

# BIG DATA AND MACHINE LEARNING (2024)

120 credits

## Professional training

### Mandatory courses

- Parallel algorithms for the analysis and synthesis of data
- Machine Learning
- Methods and models for multivariate data analysis
- Analysis and development of algorithms
- Architecture of Neural Networks for Deep Learning
- Technologies and Infrastructure for Big Data
- Optimization Methods
- Discrete modeling
- Reinforcement Learning
- Machine Learning for Industrial Data

1, 2, 3 semesters

37 credits

### Elective specializations/modules/courses

- Module “Big Data Infrastructure Organization and Management”
  - Continuous Mathematical Models
  - Advanced Technologies for Big Data
- Module “Machine Learning and Big Data Analysis Technologies”
  - Advanced Natural Language Processing
  - Advanced Machine Learning Technologies

3 semester

8 credits

45 credits

## Fundamental training

- Thinking
- Creative Technologies
- Entrepreneurship
- Foreign Language
- Soft Skills

1, 2 semesters

12 credits

## Practical training

- Concepts of Scientific Research
- Research Internship
- Tech Internship
- Pre-graduation Internship
- Preparation for Thesis Defense and Thesis Defense

1, 2, 3, 4 semesters

63 credits