Faculty of Mathematics and Informatics

In 2024, the Faculty of Mathematics and Informatics of Vilnius University continued significant academic, scientific, and social activities.

The Faculty's study programmes in informatics underwent evaluation, and their accreditation was extended for another seven years, thereby confirming their quality. The joint ARQUS Alliance Master study programme 'International Cybersecurity and Cyberintelligence' was launched. For the first time, twenty teachers who completed a module on teaching mathematics as a school subject were awarded certificates. The Centre of Excellence Data Centre for Machine Learning and Quantum Calculations in the Fields of Natural and Biomedical Sciences has attracted young researchers and doctoral students. Other projects included the creation of a Lithuanian linguistic speech corpus and the activities of the EuroHPC Competence Centre. A significant achievement was the journal 'Informatics in Education' (Editor-in-Chief: Prof. Valentina Dagienė) being ranked in the first quartile (Q1) of Clarivate's 'Web of Science/Journal Citation Reports'.

The Faculty actively contributes to the welfare of the State and society by organising events for teachers and pupils. Among the most important events was the conference on updated curricula and inclusive education for mathematics teachers that took place in December. Pupils participated in competitions during the traditional event 'Studies and Research at the Faculty of Mathematics and Informatics of Vilnius University' in Palanga, where they were introduced to machine learning and quantum computing. Meanwhile, teachers analysed recent changes in the general education mathematics curriculum. The project 'Lesson with a University Lecturer' is further developed, with more than 150 visits to schools throughout Lithuania organised in 2024.

The Faculty also maintained successful cooperation with its business partners. Coherent Solutions and Nasdaq awarded students with nominal scholarships, while EPAM funded a trip to the scientific conference DAMSS 2025 for six students, where they presented their research.
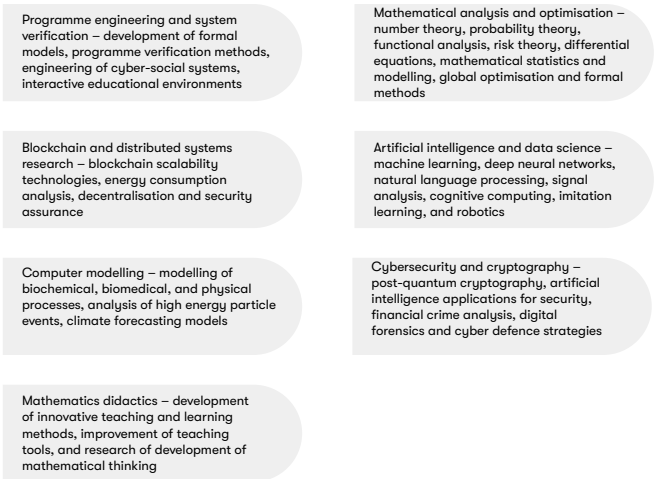
Substantial improvements were also made to enhance the infrastructure at the Faculty – modern data storage equipment was acquired for the Centre of Excellence, significantly strengthening the activities of the Data Centre at the University.

Every year, the winners of Vilnius City Mathematics and Informatics Olympiads are honoured at the Faculty. The Faculty is proud of the significant achievements of its researchers: the Lithuanian Science Prize in the area of technological sciences was awarded to Professor Emeritus Antanas Žilinskas for the research paper series 'Inovatyvūs algoritmai sudėtingiems globalios optimizacijos uždaviniams' ('Innovative Algorithms for Complex Global Optimisation'). The University also received the prestigious EGI Federation certificate for active participation in activities with the supercomputer VU HPC; this work is carried out in cooperation with the Faculty of Physics. The Rector's Award was granted to Prof. Olga Kurasova, while Assoc. Prof. Gintautas Bareikis was elected the best lecturer at the Faculty, and lecturer Vytenis Šumskas won the Youth Influencer of the Year title. The LMA's Scholarship for Young Scientists was awarded to Dr Linas Stripinis, and the INFOBALT Association Scholarship was granted to third-year student Oskaras Klimašauskas. Fourth-year Informatics student Dominykas Marma won the Lithuanian Student Programming Olympiad. The team from the Faculty, represented by students Gabrielius Keibas, Pijus Petkevičius, and young researcher Dr Marco Marcozzi, earned second place in the technical implementation category of the QL Future Health & Safety Hackathon.

Prof. Dr Paulius Drungilas, Dean

KEY FACTS AND FIGURES

Areas of research interest

Programme engineering and system verification – development of formal models, programme verification methods, engineering of cyber-social systems, interactive educational environments

Mathematical analysis and optimisation – number theory, probability theory, functional analysis, risk theory, differential equations, mathematical statistics and modelling, global optimisation and formal methods

Blockchain and distributed systems research – blockchain scalability technologies, energy consumption analysis, decentralisation and security assurance

Artificial intelligence and data science – machine learning, deep neural networks, natural language processing, signal analysis, cognitive computing, imitation learning, and robotics

Computer modelling – modelling of biochemical, biomedical, and physical processes, analysis of high energy particle events, climate forecasting models

Cybersecurity and cryptography – post-quantum cryptography, artificial intelligence applications for security, financial crime analysis, digital forensics and cyber defence strategies

Mathematics didactics – development of innovative teaching and learning methods, improvement of teaching tools, and research of development of mathematical thinking

Study portfolio in 2024

	Bachelor studies	Master studies
Total number of programmes implemented	10	7
Joint programmes	-	1
Interdisciplinary programmes	-	1
Programmes implemented in a foreign language	-	7
Number of new programmes	-	1
	Doctoral studies	
Number of science fields	3 (Mathematics, Informatics, Informatics Engineering)	

The figures for the study programmes are based on the data of 1 October.

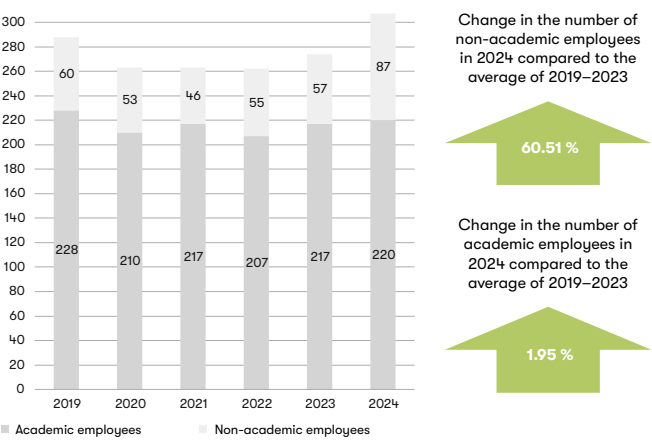## Number of employees, students, and graduates in 2024

Academic employees: 220
Students (all study forms): 2252
Non-academic employees: 87
Graduates: 390
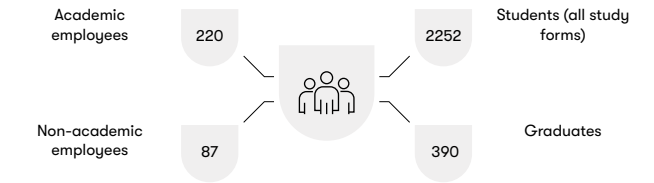
Number of foreign nationals employed in 2023–2024

	Academic employees	Non-academic employees	Total
2024	8	2	10
2023	7	2	9

Based on the data of 31 December.

Changes in the number of employees, 2019–2024

Change in the number of non-academic employees in 2024 compared to the average of 2019–2023: 60.51 %

Change in the number of academic employees in 2024 compared to the average of 2019–2023: 1.95 %

Based on the data of 31 December.

Admissions to studies, 2019–2024

Bachelor studies
527, 500, 456, 496, 484, 506
2019 2020 2021 2022 2023 2024
2, 3, 2, 13, 5, 4
- Persons admitted to Bachelor studies
- Foreign nationals among admitted

Master studies
111, 120, 112, 130, 131, 176
2019 2020 2021 2022 2023 2024
5, 21, 12, 28, 20, 48
- Persons admitted to Master studies
- Foreign nationals among admitted

Doctoral studies
21, 20, 17, 15, 21, 15
2019 2020 2021 2022 2023 2024
4, 1, 1, 1, 1, 3
- Persons admitted to doctoral studies
- Foreign nationals among admitted

Change in the number of admitted persons by study cycle in 2024 compared to the average of 2019–2023

2.72 %   45.7 %   -20.21 %

The first cycle and the second cycle indicators were calculated on the basis of the data of 1 October, and the third cycle indicators were calculated on the basis of the data of 31 December.
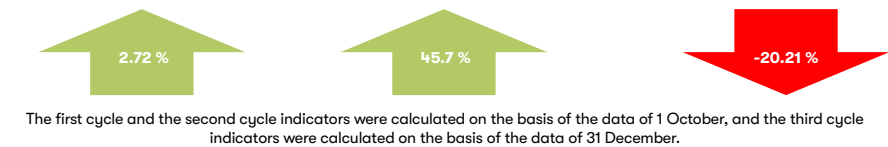
Number of admitted students who received the highest evaluation in their matura exams in 2023–2024

2023: 134
2024: 136

This accounted for **19.06 per cent** of the total number of students admitted to VU who received the highest evaluation in their matura exams

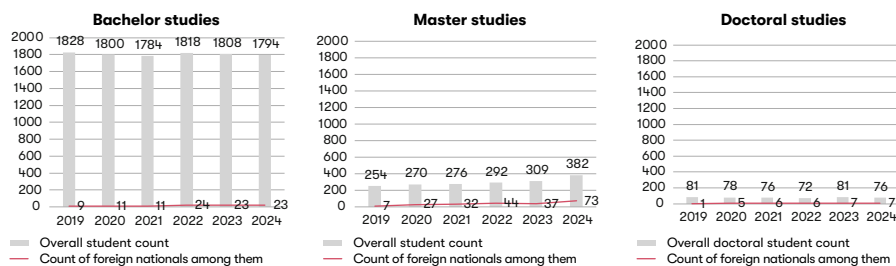This accounted for **19.46 per cent** of the total number of students admitted to VU who received the highest evaluation in their matura exams
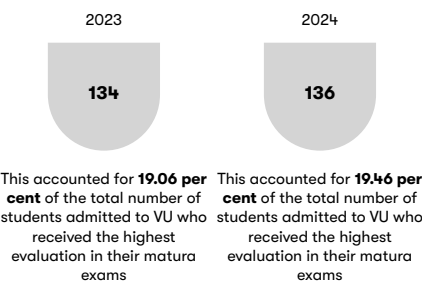
Based on the data of 1 October.

Number of students, 2019–2024

Bachelor studies

	2019	2020	2021	2022	2023	2024
Overall student count	1828	1800	1784	1818	1808	1794
Count of foreign nationals among them	9	11	11	24	23	23

- Overall student count
- Count of foreign nationals among them

Master studies

	2019	2020	2021	2022	2023	2024
Overall student count	254	270	276	292	309	382
Count of foreign nationals among them	7	27	32	44	37	73

- Overall student count
- Count of foreign nationals among them

Doctoral studies

	2019	2020	2021	2022	2023	2024
Overall doctoral student count	81	78	76	72	81	76
Count of foreign nationals among them	1	5	6	6	7	7

- Overall doctoral student count
- Count of foreign nationals among them
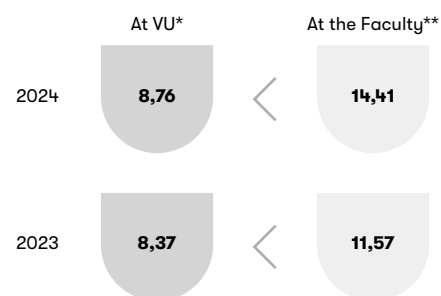
Change in the number of students by study cycle in 2024 compared to the average of 2019–2023

-0.75 % | 36.33 % | -2.06 %

The first cycle and the second cycle indicators were calculated on the basis of the data of 1 October, and the third cycle indicators were calculated on the basis of the data of 31 December.
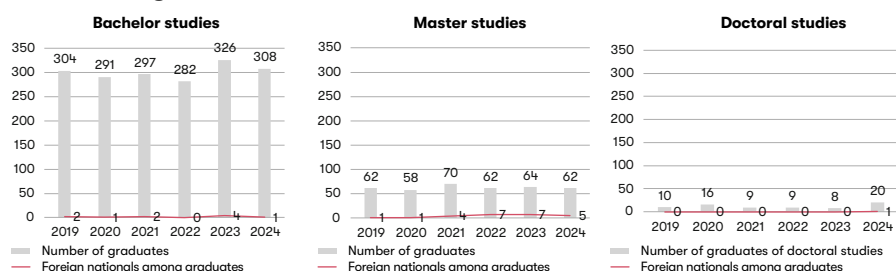
Student–faculty ratio, 2023–2024

	At VU*		At the Faculty**
2024	8,76	<	14,41
2023	8,37	<	11,57

* Calculated by dividing the total number of VU students in the first cycle, second cycle, integrated, and professional (pedagogy) studies on 1 October by the total number of VU teaching staff on 31 December.

** Calculated by dividing the total number of Faculty students in the first cycle and second cycle on 1 October by the number of Faculty teaching staff on 31 December.
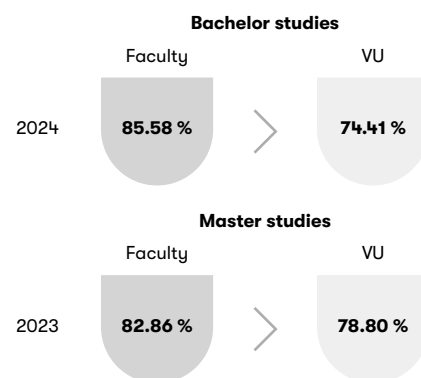
Number of graduates, 2019–2024

Bachelor studies

	2019	2020	2021	2022	2023	2024
Number of graduates	304	291	297	282	326	308
Foreign nationals among graduates	2	1	2	0	4	1

- Number of graduates
- Foreign nationals among graduates

Master studies

	2019	2020	2021	2022	2023	2024
Number of graduates	62	58	70	62	64	62
Foreign nationals among graduates	1	1	4	7	7	5

- Number of graduates
- Foreign nationals among graduates

Doctoral studies

	2019	2020	2021	2022	2023	2024
Number of graduates of doctoral studies	10	16	9	9	8	20
Foreign nationals among graduates	0	0	0	0	0	1

- Number of graduates of doctoral studies
- Foreign nationals among graduates

Change in the number of graduates by cycle in 2024 compared to the average of 2019–2023
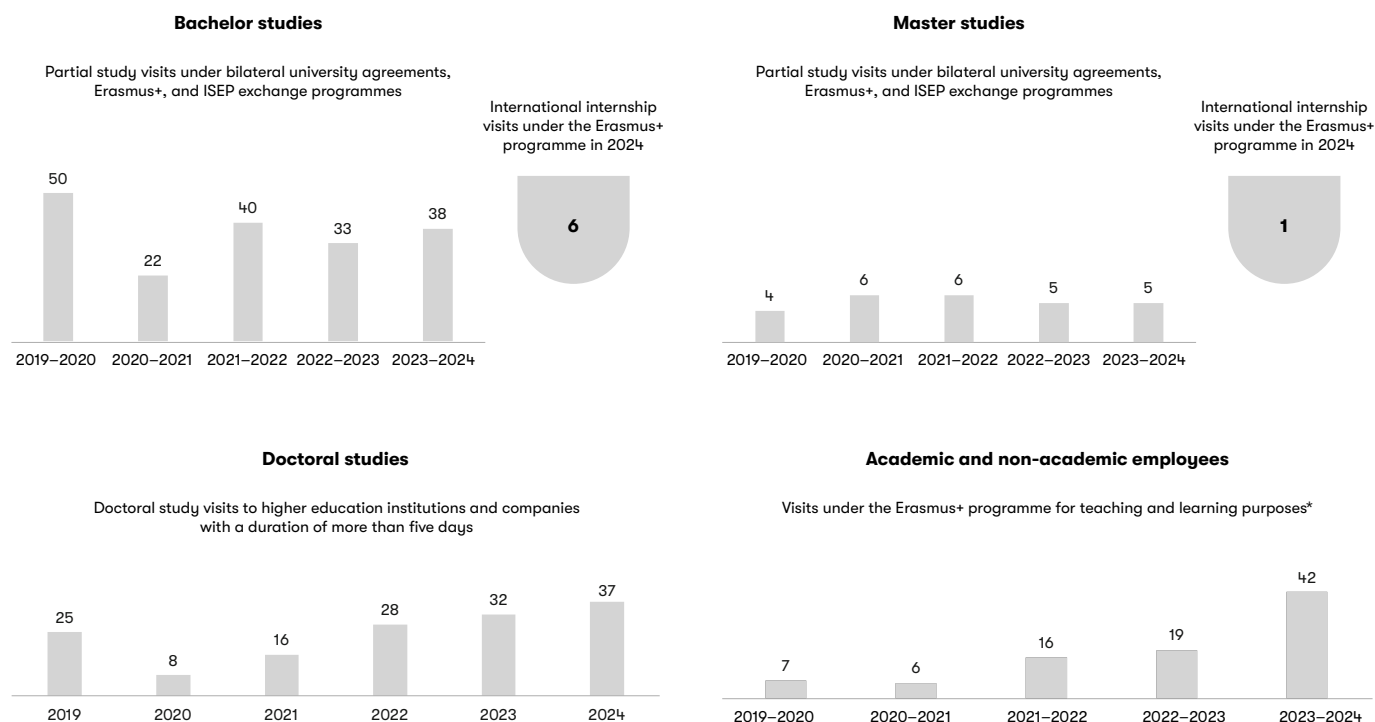
2.66 % | -1.9 % | 92.3 %

The first cycle and the second cycle indicators were calculated on the basis of the data of 1 September, and the third cycle indicators were calculated on the basis of the data of 31 December.

Graduate career success in 2024

Bachelor studies

	Faculty		VU
2024	85.58 %	>	74.41 %

Master studies

	Faculty		VU
2023	82.86 %	>	78.80 %

Target outcome –> the level of highly qualified graduates and/or graduates continuing their studies in a higher cycle growing at least 1 per cent annually, but no lower than 60 per cent. Based on the data of 1 October.
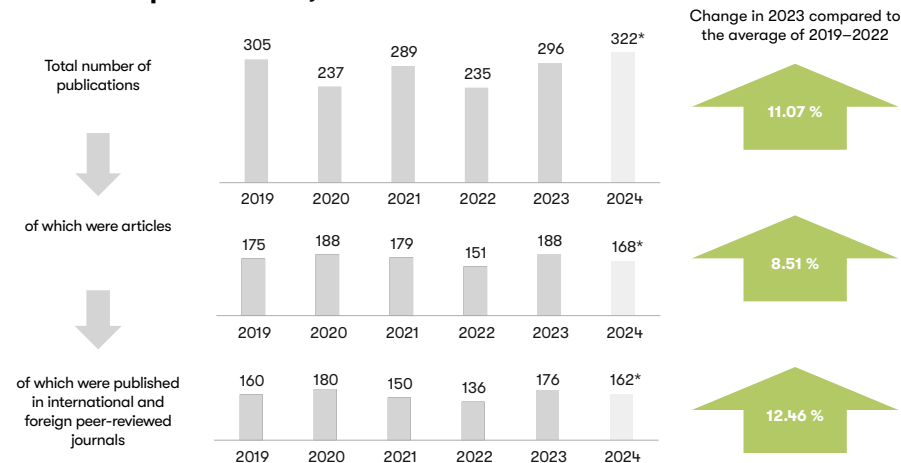
Mobility of students, doctoral students and employees, 2019–2024

Bachelor studies

Partial study visits under bilateral university agreements, Erasmus+, and ISEP exchange programmes

2019–2020	2020–2021	2021–2022	2022–2023	2023–2024
50	22	40	33	38

International internship visits under the Erasmus+ programme in 2024

6

Master studies

Partial study visits under bilateral university agreements, Erasmus+, and ISEP exchange programmes

2019–2020	2020–2021	2021–2022	2022–2023	2023–2024
4	6	6	5	5

International internship visits under the Erasmus+ programme in 2024

1

Doctoral studies

Doctoral study visits to higher education institutions and companies with a duration of more than five days

2019	2020	2021	2022	2023	2024
25	8	16	28	32	37

Based on the data of 31 December.

Academic and non-academic employees

Visits under the Erasmus+ programme for teaching and learning purposes*

| 2019–2020	2020–2021	2021–2022	2022–2023	2023–2024
7	6	16	19	42

*The statistics on employee mobility do not include secondments and work placements carried out under mobility forms and programmes other than Erasmus+.

Number of publications, 2019–2024

Total number of publications

2019	2020	2021	2022	2023	2024
305	237	289	235	296	322*

↓

of which were articles

2019	2020	2021	2022	2023	2024
175	188	179	151	188	168*

↓

of which were published in international and foreign peer-reviewed journals

2019	2020	2021	2022	2023	2024
160	180	150	136	176	162*

Change in 2023 compared to the average of 2019–2022

11.07 %

8.51 %

12.46 %

* The publication figures for 2024 are based on the data of 10 February 2024 and are not exhaustive, as the registration of publications was still ongoing at that time. The publication figures for 2024 are not included in the calculations.

Successfully defended dissertations, 2019–2024

2019	2020	2021	2022	2023	2024
13	5	13	9	5	11
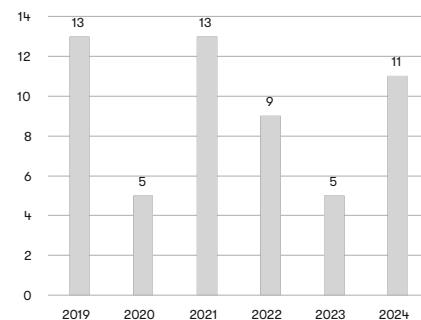
The total number of successfully defended dissertations during the period of 2019–2024 is 56
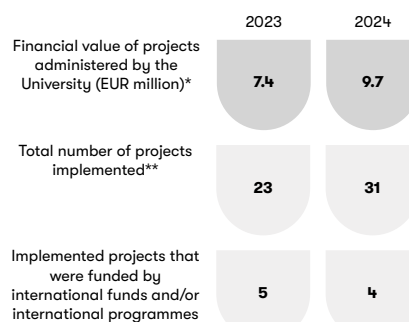
Based on the data of 31 December.

Number of postdoctoral trainees at the University, 2019–2024

2019	2020	2021	2022	2023	2024
7	4	3	5	4	3
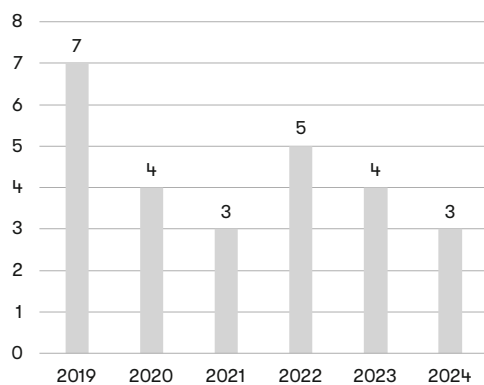
Average number of postdoctoral trainees per year is 4.33

Based on the data of 31 December.

Projects, 2023–2024

	2023	2024
Financial value of projects administered by the University (EUR million)*	7.4	9.7
Total number of projects implemented**	23	31
Implemented projects that were funded by international funds and/or international programmes	5	4

* The value of projects implemented in a given year is presented.

** The total number of projects include projects whose activities were in the implementation phase during the given year. In the case of internal partnership at VU, i.e. when several faculties participated in one project, the project was accounted only once and assigned only to the unit that owned the project.

Key projects in 2024

Didžiojo lietuvių kalbos garsyno sukūrimas (LIEPA-3) (Creation of the Great Lithuanian Linguistic Speech Corpus (LIEPA-3))
The total value of the project amounts to EUR 4,015,289.49. The project is funded by the Recovery and Resilience Facility Plan 'Naujos kartos Lietuva' ('Lithuania of a New Generation') (Project No. 02-023-K-0001). Project manager – Research Prof. Dr Gražina Korvel.

Nacionalinio EuroHPC partnerystės kompetencijos centro veiklų įgyvendinimas (Implementation of the Activities of the National EuroHPC Partnership Competence Center)
The total value of the project amounts to EUR 1,000,018.68. The project is funded by the EU Investment Fund 2021–2027 and the European High-Performance Computing Joint Undertaking (Project No. 10-051-P-0001 and No. 101101903). Project manager – Prof. Dr Povilas Treigys.

EDIH VILNIUS: Accelerating Green and Digital Transformation in Vilnius Region
The value of the project administered by the University is EUR 394,000. The project is funded by the European Union under the DIGITAL Europe programme in cooperation with the Innovation Agency Lithuania (Project No. 101083844). Project manager – Prof. Dr Remigijus Paulavičius.

Duomenų centras mašininiam mokymuisi ir kvantiniams skaičiavimams gamtos ir biomedicinos mokslų srityse (Data Centre for Machine Learning and Quantum Computing in Natural and Biomedical Sciences)
The total value of the project amounts to EUR 2.47 million. The project is funded by the Research Council of Lithuania under the programme 'Universitetų ekscelencijos iniciatyva' ('University Excellence Initiative') of the Ministry of Education, Science and Sport (instrument Improvement of Research and Study Environment, Project No. S-A-UEI-23-11). Head of the Centre – Prof. Dr Jurgita Markevičiūtė.

Santraukų tekstynai dirbtiniam intelektui (Abstract Corpora for Artificial Intelligence)
The total value of the project amounts to EUR 865,734.14. The project is funded by the Recovery and Resilience Facility Plan 'Naujos kartos Lietuva' ('Lithuania of a New Generation') (Project No. 02-101-K-0001). Project manager – Prof. Dr Virginijus Marcinkevičius.