboratory, Osaka Kyoiku University	Japan
QUT	Queensland University of Technology	Australia
RDLL	Digital Library Lab, Ritsumeikan University	Japan
RWSYS	RWTH Aachen University / Systran	Germany / France
RWTH	RWTH Aachen University	Germany
RYSDT	Ryukoku University	Japan
SEM12	Toyohashi University of Technology	Japan
SHZU	Kai Laboratory, Shizuoka University	Japan
SinicaNLP	Institute of Information Science, Academia Sinica	Taiwan
SJTU	Shanghai Jiao Tong University	China
SKL	Sato and Komatani Laboratory, Nagoya University	Japan
SRI	SRI International	USA
TBFD	Team Big Four Dragons: Daido university Japan	
THCIB	Tsinghua University / Canon Information (Beijing) Co. Ltd	China
THK	Tohoku University	Japan
THUIR	Information Retrieval Group, Tsinghua University	China
THUIS	Intelligent Search Group, Tsinghua University	China
TKDDI	Tohoku University / KDDI R&D Laboratories	Japan
TORI	Tottori University	Japan
TRGTK	Torangetek Inc.	China
TSUKU	NLP on the Web, University of Tsukuba	Japan
TTOKU	Okumura-Takamura Laboratory, Tokyo Institute of Technology	Japan
TUTA1	The University of Tokushima	Japan
Udem	University of Montreal	Canada
UKP	Ubiquitous Knowledge Processing Lab, TU Darmstadt	Germany
ulab	Toyohashi University of Technology	Japan
UQAM	Natural language processing group, The Université du Québec à Montréal (UQAM)	Canada
ut	University of Twente	Japan
ut12	The University of Tokyo	Japan
UT-FX	Fuji Xerox co., Ltd. / University of Tokyo	Japan
whute	NLP Lab, Wuhan University	China
WSD	Waseda University	Japan
WUST	Wuhan University of Science and Technology	China
YLAB	Yamashita Laboratory, Ritsumeikan University	Japan
Yuntech	National Yunlin University of Science and Technology	Taiwan