

Yandex



Faculty of Computer Science

National Research University Higher School of Economics

Faculty of Computer Science

Established in March 2014

3

Bachelor's Programmes

12

Labs

7

Master's Programmes

274

Faculty Members

1

Doctoral School

11

RSF Grants

2189

Students

1

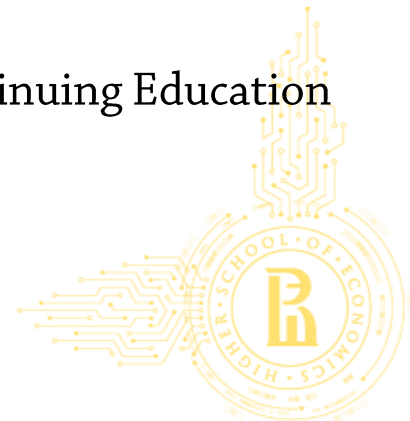
Centre for Student Competitions

177

Foreign Students

1

Centre for Continuing Education



Bachelor's Programmes

Applied Mathematics and Informatics

Yandex

893

Students

4

Years

Ru/En

Language

Software Engineering

ABET

706

Students

4

Years

Ru/En

Language

Data Science and Business Analytics (since 2018)

147

Students

4

Years

En

Language

Awarding Body



Academic Direction



Master's Programmes

Data Science



163

Students

2

Years

Ru/En

Language

**Statistical Learning
Theory**

Skolkovo Tech

Skolkovo Institute of Science and Technology

42

Students

2

Years

En

Language



Master's Programmes

**Financial Technologies and
Data Analysis**



70

Students

2

Years

Ru/En

Language

**Data Analysis in Biology and
Medicine**

42

Students

2

Years

Ru/En

Language



Master's Programmes

**System and Software
Engineering**

74

Students

2

Years

En

Language

**System
Programming**

35

Students

2

Years

Ru/En

Language

ISPRAS



Doctoral School

PhD in Computer Science

40

Students

3-4

Years

Ru/En

Language

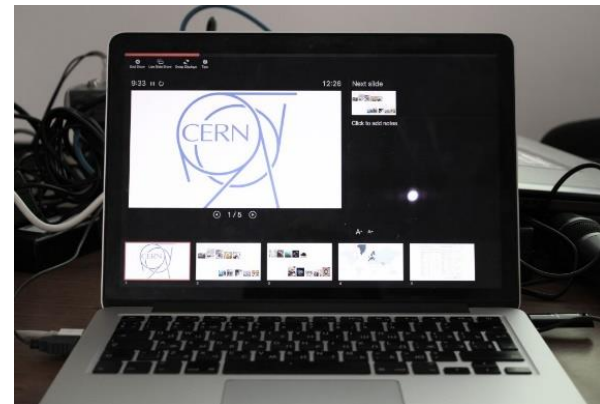
Recent graduates:

- Roman Chereshev, “Human Gait Controlling System Using Machine Learning Methods Suitable for Robotic Prostheses for Patients Suffering from Double Transfemoral Amputation”
- Dmitry Frolov, “Aggregate Representation of Texts for Information Retrieval”
- Artem Grachev, “Methods of Recurrent Neural Network Compression for Natural Language Processing”



Research

- Deep Learning and Bayesian Methods Centre
 - Samsung-HSE Lab
 - Sberbank-HSE Financial Data Analysis Lab
- Process-Aware Information Systems Lab
- Methods for Big Data Analysis Lab
- Intelligent Systems and Structural Analysis Lab
- Stochastic Algorithms and High-Dimensional Inference Lab
- Theoretical Computer Science Lab
- Algebraic Topology and Its Applications Lab
- Bioinformatics Lab
- Complex Systems Modeling and Control Lab
- Models and Methods of Computational Pragmatics Lab



Joint Departments

Joint Department with Yandex

The logo for Yandex, featuring a large red 'Y' followed by the word 'andex' in black lowercase letters.

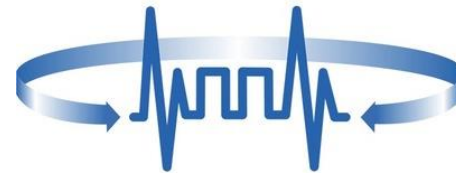
Joint Department with SAS

The logo for SAS, consisting of a blue stylized 'S' followed by the lowercase letters 'sas' in black.

Joint Department with the Federal
Research Center of Computer Science
and Control



Joint Department with the Institute
for Information Transmission
Problems



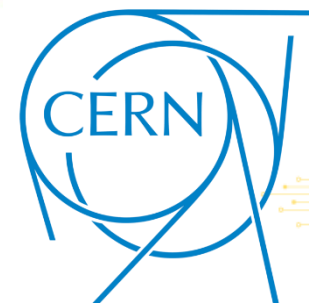
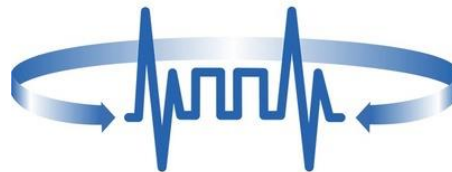
Joint Department with the Institute
for System Programming SAS

The logo for ISPRAS, consisting of the letters 'ISPRAS' in white uppercase font on a dark blue rectangular background.

Partners

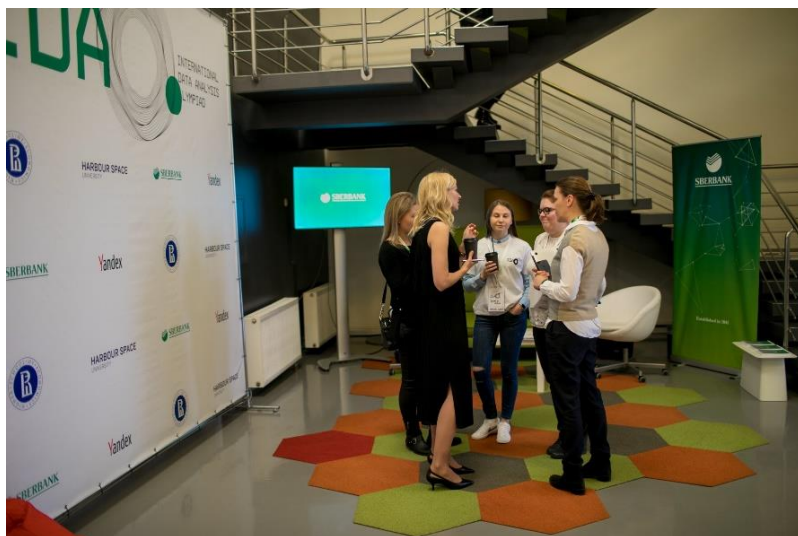


Skolkovo Institute of Science and Technology



Joint Master's Programme in Financial Technologies and Data Analysis

- The Programme is offered in collaboration with Sberbank
- Sberbank covers 100% of tuition fee for students
- Practical classes with data science experts from Sberbank



Joint projects:

- IDAO 2018 and 2019 - Sberbank was a partner of the Olympiad
- Centre of Deep Learning and Bayesian Methods helped Sberbank to solve several data science tasks





Samsung-HSE Laboratory

- develops mechanisms of Bayesian inference in modern neural networks, which is to solve a number of problems in deep learning
- Between HSE Centre of Deep Learning and Bayesian Methods and Samsung AI Center
- Summer School on Deep Learning and Bayesian Methods



The major areas of research are:

- Sparsification and acceleration of deep neural networks
- Ensembles of ML algorithms
- Uncertainty estimation and defenses against adversarial attacks
- Loss-based learning for Deep Structured Prediction
- Stochastic optimization methods
- Learning and inference methods for probabilistic models using tensor decomposition





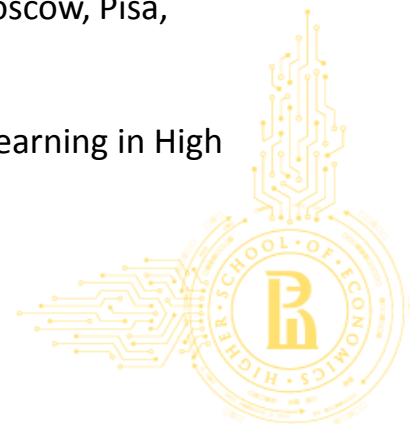
HSE is an LHCb Associate Member at CERN

- HSE researchers have full access to data from the collaboration and allow the university to participate in various projects
- The group from HSE consists of researchers from the Laboratory of Methods for Big Data Analysis (LAMBDA)



Joint events with CERN

- Annual CERN masterclass in particle physics: video conference between Moscow, Pisa, Paris, Cagliari, Rio de Janeiro.
- Summer School on Machine Learning in High Energy Physics



International Summer Schools



Summer School on Deep Learning and Bayesian Methods, 20–25 August 2019

- Participants: students, graduate students and industry representatives
- 7 countries (Great Britain, Spain, Netherlands, Belarus, USA, France, Switzerland)
- In partnership with Samsung AI Center

SAMSUNG

5th Summer School on Machine Learning in High Energy Physics, 1 - 10 July 2019

- Cities: Hamburg, Oxford, Reading, Lund, St Petersburg
- In partnership with Yandex School of Data Analysis and CERN
- Participants: students and faculty members



Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG



Rankings



	2017	2018	2019
QS Overall	411-420	382	343
QS Under 50	51-60	48	38
QS Mathematics	151-200	101-150	101-150
QS Computer Science	351-400	251-300	201-250



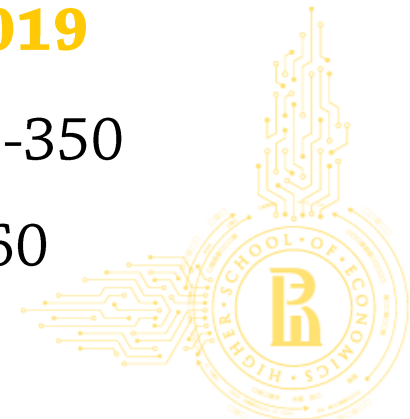
Rankings



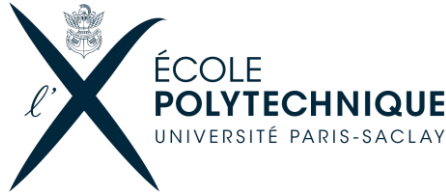
	2017	2018	2019
ARWU Mathematics	101-150	76-100	76-100



	2017	2018	2019
THE Overall	401-500	351-400	301-350
THE Under 50	96	84	60



Foreign Partner Universities



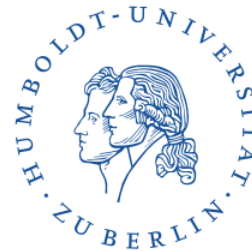
POLITECNICO
DI MILANO



UNIVERSITEIT
STELLENBOSCH
UNIVERSITY



香港中文大學 (深圳)
The Chinese University of Hong Kong, Shenzhen



Universidad
Carlos III de Madrid
www.uc3m.es



Radboud
Universiteit
Nijmegen



SAN DIEGO STATE
UNIVERSITY

UC San Diego



university of
 groningen



Competitions and Olympiads

Centre of Student Competitions of the Faculty of Computer Science helps students to prepare for various team and individual contests including ICPC, Yandex.Algorithm, Google Code Jam, Russian Code Cup and etc. HSE Faculty of Computer Science team won the bronze medal at ICPC World Finals 2019.

2015

ICPC Final Morocco



2016

ICPC Final USA



2017



2018

ICPC Final China



2019

ICPC Final Portugal
Bronze Medal

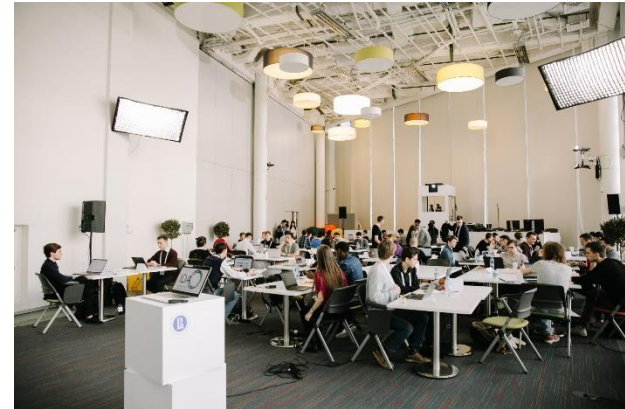


International Data Analysis Olympiad

Higher School of Economics and Yandex organized the contest for the second time.

Key numbers of IDAO 2019:

- 1287 teams registered for the Online Round
- 78 countries
- 31 teams in the Final Round



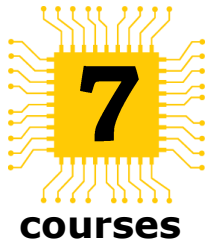
ORGANISERS



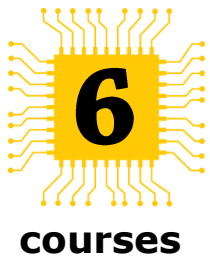
PARTNERS



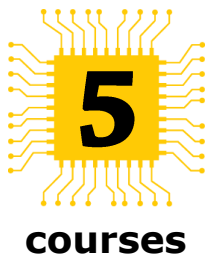
Coursera specializations



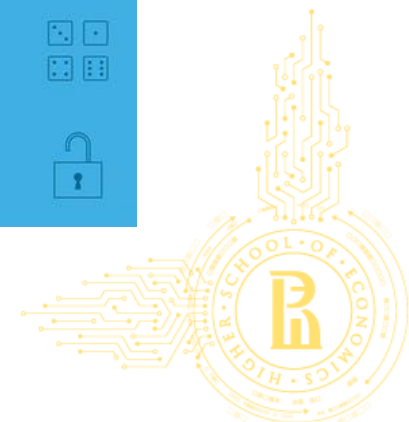
Advanced Machine Learning
Yandex



Data Structures and Algorithms
Yandex UC San Diego



Introduction to Discrete
Mathematics for Computer Science
Yandex UC San Diego



Data Culture

The key aim of HSE's Data Culture project is to provide all undergrads insight into the latest technologies used in data analysis. This way, students in management will be able to set clear tasks for analysts, while analysts, in turn, will be fast and efficient in building their models, and applied specialists will rely on the most cutting-edge data tools.

Project Levels: Elementary, Basic, Advanced, Professional, Expert.





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