Moscow Workshops ICPC

WHAT IS ICPC?

ICPC – competitive programming Olympic Games

ICPC is the biggest annual multi-tiered programming competition among the universities of the world*.

Young talents from Europe, North and South America, Asia, Africa, and Australia are involved in solving the most complicated problems in conditions of limited time

International Collegiate Programming Contest is the leading global platform for academic and industrial partners and universal professional community. It attracts attention to IT industry opportunities and shows possibilities for coming IT Professionals generation which is aimed at perfection

* Since 1977

BY THE BEGINNING OF 2019, THE INTERNATIONAL ICPC-COMMUNITY IS

6 continents

115 countries

3,233 universities

5,411 coaches

52,709 students

320,000+ alumni

530 sites

30,000+ competing on-site

since 1970 history impact

OUTSTANDING ICPC ALUMNI ARE NOW THE LEADERS OF IT-INDUSTRY

Adam D'Angelo

Co-founder of Quora, Former CYO of Facebook, Silver medal on ICPC 2004

Matei Zaharia

Professor in Stanford University, Co-founder of Databricks, Gold medal on ICPC World Finals 2005

Tony Hsieh

CEO Zappos, Founder of LinkExchange, World winner on ICPC 1993

Nikolai Durov

Co-founder of VK and Telegram, Winner of ICPC World Finals 2000

What does the ICPC-community bring?

to students:

development of programming and algorithmic problem solving skills

opportunity to fulfill personal and professional ambitions

rapid career start

to partners:

market expansion of highly qualified professionals in the IT-industry

HR development of the brand/ company

presence in international educational agenda

Employment of the ICPC participants 1999-2017

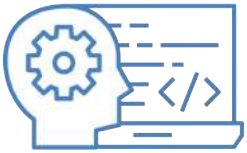
(survey covered 30.000 participants from 320.000 ICPC alumni)

Management

1 506 founders and co-founders
519 CEOs
1 194 presidents and deputy
511 business owners
250 CTOs
139 executive directors
571 partners
65 chairmen of the board of directors
260 CEOs
766 directors of educational projects
683 senior employees
3 559 directors
216 lawyers
3 663 scientist-researchers

Engineers

20 090 engineers
17 932 software engineers / developers

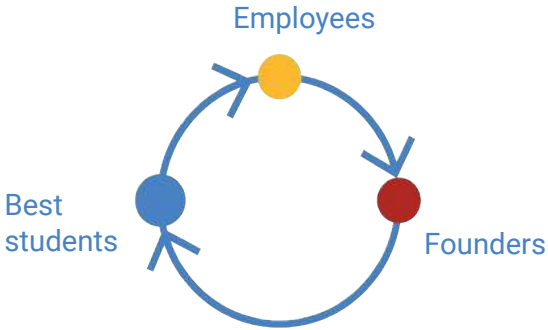


Research & Development

2 934 professors

1 652 Data Scientists / Data Engineers

Interaction in ICPC



ICPC alumni employed by TOP companies

(survey covered 30 000 participants from 320 000 ICPC alumni)

ABB (24)
Accenture (271)
Adobe (179)
Agoda (31)
AIG (27)
Airbnb (64)
Akamai (22)
Alibaba (44)
Amazon (1378)
Amdocs (29)
American Express (35)
Amgen (20)
Apple (259)
Applied Materials (26)
Arcesium (22)
Arista Networks (33)
ARM (29)
AT&T (36)
Atlassian (22)
Autodesk (20)
Baidu (52)
Bain & Company (32)
Merrill Lynch (103)
Barclays (79)
BlackRock (33)
Bloomberg (125)
Boeing (47)
Booking.com (53)
Booz Allen Hamilton (28)
Bosch (29)
BP (26)
Broadcom (30)
Bukalapak (28)

CA Technologies (25)
Capgemini (64)
Capital One (83)
Cerner Corporation (60)
CGI (36)
Cisco (182)
Citadel (29)
Citi (144)
Citrix (21)
CodeNation (20)
Cognizant (137)
Comcast (32)
Credit Suisse (51)
Cummins Inc. (22)
D. E. Shaw & Co. (25)
Dell (77)
Deloitte (227)
Deutsche Bank (75)
Directi (72)
Dropbox (50)
eBay (42)
Electronic Arts (EA) (33)
Eli Lilly (22)
EMC (22)
EPAM Systems (43)
Epic (107)
Ericsson (64)
Expedia (63)
ExxonMobil (27)
EY (181)
Facebook (688)
FactSet (30)
FedEx (26)

Fidelity (46)
Flipkart (102)
Ford Motor Company (38)
Fujitsu (21)
Garmin (22)
GDP Labs (39)
GE (121)
General Dynamics (25)
General Motors (46)
Goldman Sachs (264)
Google (2178)
Groupon (27)
HCL Technologies (47)
Hewlett Packard (107)
Hitachi (25)
Honeywell (32)
HSBC (67)
Huawei (55)
IBM (401)
ICICI Bank (25)
Indeed.com (32)
Informatica (30)
Infosys (148)
InMobi (25)
Intel (253)
Intuit (44)
IPvision Canada Inc (26)
Jetbrains (20)
Johnson & Johnson (31)
JPMorgan Chase (225)
KPMG (104)
Larsen & Toubro (27)
Leidos (23)

LG (25)
LinkedIn (168)
Lockheed Martin (53)
McKinsey & Company (79) Media.Net (31)
Medtronic (23)
Mentor Graphics (20)
Merck (34)
Microsoft (1270)
Mitsubishi (20)
Morgan Stanley (164)
Mozilla (25)
NASA (21)
NCR Corporation (21)
NEC (25)
NetApp (22)
Netflix (24)
Nike (22)
Nokia (38)
Nomura (30)
Northrop Grumman (57)
Novartis (29)
Nutanix (25)
NVIDIA (78)
Ola (ANI Technologies Private Ltd) (26)
Oracle (289)
Palantir (53)
PayPal (59)
Paytm (38)
Philips (39)
Pinterest (42)
Procter & Gamble (25)

Prudential (22)
PwC (197)
Qualcomm (147) Quora(14)
Rakuten (25)
Raytheon (43)
RBC (31)
Red Hat (41)
Riot Games (22)
Robert Bosch (22)
Rubrik, Inc. (23)
Salesforce (91)
Samsung (319)
SAP (136)
SAS (25)
Schlumberger (27)
Schneider Electric (23)
Shell (29)
Siemens (80)
Snap Inc. (77)
Sony (32)
Spotify (29)
Sprinklr (22)
Square (36)
StandardCharteredBank(32)
Sumo Logic (20)
Symantec (30)
Synopsys (36)
Tableau Software (22)
Target (40)
Tata (241)
Tencent (26)
Tesla (35)

The Boston Consulting Group (44)
Thermo Fisher Scientific (29)
Thomson Reuters (52)
Tokopedia (36)
Tower Research Capital (32)
Toyota (20)
Traveloka (76)
Twitter (59)
Two Sigma (38)
U.S. Air Force (26)
Uber (210)
UBS (40)
UnitedHealth Group (44)
Upwork (23)
USAA (25)
Verizon (56)
Visa (63)
VMware (83)
Vodafone (24)
Walmart (123)
Walt Disney (23)
Wells Fargo (83)
Wipro (63)
Works Applications Co., Ltd. (35)
WorldQuant (22)
Yahoo (51)
Yandex (88)
Yelp (27)
YouTube (22)
Zoho Corporation (29)
ZS Associates (27)

MOSCOW WORKSHOPS ICPC

International educational project of competitive programming

2200 participants in **7** years

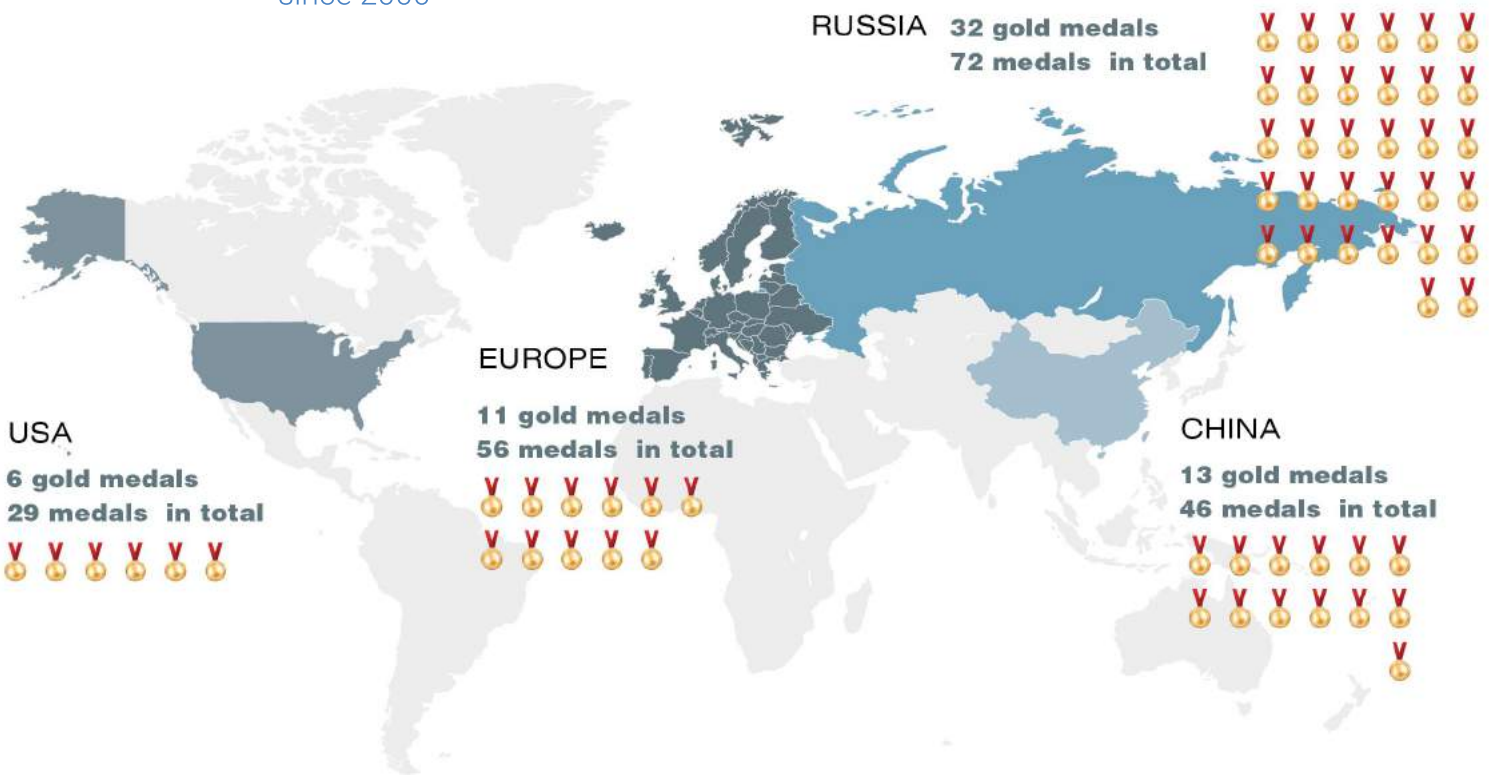
Moscow Workshops ICPC

Moscow Workshops ICPC (MW) as an international educational project for collegiate programmers was founded on MIPT campus in 2012.

MW is experienced in training ICPC champions and in organizing large sport programming events, which allows us to shine the spotlight of academia and industry on the next generation of computing professionals – the ICPC contestants.

ICPC WORLD FINALS MEDALISTS

since 2000



BY MEANS OF MOSCOW WORKSHOPS WE INFLUENCE THE OUTCOMES OF THE WORLD CHAMPIONSHIP SCORE

MEDALISTS OF THE WORLD FINALS ICPC THAT ATTENDED MOSCOW WORKSHOPS

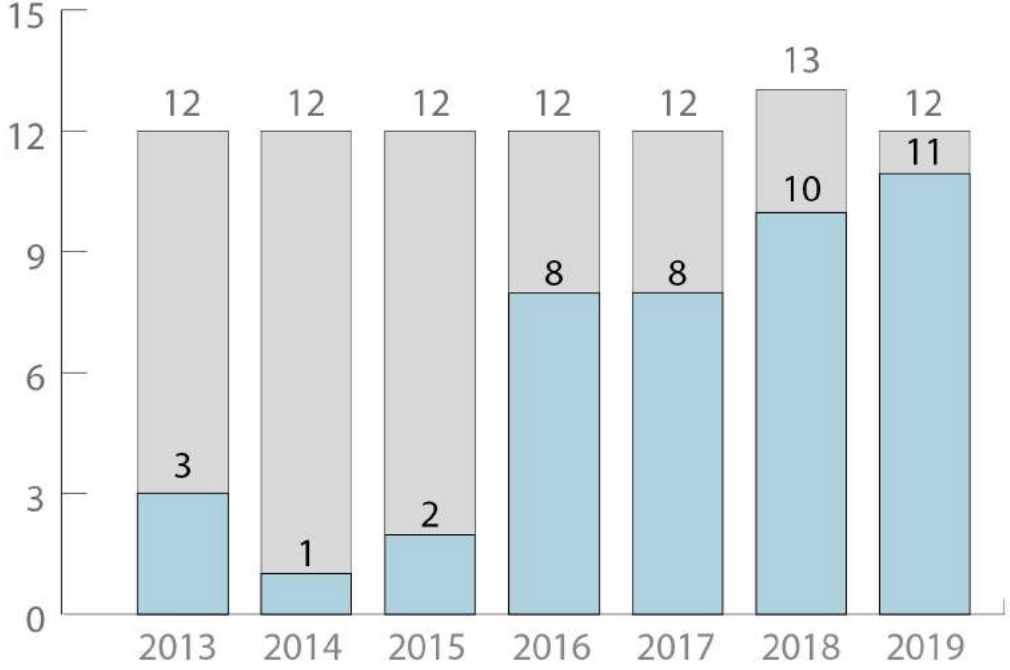
10 out of 13 medalists participated in MW in 2018

Place	Name	Solved	Time
1	MSU	9	1427
2	MIPT	8	960
3	Peking U	8	1190
4	Tokyo U	8	1566
5	Seoul U	7	719
6	NSW U	7	855
7	Tsinghua U	7	1002
8	Jiao Tong U	7	1016
9	ITMO U	7	1086
10	U of C Florida	7	1133
11	MIT	7	1144
12	Vilnius U	7	1174
13	UrFU	7	1234

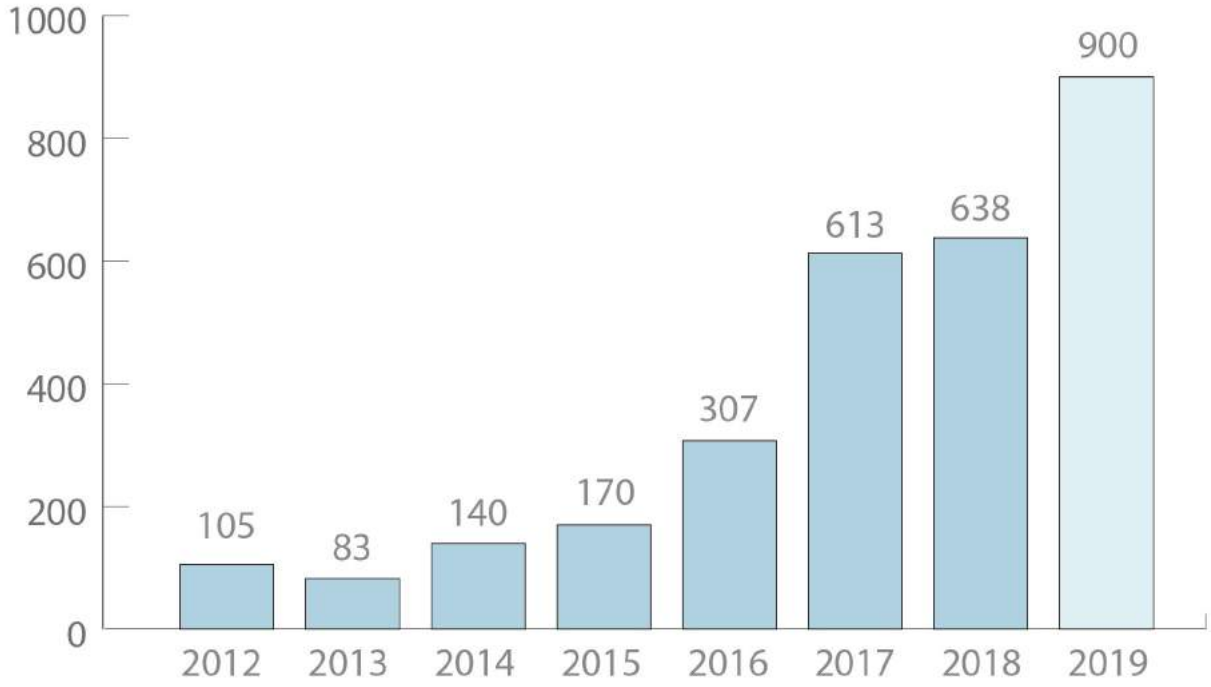
11 out of 12 medalists participated in MW in 2019

Place	Name	Solved	Time
1	MSU	10	1531
2	MIT	9	1191
3	Tokyo U	9	1386
4	Warsaw U	8	891
5	National Taiwan U	8	1179
6	Wroclaw U	8	1200
7	Seoul National U	7	783
8	KimChaek U	7	803
9	Sharif U	7	923
10	MIPT	7	954
11	HSE	7	990
12	Hong Kong U	7	1057

Number of teams participated in Moscow workshops that have been awarded with medals at icpc world finals



The number of Moscow workshops participants per year



MOSCOW WORKSHOPS ICPC MISSION

Our mission is to help talented students to become leaders of technological breakthroughs

RECENT CAMPS OF MOSCOW WORKSHOPS ICPC

Internal workshops

External workshops

Spring 2016
Countries: 9
Universities: 26
Teams: 38
Participants: 111

Spring 2017
Countries: 19
Universities: 44
Teams: 60+7*
Participants: 169
*distantly

Spring 2018
Countries: 19
Universities: 46
Teams: 58+3*
Participants: 176
*distantly

Spring 2019
Countries: 19
Universities: 41
Teams: 52+5*
Participants: 160
*distantly

Summer
Countries: 2
Universities: 7
Teams: 7
Participants: 45

Fall 2012
Countries: 4
Universities: 10
Teams: 20
Participants: 60

Fall 2013
Countries: 5
Universities: 17
Teams: 28
Participants: 83

Fall 2014
Countries: 8
Universities: 25
Teams: 49
Participants: 140

Fall 2015
Countries: 11
Universities: 35
Teams: 59
Participants: 170

Fall 2016
Countries: 13
Universities: 40
Teams: 67
Participants:196

Fall 2017
Countries: 17
Universities: 39
Teams: 60+4*
Participants: 195
*distantly

Fall 2018
Countries: 15
Universities: 49+2*
Teams: 69+4*
Participants: 202
*distantly

Barcelona 2017
Countries: 17
Universities: 22
Teams: 31
Participants: 82

Barcelona 2017 II
Countries: 30
Universities: 53
Teams: 59
Participants: 147

Barcelona 2018
Countries: 18
Universities: 27
Teams: 38
Participants: 98

Grodno 2017
Countries: 3
Universities: 4
Teams: 8
Participants: 20

Grodno 2018
Countries: 4
Universities: 7
Teams: 13
Participants: 30

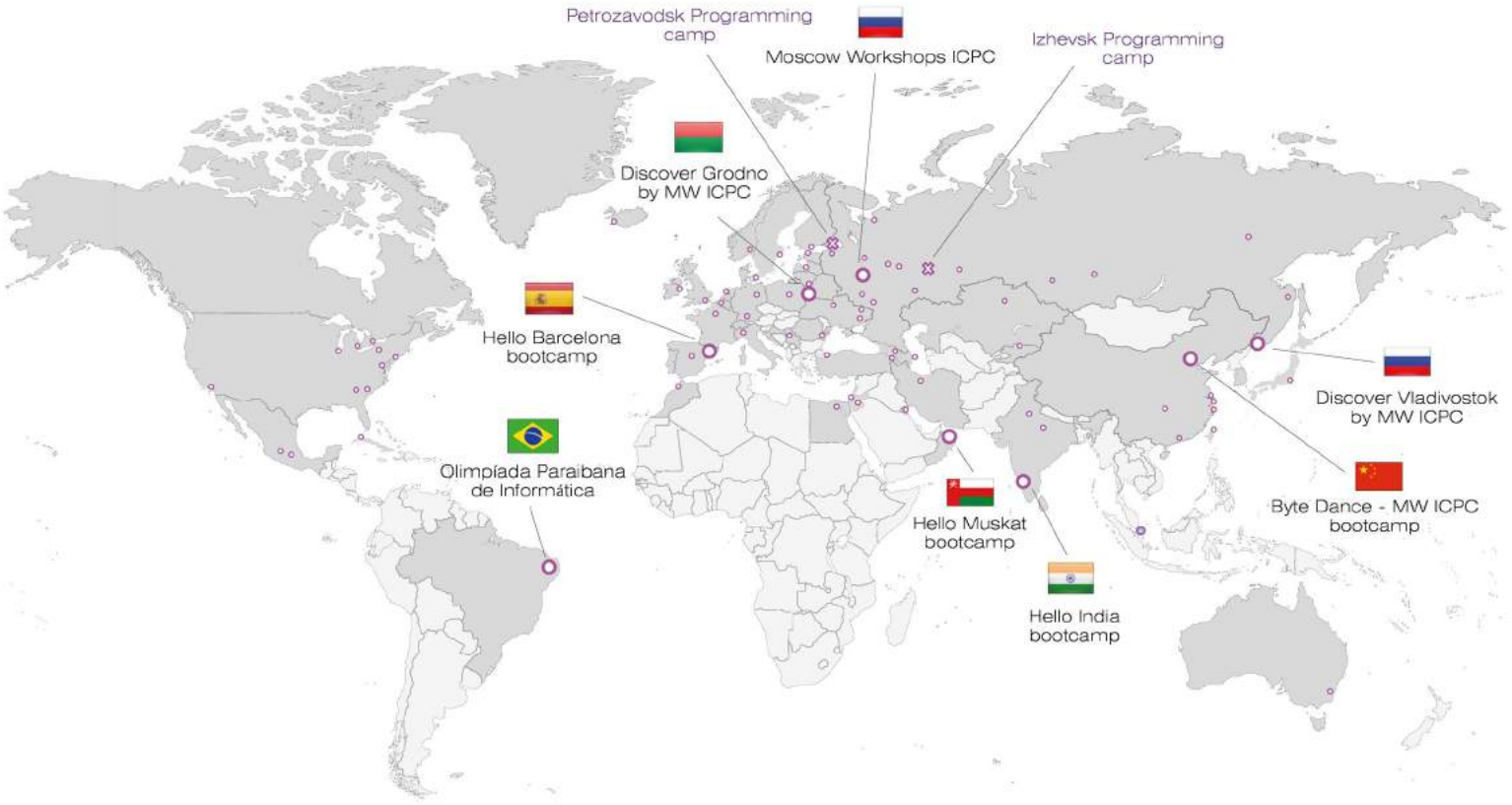
India 2018
Countries: 7
Universities: 23
Teams: 40
Participants: 103

Vladivostok 2018
Countries: 2
Universities: 8+1*
Teams: 12
Participants: 29
*distantly

Pekin 2019
Countries: 15
Universities: 14
Teams: 50
Participants: 150

Muskat 2019
Countries: 15
Universities: 24
Teams: 38+2*
Participants: 87
*distantly

GEOGRAPHY OF MOSCOW WORKSHOPS ICPC PARTICIPANTS



PARTICIPATING UNIVERSITIES (203 UNIVERSITIES FROM 55 COUNTRIES)

Europe (53 universities)
among them:

- University College London (London, United Kingdom)
- University College London Technical University of Munich (Munich, Germany)
- Utrecht University (Utrecht, Netherlands)
- University of Helsinki (Helsinki, Finland)
- Lund University (Lund, Sweden)
- University of Copenhagen (Copenhagen, Denmark)
- Ecole Polytechnique (Paris, France)

Moscow (12 universities)
among them:

- Lomonosov Moscow State University
- Moscow Institute of Physics and Technology
- Higher School of Economics

Asia (75 universities)
among them:

- Tsinghua University (Beijing, China)
- Seoul National University (Seoul, South Korea)
- Peking University (Beijing, China)
- University of Tokyo (Tokyo, Japan)
- The Chinese University of Hong Kong (Hong Kong, China)

Africa (2 universities)
among them:

- Al Akhawayn University in Ifrane (Ifrane, Morocco)

South America (4 universities)
among them:

- Universidade Federal do Rio Grande do Norte (Natal,Brazil)
- Pontifical Catholic University of Rio de Janeiro (Rio de Janeiro, Brazil)

North America (20 universities)
among them:

- Massachusetts Institute of Technology (Cambridge, USA)
- University of Pennsylvania (Philadelphia, US)
- Cornell University (Ithaca, US)
- University of Waterloo (Waterloo, Canada)

Russian Regions (36 universities)
among them:

- Kazan Federal University (Beijing, China)
- Saint Petersburg State University
- Novosibirsk State University
- ITMO University (Saint Petersburg)

Australia (1 university)

- University of New South Wales (Sydney)

NEW INDUSTRIAL PARTNER

ByteDance 字节跳动

ByteDance - Moscow Workshops ICPC Programming Camp, February 2019

ByteDance is a large Chinese Internet technology company operating machine learning-enabled content platforms such as

TikTok popular media app for creating and sharing short videos **TikTok**

头条 TOUTIAO news and information content platform **Toutiao** (the most expensive startup in the world)

ByteDance estimated market value amounts to 75 billion US dollars

ICPC WORLD FINALS 2020 IN MOSCOW

More than 1500 people participate in the World Finals: teams, coaches, university representatives, leading IT-companies representatives, guests and teams' fans.

PROGRAM:

5 days is the duration of the finals

2 days of competition

Business program

Tech-show

Cultural program
(opening and closing ceremonies, sightseeing)

– Participants are accommodated in the best hotels of the city

– Full board meals and guided sightseeing tours are available

– The host provides participants with an exciting program that introduces cultural heritage sites and attractions. Usually participants and guests stay in the city for 2 more days after the official part finishes

PLANS FOR THE 2019 SEASON: UNDERTAKEN AND FUTURE WORKSHOPS

Workshop Name	Dates	No of Participants	Level
ByteDance Winter Programming Camp	February 15-23	150	A, B
Moscow ICPC Pre-Finals Workshop 2019	March 9-15	160	A, B
Hello Muscat Programming Bootcamp	March 9-15	87	A, C
Discover Vladivostok 2019	**July 6-13**	**80**	**A, B/C**
Discover Grodno 2019	July 7-14	40	B, C
Discover Baikal 2019	September 7-14	80	C, D
Discover Singapore 2019	September 21-28	100	B, C
Discover Riga 2019	October 5-13	60	A, B/C
Moscow ICPC Fall Workshop 2019	November 5-14	200	A, B

Moscow Workshops ICPC

APPROXIMATE PROGRAM FOR A WORKSHOP (CAMP)

Day 0-1:
Participants arrivals
Registration
Opening Ceremony (Rules and Schedule acceptance)
Trial tour
First lectures or contests

Day 2-3:
Training (lectures, contests, problem analysis)

Day 4:
Leisure Day
Sponsor's activities

Day 5-6:
Training (lectures, contests, problem analysis)

Day 7-8:
Final Contests
Closing ceremony (results summary)
Departures

CURRICULUM DIVISIONING: PARTICIPANTS' LEVEL OF KNOWLEDGE AND SKILLS

DIVISION A	DIVISION B	DIVISION C	DIVISION D
Team competition	Team competition	Team competition	Personal Credit
Designed to prepare students to participate and win medals in the upcoming ICPC World Finals	Designed to help teams to prepare for regional and international competitions	Designed for freshmen to the world of ICPC competitive programming, who already have teams in their universities	Designed for freshmen to the world of ICPC competitive programming, who haven't created a team yet
Contestants are provided with sets of 8-13 problems for each contest day, 6-9 contests day per each workshop. Each contest day ends up with thorough problems analyses from coaches (instructors)	Participants are provided with lectures on topics of Computer Science relevant for competitive programming, as well as contest materials and problem solutions	Participants are provided with lectures on topics of Computer Science relevant for competitive programming, as well as contest materials and problem solutions	Participants are provided with lectures on topics of Computer Science relevant for competitive programming, basics of algorithms and data structures

DISCOVER
Vladivostok

DISCOVER VLADIVOSTOK 2019 PROGRAMMING WORKSHOP

by Moscow Workshops ICPC and the Far East Federal University

Moscow Workshops ICPC

Dates:	July 6-13, 2019
No of Participants:	60-90 students
Language:	English
Price:	520-790 USD per person*
Level:	division A, division B/C

FEFU
FAR EASTERN FEDERAL UNIVERSITY

* price depends on accommodation, meals, curriculum, sponsorship, date of payment

DISCOVER
Vladivostok

DISCOVER VLADIVOSTOK 2019 PROGRAMMING WORKSHOP

by Moscow Workshops ICPC and the Far East Federal University

Moscow Workshops ICPC

QUALIFICATION OF APPLICANTS

Division C

Students should have basic skills in solving algorithmic problems, show the knowledge of basic constructions of C|C++ or Java programming languages: arithmetic operators, "for" and "while" loops, functions, classes

The program contains basic and advanced algorithms and data structures: finding shortest paths in weighted graphs, segment trees, finding patterns in text (prefix-function, z-function, tries), dynamic programming in submasks etc

DISCOVER
Vladivostok

DISCOVER VLADIVOSTOK 2019 PROGRAMMING WORKSHOP

by Moscow Workshops ICPC and the Far East Federal University

Moscow Workshops ICPC

QUALIFICATION OF APPLICANTS

Division B

Students should have a wide-ranging experience in competitive programming and strong skills in data structures

The program contains classic to regional ICPC competitions non-thematic contests as well as lectures and thematic contests of the high level of proficiency. Potentials topics could be max flow algorithms, building of suffix array/tree/automaton, long multiplication and division using Fast Fourier Transformation, persistent data structures etc

DISCOVER
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DISCOVER VLADIVOSTOK 2019 PROGRAMMING WORKSHOP

by Moscow Workshops ICPC and the Far East Federal University

Moscow Workshops ICPC

QUALIFICATION OF APPLICANTS

Division A

Students should have a vast long-term experience in competitive programming, show complete knowledge of algorithms and data structures, be qualified to participate in the ICPC World Finals

The program doesn't include any lectures and consists entirely (or almost entirely) of non-thematic contests of the highest level (the World Finals level and/or ever higher) and their analyses

DISCOVER
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DISCOVER VLADIVOSTOK 2019 PROGRAMMING WORKSHOP

by Moscow Workshops ICPC and the Far East Federal University

Moscow Workshops ICPC

FEFU
FAR EASTERN FEDERAL UNIVERSITY

ORGANIZER AND HOST PROVIDE

- Meals
- Accommodation
- VIsa support
- Lectures and training program
- Testing system
- Entertainment

Moscow Workshops ICPC

WAYS OF COOPERATION WITH US FOR INDIVIDUALS AND COMPANIES

INTERESTED IN COOPERATION?

ALEXEY MALEEV

Moscow Workshops ICPC founder,
MIPT Vice-Rector,
ICPC World Finals 2020 Director

discover.it-edu.com

/moscowicpc

/moscowicpc

Feel free to contact me!

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