



# COMPUTER SCIENCE AND KNOWLEDGE DISCOVERY

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## ABOUT THE DEPARTMENT

The department of Computer Science and Engineering (major department) of the School of Computer Science and Technology was founded by the government regulation of the Soviet Union in 1931. It became the 1st department in the Soviet Union to train engineers and developers in the field of computer science and engineering.

Research activities encompass high-performance systems, parallel and distributed computing, data analysis, digital signal processing, microprocessor systems, software and hardware development, artificial intelligence, embedded systems, biometric technologies, information security, etc.

The department faculty consists of:

- 8 Professors, Doctors of Science;
- 26 Associate Professors, PhD;
- 7 Assistant Professors.



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## ABOUT THE PROGRAM

**The program provides** students with broad knowledge and skills in the field of data analysis, signal processing, artificial intelligence, cloud computing as well as software and hardware design and information security. Study of parallel and distributed computing, embedded and high-performance systems

**“Computer science and knowledge discovery”** master's program includes the following groups: data and signal processing and mathematics; software and hardware design; artificial intelligence, computer science and engineering; general courses

## MASTER'S PROGRAM OVERVIEW

<b>CURRICULUM</b>		Academic hours		
Year	Semester	Class hours	Practice	Defense
I	<b>1</b>	378	702	-
	<b>2</b>	342	738	-
II	<b>3</b>	414	666	-
	<b>4</b>	-	756	324
	<b>Total</b>		<b>3996</b>	

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## COURSES & EDUCATION

### Section of data and signal processing and mathematics

- Digital signal processing
- Biometric technologies
- Advanced mathematical methods
- Algorithmic mathematics
- Computer tools in education
- Data and visual analytics.



### Section of software and hardware design

- Parallel computing
- Languages for hardware design and verification
- Basics of system theory
- Information security
- Software development technology

### General Educational Disciplines

- Algorithm design and optimization
- Mathematical foundations of computer science
- Computational systems



### Section of artificial intelligence, computer science and engineering

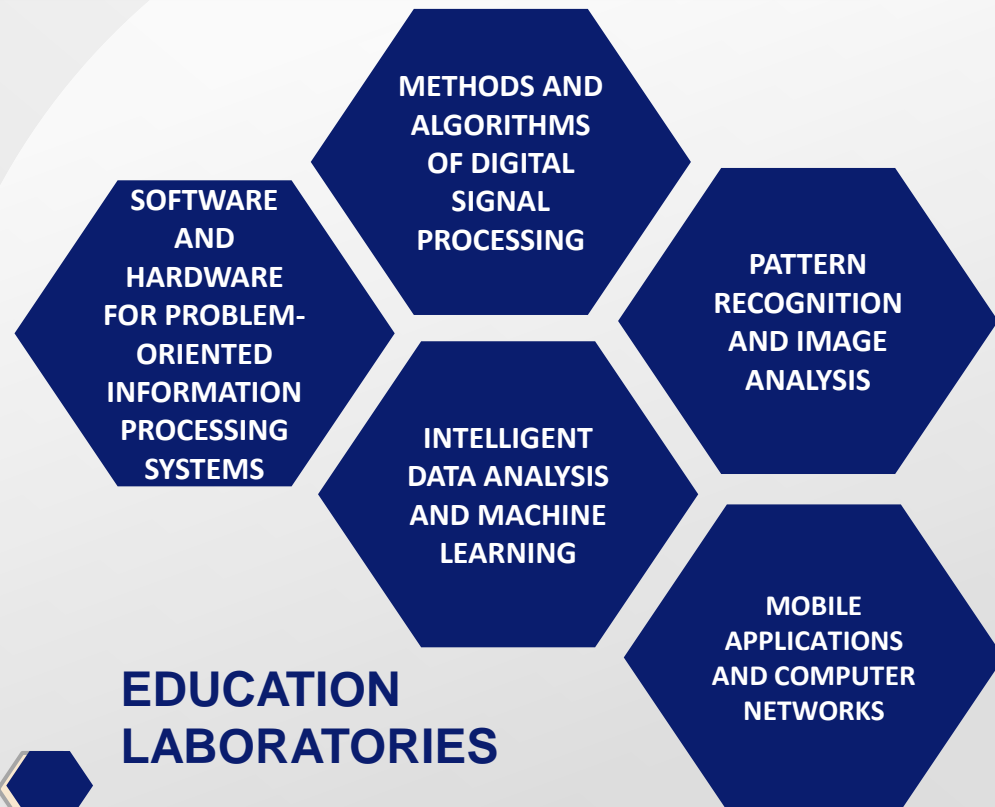
- Advanced data analysis and machine learning
- Intelligent systems
- Distributed systems and technologies
- Mathematical modelling of linear and non-linear systems



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## EDUCATION & RESEARCH FACILITIES



## RESOURCE CENTER



- Digital signal and image processing
- Pattern recognition and image analysis
- Artificial intelligence and data mining
- Data and visual analytics
- Software engineering
- Information security
- Control theory and control processes
- Computer algebra and numerical methods
- Decision-making systems, optimization, and mathematical modeling
- Telecommunication technologies, multimedia technologies, web-technologies
- Parallel, distributed, and embedded systems
- Biometric technologies]
- Hardware design and verification

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## INTERNATIONAL COOPERATION

Students of the master's program have the opportunity to take internships at partner universities:

- Ilmenau University of Technology;
- Leibniz University of Hannover;
- Lappeenranta University of Technology Aalto University;
- Technical University of Sofia;
- Technical University of Liberec

## PARTNERS

- Luxoft
- Siemens
- Steklov Mathematical Institute of the Russian Academy of Sciences
- Corporation "Oceanpribor"
- EPAM
- Speech Technology Center
- Motorola Solutions
- St Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences
- IBM

