



2019 regionals

| icpc asia pacific & southeast

**icpc** international collegiate  
programming contest

**JET  
BRAINS**

icpc global  
programming  
tools sponsor



Keio University

## **ICPC Asia Yokohama Regional Contest 2019**

# **Contest Program**

Host: Keio University, Japan  
November 16-18, 2019

# International Collegiate Programming Contest Asia Yokohama Regional Contest 2019

Sanbo Hall and Kanagawa Kenmin Hall  
November 16-18, 2019

- Organized by
- ICPC Asia Yokohama Regional Contest Organizing Committee
  - International Information Science Foundation
  - Keio University
- Supported by
- Ministry of Economy, Trade and Industry
  - Ministry of Education, Culture, Sports, Science and Technology
  - Ministry of Internal Affairs and Communications
  - Japan Information Technology Services Industry Association (JISA)
  - Japan Science and Technology Agency (JST)
  - Information Processing Society of Japan (IPSJ)
  - Japan Society for Software Science and Technology (JSSST)
- ICPC Global  
Programming Tools  
Sponsor
- JetBrains
- Industrial Sponsorship
- BizReach, Inc.
  - Preferred Networks, Inc.
  - Huawei Technologies Japan K.K.
  - NEC Corporation
  - Google Japan G.K.
  - Light Transport Entertainment, Inc.
  - Tata Consultancy Services Japan, Ltd.
  - Akatsuki Inc.
  - DeNA Co., Ltd.
  - e-Seikatsu Co., Ltd.
  - Fixstars Corporation
  - freee K.K.
  - IBM Japan, Ltd.
  - KLab Inc.
  - LegalForce, Inc.
  - LINE Corporation
  - NTT Communications Corporation
  - ON Semiconductor
  - Opt, Inc.
  - Retrieva, Inc.

## **Welcome to ICPC Asia Yokohama Regional Contest!**

It is a great pleasure to welcome all of you to the ICPC Asia Yokohama Regional Contest.

Keio University is proud to host the Asia Regional Contest for the second consecutive year, third time overall. Since 2006, when Keio first hosted this contest, ICPC has grown immensely. Last year, 52,709 contestants from 3233 universities in 110 countries competed, culminating in the World Finals where Moscow State University finished first for the second straight year.

On July 12, a record 495 teams from 101 colleges and universities all over Japan competed in the Japan Online Contest. This is the second time that more than 400 teams participated. 55 teams from 42 colleges and universities advanced to the ICPC Asia Yokohama Regional Contest. An additional ten teams from China, Hong Kong, Indonesia, Singapore, South Korea, and Taiwan join the domestic teams bringing the total to 65 teams. This is also the largest number of teams to participate in a Japanese regional contest. They will vie for the rights to go to the World Finals which will be held in Moscow, Russia from June 21 – 26, 2020.

We believe that this contest will be a great opportunity for participating students to demonstrate their programming skills acquired through their daily studies. We also believe that participation in this contest will be a wonderful opportunity for students of varying backgrounds to interact and exchange ideas with each other.

This contest would not have been possible without the contribution of many people. We would first like to thank Dr. Takanori Maehara and the judge team for spending countless hours preparing the contest problems. The ICPC Board oversaw the contest organization. The International Information Science Foundation handled many behind-the-scene tasks. The ICPC ‘Secretaries’ Team provided high-quality technical support and service. Thanks also go to all the volunteer staff including the ICPC Japanese Alumni Group and student staff from Keio University. Dr. Yutaka Watanobe kindly offered his online judge system to hold an Online Open Contest in conjunction with the contest. The 20 industrial sponsors provided invaluable financial support as well as an opportunity for students to meet and talk with them at the banquet. Among the industrial sponsors, NTT Communications Corporation provided high-quality network in the contest area. Last but not least, this contest would not even exist without all the participants, so a special thanks go to all participants at the Regional Contest AND those who unfortunately could not advance.

Good luck to all of this year’s regional contest participants!

Shingo Takada  
Director, ICPC Asia Yokohama Regional Contest 2019  
Professor, Department of Information and Computer Science, Keio University, Japan

## Organizers

Director	Shingo Takada (Keio University)
Chief Judge	Takanori Maehara (Riken)
Organizing Committee Members	Hideharu Amano (Keio University) Claus Aranha (University of Tsukuba) Issei Fujishiro (Keio University) Katsuhiko Kakehi (IISF, Waseda University, ICPC Board Chair) Hiroshi Shigeno (Keio University) Fumio Teraoka (Keio University) Yutaka Watanobe (The University of Aizu) Takahiro Yakoh (Keio University) Rie Shigetomi Yamaguchi (The University of Tokyo)
Judges	Takashi Chikayama (The University of Tokyo) Kento Emoto (Kyushu Institute of Technology) Akifumi Imanishi (Preferred Networks, Inc) Kazuhiro Inaba (Google Japan G.K.) Kiyoshi Ishihata (Meiji University) Yoichi Iwata (National Institute of Informatics) Yuki Kawata (Indeed Japan) Masatoshi Kitagawa (Waseda University) Koichi Kubota (Chuo University) Mitsuru Kusumoto (Preferred Networks, Inc.) Kiminori Matsuzaki (Kochi University of Technology) Yoshihisa Nitta (Tsuda University) Tomohiro Oka (Google Japan G.K.) Etsuya Shibayama (The University of Tokyo) Tomoharu Ugawa (Kochi University of Technology) Fumihiko Yamaguchi (University of Nagasaki)
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Liaison Members	Claus Aranha (University of Tsukuba) Kenichi Asai (Ochanomizu University) Takanobu Baba (Utsunomiya University) Akihiro Fujihara (Chiba Institute of Technology) Satoshi Fujita (Hiroshima University) Satoru Fukami (Osaka Institute of Technology) Hiromi Hiraishi (Kyoto Sangyo University) Yutaka Hori (Keio University) Atsushi Igarashi (Kyoto University) Shigenori Iroi (Kanagawa Institute of Technology) Hiroshi Ishikawa (Niigata University of International and Information Studies) Teijiro Isokawa (University of Hyogo) Tomio Kamada (Kobe University) Takuya Kida (Hokkaido University) Isao Kikumasa (Yamaguchi University)

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	Takeo Kikushima (Okayama Prefectural University) Akira Kitajima (Osaka Electro-Communication University) Yoshimitsu Kuroki (Kurume National College of Technology) Hidetoshi Mino (University of Yamanashi) Yuichiro Miyamoto (Sophia University) Yuichi Nakai (National Institute of Technology, Akashi College) Masaaki Niimura (Shinshu University) Hiroshi Ninomiya (Shonan Institute of Technology) Atsushi Nunome (Kyoto Institute of Technology) Kenya Sato (Doshisha University) Hiroaki Sawano (Aichi Institute of Technology) Ayumi Shinohara (Tohoku University) Nobuhiro Shirai (Mie University) Yasunobu Sumikawa (Tokyo Metropolitan University) Haruaki Tamada (Kyoto Sangyo University) Seiichi Tani (Nihon University) Takehiro Tazoe (Suzuka National College of Technology) Hiroyuki Tominaga (Kagawa University) Akira Uejima (Okayama University of Science) Hironori Washizaki (Waseda University) Takuo Watanabe (Tokyo Institute of Technology) Yutaka Watanobe (The University of Aizu) Masaharu Yoshioka (Hokkaido University) Michifumi Yoshioka (Osaka Prefecture University)
ICPC Secretaries	Hidehiko Abe Yuichiro Hanada Takuya Hashimoto Takashi Imamichi Yusuke Izumi Shinya Kawanaka Yoshiaki Matsuoka Shohei Nishida Yu Sugawara Shuhei Takahashi Takashi Tayama Hiroshi Yamaguchi Rie Shigetomi Yamaguchi (ICPC Secretaries Chair)

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**International Information Science Foundation**

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**Contest Information**

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ICPC Asia Yokohama Regional Contest 2019  
<https://icpc.iisf.or.jp/2019-yokohama/asia-yokohama-regional-contest-2019/>  
ICPC Japan Site <http://icpc.iisf.or.jp/>

## Timetable

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**November 16 (Sat) Yokohama Sanbo Hall (横浜産貿ホール)**

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- 13:00 – 14:00    Registration
- 14:00 – 16:30    Opening, Orientation, and Rehearsal
- 16:30 – 18:00    Team Introduction

(Dinner on your own.)

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**November 17 (Sun) Yokohama Sanbo Hall (横浜産貿ホール)  
& Kanagawa Kenmin Hall (神奈川県民ホール)**

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- 08:40 – 09:10    Contest Check-in (Yokohama Sanbo Hall)
- 09:30 – 14:30    Asia Regional Contest (Yokohama Sanbo Hall)

Note: There will be no space for coaches within the Sanbo Hall.  
Coaches are requested to go to Kanagawa Kenmin Hall.

- 15:10 – 15:50    Commentaries on Problems (Kanagawa Kenmin Hall)
- 15:50 – 16:50    Award and Closing Ceremony (Kanagawa Kenmin Hall)
- 17:30 – 19:30    Closing Party (Yokohama Sanbo Hall)

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**November 18 (Mon)**

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- 10:00 – 17:00    Office tour (Only for those who have registered)

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**Opening** (14:00 – 14:20, Nov. 16; Yokohama Sanbo Hall)

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Director: Shingo Takada (Keio University)

1. **Message from the Director**
2. **Greetings from Keio University**  
Eiji Okada (Dean, Faculty of Science and Technology, Keio University)
3. **Orientation**

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**Team Introduction** (16:30 – 18:00, Nov. 16; Yokohama Sanbo Hall)

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Chair: Shingo Takada (Keio University)

1. **Distinguished Service Award**
2. **Team Introduction**

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**Commentaries on Problems** (15:10 – 15:50, Nov. 17; Kanagawa Kenmin Hall)

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Chief Judge: Takanori Maehara (Riken)

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**Award and Closing Ceremony** (15:50 – 16:50, Nov. 17; Kanagawa Kenmin Hall)

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Chairs: Shingo Takada (Keio University) and Claus Aranha (University of Tsukuba)

1. **Opening Remarks and Greetings**  
Katsuhiko Kakehi (Chair, International Information Science Foundation)
2. **Greetings from Diamond, Platinum, and Gold Sponsors**  
Kohji Liu (Engineer, Preferred Networks, Inc.)  
Shinpei Tomisato (Recruitment Marketing Group Manager, BizReach, Inc.)  
Makoto Minegishi (Digital Business Platform Planning Division Senior Manager,  
NEC Corporation)  
Naoya Iwamoto (Senior Engineer, Huawei Technologies Japan K.K.)  
Yuta Kanno (HR Talent Acquisition, Tata Consultancy Services Japan, Ltd.)  
Yuma Inoue (Software Engineer, Google Japan G.K.)
3. **Results and Awards**  
Announcement of Results and Awards
4. **Closing Remarks**

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**Closing Party** (17:30 – 19:30, Nov. 17; Yokohama Sanbo Hall)

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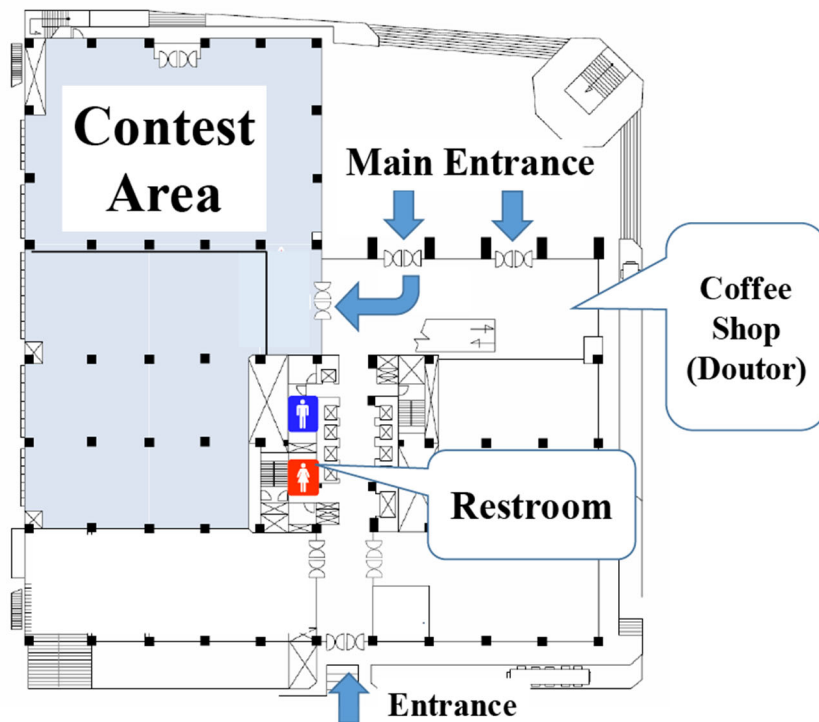
Chair: Shingo Takada (Keio University)

0. **Commemorative Photo**
1. **Sponsors' Prizes**  
Prizes from Industrial Sponsors
2. **Party Time!**

### Map of Area



### Yokohama Sanbo Hall





## Participating Teams

Team	Institution
choco-yokan	Aichi Institute of Technology
HONG_CARRIES_RETIRED_CROCODILE_?	Ajou University
BigCrunch	Aoyama Gakuin University
Lumen Fidei	Bina Nusantara University
Ham Sandwich	Chuo University
four-t	Hokkaido University
Megido	Hokkaido University
HoseiKoganeiA	Hosei University
Jaister	Japan Advanced Institute of Science and Technology
chmod rw-rw---x	Keio University
choKOdai	Keio University
Lesages	Keio University
MMX	Kobe University
Arattarius	Kyoto Sangyo University
earlybird	Kyoto University
Heno World	Kyoto University
SleepingDragon	Kyoto University
TigerSone	Kyoto University
konjo_jam	Kyushu University
Integrated Quality	Meiji University
unlimited nya-n	Mie University
SataniCho	Muroran Institute of Technology
misawa_san	Nagoya Institute of Technology
aaaa	Nagoya University
Yazaten	Nara Institute of Science and Technology
NCTU_Pusheen	National Chiao Tung University
Solarson	National Institute of Technology, Kitakyushu
chocobo3 team	National Institute of Technology, Kurume College
waynedisonitau123	National Taiwan University
Eeveelution	National Tsing Hua University
Pandamiao	National University of Singapore
Trumpet	Osaka University
God and his toolmen	Peking University
UnRated	Ritsumeikan University
seica on the border	Saitama University
dango	Seikei University
Aerial Ace	Shanghai Jiao Tong University

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Chicks	Shizuoka Institute of Science and Technology
tapu	Shizuoka University
baby shark~ dururu~duru~	Soongsil University
__SEL2__	Sophia University
Play Energy	The Chinese University of Hong Kong
sushi	The University of Electro-Communications
catsatmat	The University of Tokyo
okimochi	The University of Tokyo
UT a.k.a Is	The University of Tokyo
abaababaabaab	Tohoku University
Aobayama_dropout	Tohoku University
eiyaonari	Tokyo Institute of Technology
mickytheta	Tokyo Institute of Technology
unlimited greedy	Tokyo Institute of Technology
triC	Tokyo Metropolitan University
kibikarc	Tokyo University of Agriculture and Technology
define_mod_31536000	Tokyo University of Science
light blues	Tokyo University of Technology
DJ DOL	Toyohashi University of Technology
dp_learning	Toyota Technological Institute
MM	University of Aizu
UKUNICHIA	University of Aizu
tojimbo	University of Fukui
snuke	University of Tsukuba
thx_yucpc	University of Yamanashi
CoprimE	Waseda University
PICOPICOPON	Waseda University
Eldorado	Yokohama National University