Faculty of Computer Science National Research University Higher School of Economics







ABOUT THE FACULTY



The Faculty of Computer Science is a young and fast-growing part of HSE University. One strategic area of our activities is to cooperate with leading educational and research institutions and IT companies from all over the world. We are eager to find opportunities for our students to learn about the latest achievements in IT, to work in the international teams, and to acquire specific knowledge at the world's leading universities

> Ivan Arzhantsev Dean of the Faculty of Computer Science



ABOUT THE FACULTY

Bachelor's programmes

Master's programmes

Doctoral school



5000

departments

students



One- or two-semester exchange programmes at a partner university abroad



A worldwide recognized diploma that can help you to pursue further studies or build a career



HSE PARTNER UNIVERSITY STUDENTS **CAN SPEND UP TO TWO SEMESTERS** AT THE HSE FACULTY OF COMPUTER SCIENCE. THE FACULTY PROVIDES **ENGLISH-TAUGHT PROGRAMMES:**

BSc Data Science and Business Analytics ENG

BSc Software Engineering RUS+ENG

BSc Applied Mathematics and Information Science RUS+ENG

BSc Computing and Data Science #online RUS+ENG

BSc Economics and Data Science RUS+ENG

MSc Master of Data Science #online ENG

MSc Data Science ENG

MSc Math of Machine Learning ENG

MSc Data Analysis in Biology and Medicine RUS+ENG

MSc Financial Technologies and Data Analysis RUS+ENG

MSc System and Software Engineering RUS+ENG



To participate in the exchange programme please contact your local student mobility office





HSE Artificial Intelligence Centre

The Centre's mission is to develop and implement AI technologies in different spheres. Its goals and tasks are to develop new AI technologies that will expand the use of AI and overcome the existing limitations; to create software tools for AI applications in science and business; to develop an open programme library of AI methods

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Centre of Deep Learning and Bayesian Methods

The nucleus of the Centre is the Bayesian Methods Research Group, one of the foremost Russian research groups focused on machine learning and probabilistic simulations. The Centre works in the area of combined neural networks and Bayesian approach — two most successful paradigms in machine learning



International Laboratory for Intelligent Systems and Structural Analysis

The laboratory is engaged in research in complex large-scale data analysis and the development of components for intelligent systems. It also carries out projects commissioned by Russian and international organizations, with a particular focus on integrating smart data analysis methods and applied logic

International Laboratory of Stochastic Algorithms and High-Dimensional Inference



The laboratory brings together Russian and foreign researchers working at the confluence of contemporary mathematics, optimization, probability theory, theories of algorithms and other mathematical disciplines. The laboratory's main objectives include developing new mathematical methodologies for solving real problems in contemporary data analysis and training young world-class experts



Laboratory of Theoretical Computer Science

The laboratory carries out research in such areas as computational complexity, algorithmic theories of information (Kolmogorov complexity), combinatorial optimization and algorithmic game theory. Intersecting with the aforementioned fields, but no less important, the laboratory also studies algorithmic statistics, a research area that was co-founded by the laboratory's head, Professor Nikolay Vereshchagin



International Laboratory of Algebraic Topology and Its Applications The laboratory conducts research in areas adjacent to algebraic topology. One of the research directions, toric topology, lies on the intersection of the topological group action, combinatorics, homological algebra and differential geometry. Another research direction is the application of geometrical methods to data analysis. The goal of the Laboratory is to develop methods of algebraic topology with reference to applications in theoretical mathematics as well as the analysis of high-dimensional data, including topological analysis of neurobiological data



International Laboratory of Bioinformatics



The laboratory's goal is to advance the field of bioinformatics. The main directions of activities of the laboratory are fundamental research in the area of DNA secondary structures and their role in genome functioning, chromatin organization and DNA-protein interactions



Yandex Laboratory

This Laboratory was created in cooperation with Yandex Research. The laboratory conducts research on the topics of computer vision, natural language processing, probabilistic and graph machine learning, scalable and distributed deep learning



Laboratory of Methods for Big Data Analysis

This laboratory aims at developing and applying methods for data analysis and machine learning processes in order to solve various problems of fundamental science such as locating dark matter and antimatter, researching high energy cosmic rays and gravitational lensing



Laboratory of Process-Aware Information Systems

The PAIS Lab aims to address urgent challenges related to business process management, process mining, and information systems development. The laboratory uses a mixture of formal methods (e.g., Petri nets and other models for concurrency), data-driven analysis (data/process mining), and systems engineering



Laboratory of Complex Systems Modelling and Control

The laboratory pursues fundamental and applied research on data analysis and mathematical modeling of complex systems. The projects of the laboratory are focused on the development of models and methods for reconstructing the properties of big systems that demonstrate synchronization phenomena, quasi-regularities, self-organization, and sudden regime changes



Laboratory for Models and Methods of Computational Pragmatics

The area of expertise of the laboratory is unstructured data analysis. We study recommending systems and services, develop methods for multimodal clustering and classification that allow profiling user interests based on various modalities



Laboratory on AI for Computational Biology

The laboratory creates deep learning technologies for biomolecular medical data analysis to be used in life sciences and biomedical applications. We are an international, English-speaking, multidisciplinary group with a background in computer science, math, and molecular biology



Laboratory on Algebraic Transformation Groups Laboratory on Algebraic Transformation Groups

The main object of the laboratory's work is the theory of algebraic transformation groups, i.e. actions of algebraic groups on algebraic varieties, one of the classical areas of algebra and algebraic geometry. It has many interconnections with combinatorics, differential geometry, algebraic group theory, Lie groups, Lie algebras, and representation theory

INTERNATIONAL RANKINGS

QS World University Rankings

	2019	2020	2021	2022
QS Overall	343	322	298	308
QS Mathematics	101–150	101–150	95	72
QS Computer Science and Information Systems	151–200	151–200	151–200	151–200

US New Best Global Universities for Mathematics

2019	2020 2021	2022
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US News Best Global 107 Universities for Mathematics	105	82	84
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ARWU Mathematics

	2019	2020	2021	2022
ARWU Mathematics	76–100	76–100	76–100	51-75



OUR STUDENTS IN INTERNATIONAL COMPETITIONS

The students of the Faculty regularly participate in international mathematics and computer science competitions and have won many times

Programming

2018

- ACM ICPC final round in Beijing (China)
- 2nd place in the Yandex. Algorithm Championship

2019

Bronze medal at ICPC

2020

- ACM ICPC final round
- 2nd place in the Yandex. Algorithm Championship

Mathematics

2018

Prize medal at the Vojtech Jarnik Olympiad (Czech Republic)

2019

Three gold, silver and bronze medals at IMC

2020

Four gold, two silver and bronze medals at IMC

2021

- Gold and silver medal at NERC
- ICPC ½ final round

2022

Bronze medal at ICPC

2021

Four gold, silver and bronze medals at IMC

2022

Grand first prize, six gold, silver medals at IMC

2023

Two gold and silver medals at IMC



ACADEMIC MOBILITY

Mobility programmes enable students to spend one or two semesters at a foreign university. The Faculty constantly seeks to extend its exchange network and sign new agreements with foreign universities focused on computer science

Current partnerships on faculty mobility

Technical University of Applied Sciences Würzburg-Schweinfurt Germany

Chinese University of Hong Kong, Shenzhen China Stellenbosch University South Africa

Harbour Space University Spain

Requirements



Being a current student



Being eligible to spend

of a partner university of the Faculty of Computer Science or Higher School of Economics up to two semesters at the Faculty of Computer Science

How to apply

- Prepare an email with the following information: name, email, gender, field of study, study level (bachelor's, master's, or PhD), and the desired
 length of study at HSE University
- Wait for a welcome e-mail from HSE University
- Fill in the online form and attach copies of the required documents before the deadline



• Receive a letter of acceptance

INTERSHIP

The Faculty of Computer Science invites international students to participate in research internships. The duration of the internship is two to six months. Via this programme, Faculty researchers can find interns for their projects, and international students have the opportunity to join a skilled team, apply their knowledge to real tasks and gain scientific work experience

Requirements



Good command of English (Russian is not required)



Being an undergraduate, graduate, or postgraduate student



Experience in the research area of the chosen internship

How to apply



- Prepare CV, cover letter, university transcript, English proficiency certificate (not obligatory)
 - Select the project you're interested in
- Fill out the form
- Wait for the results

- Faculty Computer
- Provide your consent for internship
- Submit necessary documents

THE CAMPUS

HSE University has one of the most modern campuses in Russia where three colossal atriums unite various historic buildings into a continuous space. It is a campus for study, research, conferences, and student life

13 buildings integrated into a single complex





The Faculty of Computer Science



International Programmes of the Faculty of Computer Science



Contact

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