The 2016 ACM-ICPC Asia Tsukuba Regional Contest

Contest Program

Host: University of Tsukuba, Japan
October 15-16, 2016

ACM International Collegiate Programming Contest
Asia Regional Contest 2016 in Tsukuba

International Congress Center EPOCHAL TSUKUBA
October 15–16, 2016

Organized by	- ACM-ICPC Asia Tsukuba Regional Contest Organizing Committee
	- International Information Science Foundation
	- University of Tsukuba
	- Ibaraki Prefectural Government
	- The City of Tsukuba
Supported by	- Ministry of Education, Culture, Sports, Science and Technology
	- Ministry of Economy, Trade and Industry
	- Ministry of Internal Affairs and Communications
	- Japan Science and Technology Agency (JST)
	- Japan Information Technology Services Industry Association (JISA)
	- Information Processing Society of Japan (IPSJ)
	- Japan Society for Software Science and Technology (JSSST)
ICPC Event Sponsor	- IBM
Industrial Sponsorship	- IBM Japan, Ltd.
	- LINE Corporation
	- Preferred Networks, inc.
	- Recruit Holdings Co., Ltd
	- AtCoder Inc.
	- Bunkyosha Co., Ltd.
	- DWANGO Co., Ltd
	- e-Seikatsu Co., Ltd.
	- Facebook, Inc.
	- Fixstars Corporation
	- Google Inc.
	- KLab Inc.
	- MUJIN, Inc.
	- NTT Communications Corporation
	- RecoChoku Co.,Ltd.
	- WORKS APPLICATIONS CO., LTD
	- Light Transport Entertainment, Inc.
	- M. SOFT CO., LTD.
	- Tata Consultancy Services Japan, Ltd.
	- Yahoo Japan Corporation

Welcome to ICPC and Tsukuba

The ACM International Collegiate Programming Contest (ACM-ICPC) is the largest and most prestigious programming contest for university students in the world. This year marks its 40th anniversary since its foundation in 1976, and the 128 teams selected from more than 13,000 teams of 2,736 universities in 102 countries competed in the ICPC World Finals held in Phuket, Thailand on May, 2016. While St. Petersburg State University in Russia was the winner again, many Asian teams have performed very well, which made us believe that a team from Asia will be the next winner of the ICPC World Finals. The next edition of the World Finals will be held in Rapid City, South Dakota, the United States of America, where 130 teams selected by regional contests shall compete; the Asia Tsukuba Regional Contest is one of such regional contests.

The University of Tsukuba is proud to host the ACM-ICPC Asia Regional Contest again in 2016, which is the third time in the 19-year history of ICPC in Japan. Tsukuba is the city of Science and Technology where many academic, governmental, and industrial research institutes have their major campuses, and new and emerging research results are being created every day. Among the institutes, the University of Tsukuba has the largest campus with full of front-runners in Computer Science and other fields.

For this year's contest, we have raised the number of competing teams in the Regional Contest from 42 to 45, which is a consequence of the growing interest and popularity in ICPC among university students; its preliminary contest, the Japan National Online First-Round Contest, has got the record-high number of participation with 384 teams from 93 universities and colleges, while 372 teams from 82 universities and colleges participated in the 2015 contest. The preliminary contest was held over the internet on June 24, 2016, and 39 teams has obtained the ticket to the Regional Contest. In addition to the teams from Japan, we have called for participation from abroad, and fortunately 6 teams from excellent Asian universities have responded to our call, resulting in the total of 45 selected teams being qualified.

The purpose of ICPC is not just solving many problems using programming skills, but also communicating with each other is an important ingredient of the contest. It is quite certain that all attendees of this contest including staff, volunteers, sponsors, and guests are big fans of ICPC that will lead to the friendly atmosphere under which everyone can communicate with each other easily and smoothly.

I would like to acknowledge the contribution of those people who helped us organize this contest; without their continual help, running this contest would have been totally impossible. My special thanks go to Prof. Katsuhiko Kakehi for various advice and encouragement, Prof. Takashi Chikayama for managing judge teams to prepare contest problems and handle submitted solutions, and all the members of the ICPC board, Organizing Committee, Judges and International Information Science Foundation for

their excellent service. The ICPC 'Secretaries' Team provided high-quality technical support and service, for which I can hardly imagine when they sleep. Thanks also go to all the volunteer staff including the ACM-ICPC Japanese Alumni Group and student staff from the University of Tsukuba. Dr. Yutaka Watanobe kindly offered his online judge system to hold an Online Open Contest in conjunction with the contest. The event sponsor IBM and 20 industrial sponsors provided invaluable financial support and also a rare opportunity for students to meet and talk with them in the banquet. This year, we got special supports from NTT Communications Corporation to provide high-quality network in the contest area, and DWANGO Co., Ltd to support live streaming of the contest via niconico video.

 Finally but not least, I would like to thank the contestants and coaches of the 45 teams participating in the contest, and also all the teams which participated in the preliminary contest.

I hope you all enjoy the contest in the beautiful city of Tsukuba.

Yukiyoshi Kameyama
Director, ACM-ICPC Asia Tsukuba Regional Contest 2016
Professor, Department of Computer Science, University of Tsukuba, Japan

Organizers

Director	Yukiyoshi Kameyama (University of Tsukuba)
Chief Judge	Takashi Chikayama (The University of Tokyo)
Organizing Committee Members	Toshiyuki Amagasa (University of Tsukuba)
	Claus Aranha (University of Tsukuba)
	Katsuhiko Kakehi (IISF, Waseda University, Co-Director)
	Yoshihiro Kanamori (University of Tsukuba)
	Tomoyuki Kaneko (The University of Tokyo, Technical Support Chair)
	Kazuhiko Kato (University of Tsukuba)
	Hiroshi Unno (University of Tsukuba)
	Rie Shigetomi Yamaguchi (The University of Tokyo, Publicity Chair)
	Fumihiko Yamaguchi (University of Nagasaki)
Judges	Kento Emoto (Kyushu Institute of Technology)
	Hironari Hayashizaki (Google Inc.)
	Kazuhiro Inaba (Google Inc.)
	Kiyoshi Ishihata (Meiji University)
	Yuki Kawata (Recruit Holdings Co., Ltd.)
	Koichi Kubota (Chuo University)
	Mitsuru Kusumoto (Preferred Networks, inc.)
	Takanori Maehara (Shizuoka University)
	Hidehiko Masuhara (Tokyo Institute of Technology)
	Kiminori Matsuzaki (Kochi University of Technology)
	Yoshihisa Nitta (Tsuda College)
	Etsuya Shibayama (The University of Tokyo)
	Tetsuro Tanaka (The University of Tokyo)
	Tomoharu Ugawa (Kochi University of Technology)
	Fumihiko Yamaguchi (University of Nagasaki)
ICPC Board	Katsuhiko Kakehi (IISF, Waseda University, ICPC Board Chair)
	Takashi Chikayama (The University of Tokyo)
	Kiyoshi Ishihara (Meiji University)
	Etsuya Shibayama (The University of Tokyo)
	Shingo Takada (Keio University)
	Rie Shigetomi Yamaguchi (The University of Tokyo)
Liaison Members	Tomoyuki Aotani (Tokyo Institute of Technology)
	Kenichi Asai (Ochanomizu University)
	Shigenori Ioroi (Kanagawa Institute of Technology)
	Takashi Ishio (Osaka University)
	Hiroshi Ishikawa (Niigata University of International and Information Studies)
	Teijiro Isokawa (University of Hyogo)
	Akira Uejima (Okayama University of Science)
	Takahiro Uchiya (Nagoya Institute of Technology)
	Toshiyuki Uto (Ehime University)
	Eiichi Osawa (Future University – Hakodate)
	Wataru Ohyama (Mie University)

	Tomio Kamada (Kobe University)
	Isao Kikumasa (Yamaguchi University)
	Takuya Kida (Hokkaido University)
	Akira Kitajima (Osaka Electro-Communication University)
	Takeo Kikushima (Okayama Prefectural University)
	Yoshimitsu Kuroki (Kurume National College of Technology)
	Ayumi Shinohara (Tohoku University)
	Yasunobu Sumikawa (Tokyo University of Science)
	Shingo Takada (Keio University)
	Yoshinori Takei (Nagaoka University of Technology)
	Takehiro Tazoe (Suzuka National College of Technology)
	Nari Tanabe (Tokyo University of Science, Suwa)
	Seiichi Tani (Nihon University)
	Hisao Tamaki (Meiji University)
	Haruaki Tamada (Kyoto Sangyo University)
	Satoshi Nakamura (Nara Institute of Science and Technology)
	Masaaki Niimura (Shinshu University)
	Hiroshi Ninomiya (Shonan Institute of Technology)
	Atsushi Nunome (Kyoto Institute of Technology)
	Takanobu Baba (Utsunomiya University)
	Hiromi Hiraishi (Kyoto Sangyo University)
	Satoru Fukami (Osaka Institute of Technology)
	Satoshi Fujita (Hiroshima University)
	Hiroyuki Minami (Hokkaido University)
	Tsunenori Mine (Kyushu University)
	Kouichi Mouri (Ritsumeikan University)
	Masaharu Yoshioka (Hokkaido University)
	Michifumi Yoshioka (Osaka Prefecture University)
	Emanuel Leleito (Nagoya University)
	Hironori Washizaki (Waseda University)
	Takuo Watanabe (Tokyo Institute of Technology)
	Yutaka Watanobe (The University of Aizu)
ICPC Secretaries	Hidehiko Abe
	Takuya Hashimoto
	Kentaro Imajo
	Takashi Imamichi
	Yusuke Izumi
	Kazuhiko Kakehi
	Tomoyuki Kaneko
	Shinya Kawanaka
	Dai Mikurube
	Shohei Nishida
	Yu Sugawara
	Hiroya Susuki
	Shuhei Takahashi
	Takashi Tayama
	Rie Shigetomi Yamaguchi (ICPC Secretaries Chair)

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Contest Information

ACM-ICPC Asia Tsukuba Regional Contest 2016
    http://www.cs.tsukuba.ac.jp/ICPC2016/
ACM-ICPC Japan Site
    http://icpc.iisf.or.jp/

Timetable

October 15 (Saturday)

14:00 – 14:45	Registration (Multi-Purpose Hall, Tsukuba International Congress Center EPOCHAL)
15:00 – 16:45	Opening and Practice Session (Multi-Purpose Hall)
17:30 – 19:30	Welcome Party (University Hall Restaurant, the University of Tsukuba)

October 16 (Sunday)

08:00 – 08:25	Registration (Multi-Purpose Hall)
08:45 – 13:45	Asia Regional Contest (Multi-Purpose Hall)
15:00 – 16:00	Commentaries on Problems (Convention Hall 300)
16:15 – 17:30	Awarding Ceremony (Convention Hall 300)
18:00 - 20:00	Banquet (Multi-Purpose Hall)

Opening (15:00 – 15:20, Oct. 15)

Director: Yukiyoshi Kameyama (University of Tsukuba)
1. **Message from the Director**
2. **Distinguished Service Award**
3. **Orientation**

Welcome Party (17:30 – 19:30, Oct. 15)

Chair: Yoshihiro Kanamori (University of Tsukuba)
1. **Greetings from Industrial Sponsors**
   Hiroki Yanagisawa (Research Staff Member, IBM Japan, Ltd.)
   Ryosuke Koyanagi (Engineer, IndeedTokyo, Recruit Holdings Co., Ltd.)
2. **Team Introduction**
   Claus Aranha (University of Tsukuba)

Commentaries on Problems (15:00 – 16:00, Oct. 16)

Chief Judge: Takashi Chikayama (The University of Tokyo)

Awarding Ceremony (16:15 – 17:30, Oct. 16)

Chairs: Yukiyoshi Kameyama and Claus Aranha (University of Tsukuba)
1. **Opening Remarks and Greetings**
   Katsuhiko Kakehi (International Information Science Foundation)
   Hajime Imase (Ibaraki Prefectural Government)
   Masataka Kambe (the City of Tsukuba)
   Hiroyuki Kitagawa (University of Tsukuba)
2. **Greetings from Industrial Sponsors**
   Kaori Namba (Senior Software Engineer, IBM Japan, Ltd.)
   Toru Nishikawa (CEO, Preferred Networks, inc.)
   Ichikawa Emi (Human Resource Development, LINE Corporation)
   Osamu Koga (Engineer, IndeedTokyo, Recruit Holdings Co., Ltd.)
   Guests from Sponsors
3. **Asia Leadership Award**
   Recipient: Katsuhiko Kakehi (Waseda University)
   Presenters: Rie Shigetomi Yamaguchi (the University of Tokyo)
                Kiyoshi Ishihata (Meiji University)
4. **Results and Awards**
   Announcement of Results and Awards
   Prizes from Ibaraki Prefecture Governor and the Mayor of Tsukuba
   Prizes from Gold Sponsors

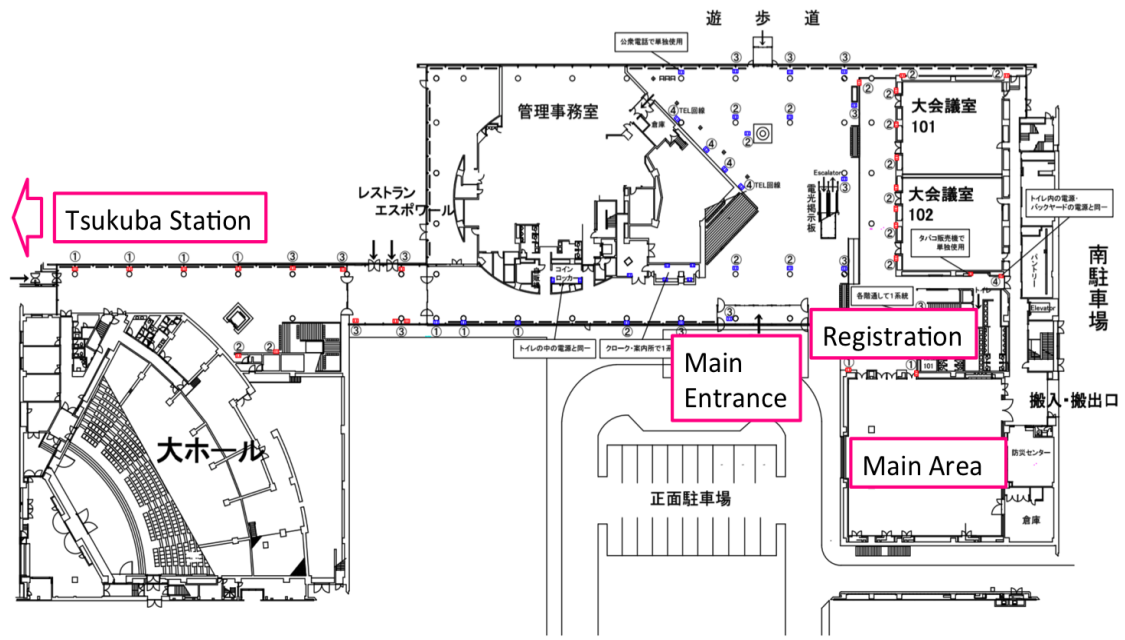**Banquet** (18:00 – 20:00, Oct. 16)

Chair: Toshiyuki Amagasa (University of Tsukuba)
1. **Opening Remark and Toast**
   Kazuhiko Kato (University of Tsukuba)
2. **Sponsors' Prizes**
   Prizes from Industrial Sponsors
3. **Closing**

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EPOCHAL
  Tsukuba International Congress Center
Ground Floor

遊 歩 道

公衆電話で単独使用

管理事務室

大会議室
101

大会議室
102

Tsukuba Station

レストラン
エスポワール

電光掲示板

南駐車場

Escalator

Registration

Main
Entrance

Main Area

大ホール

正面駐車場

搬入・搬出口

倉庫

Competing Teams

Institution	Team
Chiba University	Elysion
Harbin Institute of Technology	HIT_Viewer
Kanagawa Institute of Technology	ProconTrick
Kanazawa Technical College	teamFJ
Kanazawa University	SMTSolver
Keio University	Running
Kobe University	TEAM FUJISHIMA
Kogakuin University	kog
Kyoto University	breakAce
Kyoto University	joisndra
Kyushu University	t9qmib
Meiji University	Hutari.
Mie University	KNN Manhattan Distance
Nagoya Institute of Technology	lovablepleiad
Nagoya University	tebamoto
Nara Institute of Science and Technology	chasen_no_sato
National Chiao Tung University	NCTU_Railgun
National Institute of Technology, Akashi College	IruyanGaIruyan
National Institute of Technology, Okinawa College	ICT48
National Taipei University of Technology	Pedestrian5
National Taiwan University	\OAO/
Osaka Prefecture University	NeuralNetworkYMD
Osaka University	Do Touch Everything
Peking University	Crawl
Ritsumeikan University	miyazoy72
Ryukoku University	T2M
Saitama University	Maximum-Variant
Shanghai Jiao Tong University	New Meta
Shizuoka University	furu-tu
Shizuoka University	Mellorine
The University of Electro-Communications	nishiyon
The University of Tokyo	catsatmat
The University of Tokyo	Cxiv-Dxiv
The University of Tokyo	EfficientCoefficient
The University of Tokyo	sleep 18000
Tokyo Institute of Technology	konjou

Tokyo Institute of Technology	po
Tokyo University of Agriculture and Technology	nocow
Toyohashi University of Technology	meu amor
University of Aizu	575.cpp
University of Tsukuba	prinding–purantei–
University of Tsukuba	progLESS
University of Tsukuba	zerokugi
Waseda University	Up to you
Yokohama National University	Iroha

Statistics of the Regional Contests in Japan

Year	2014	2015	2016
Host University	Waseda U.	U. Tsukuba	U.Tsukuba
Location	Tokyo	Tsukuba	Tsukuba
Teams	40	42	45
Teams from Japan	36	35	39
Teams from abroad	4	7	6
Winner	U. Tokyo	Shanghai Jiao Tong U.	?
Winner's result in the next year's World Final	3rd Place (gold medal)	2nd Place (gold medal)	?