



FRI
**CREATING
THE FUTURE**

3rd Cycle

**Doctoral
Study Programmes**



University of Ljubljana
Faculty of Computer and
Information Science





Earning a Doctorate is One of the Highest Honours

Computer and information science is one of the leading areas shaping the economy, education, culture, administration and other disciplines. The rise of computer technology dictates the need for highly qualified professionals which are capable of developing new computer and information technologies and implementing them in innovative environments.

The doctoral programme in Computer and Information Science appeals to young people, especially those who plan on pursuing research and scientific work in computer science and informatics. This programme is the successor of doctoral programmes Computer and Information Science, and Information Systems and Decision Making. It has been redesigned to make it more effective in terms of responding to student's needs.

The main focus of the doctoral study is on research, interdisciplinarity and cooperation with domestic and foreign experts. Special emphasis is devoted to combining scientific and professional areas with elective courses and an academic advisor programme.

Doctoral Study Programme in Computer and Information Science

At the Faculty of Computer and Information Science we offer the doctoral study programme in Computer and Information Science. There is a wide range of courses available which offers students the opportunity to further their research work in a specific field. The aim of the programme is to provide computer science education to independent researchers, teachers and future leaders.

We also run an interdisciplinary doctoral study programme Biosciences in cooperation with several faculties (the Biotechnical Faculty, the Faculty of Electrical Engineering, the Faculty of Health Sciences and the Faculty of Mechanical Engineering).

✓ **STATE OF THE ART
COURSES**

✓ **RESEARCH-FOCUSED
PROGRAMMES**

✓ **LECTURES ARE
HELD IN ENGLISH**

✓ **MODERN
FACILITIES**





”

**MATIC CANKAR,
PhD, researcher at XLAB**

To become an expert in your field you need to be up to speed with the latest research and technology. Enrolling in PhD studies is an important step on the road towards gaining skills and staying on track with ongoing research, which is crucial in order to develop new ideas and contribute to international research projects. This knowledge enables me to tackle and solve the academic and industrial issues that arise if you are working for an IT company with a strong research group like XLAB.

Computer and Information Science

The Computer and Information Science doctoral programme is designed to further the student's knowledge of computer science and information technology, while also providing training in the soft skills required for research and development. The course is recommended for students who intend to pursue a career in academia and for students who intend to carry out demanding and innovative research and development in the industry.

Admission Requirements

Candidates that have completed the following can enrol in the third-cycle study programme.

- (a) A second cycle master's programme;
 - (b) A vocational study programme regulated by EU directives or any other uniform master's study programme evaluated at 300 ECTS;
 - (c) a university study programme adopted before 11 June 2004;
 - (d) A professional study programme adopted before 11 June 2004 and study programmes leading to a specialisation. Prior to enrolment, candidates must complete study requirements in the scope of up to 60 ECTS from the second-cycle Computer and Information Science study programme. Their study requirements (a list of courses) will be determined by the Faculty's committee, in view of the candidate's prior education (completed programme).
 - (e) A study programme leading to a MSc degree.
- Candidates will be accorded credits up to 60 ECTS.

Given that they have completed an equivalent level of education abroad, **foreigners applying for doctoral programmes are subject to the same conditions as Slovenian citizens.** The equivalence of education with the purpose of continuation is determined in accordance with University of Ljubljana statutes. The procedure is led by the authorised person at the University of Ljubljana, with the content managed by the senate of the member faculty or the University of Ljubljana Senate.

Advisor

The selection of advisor for doctoral studies is vitally important. Make your selection in relation to your field of interest. Before your final selection, talk to the advisor, familiarise yourself with their laboratory, read through some of the advisor's most recent articles and consider whether the field they are involved in is appropriate and of interest to you.

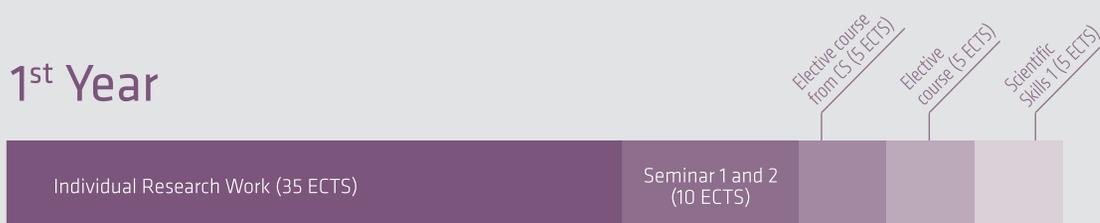
The role of the advisor is to help you choose your field of research, to formulate the topic, select courses, to monitor your work and provide helpful advice. You will be in continuous contact with your advisor, you will collaborate with members of their laboratory and use the equipment it offers. The advisor will help you formulate your doctoral thesis so that your original contributions to computer and information science will be evident in it.

A list of potential mentors is posted on the website: fraca.si/mentors

Scheme of the Study Programme Computer and Information Science

The Computer and Information Science doctoral study programme comprises organised forms of study, research and the doctoral dissertation itself. It is a three-year programme performed entirely in English.

1st Year



The first study year comprises two elective courses, the Scientific Skills 1 course and Seminars 1 and 2. Candidates establish the focus of their research with the guidance of their mentors and start conducting the research.

2nd Year



In the second year, the candidates take part in two elective courses and Seminars 3 and 4, but primarily focus on research that is guided by their mentors and on which they work closely with their chosen laboratory. In order to progress to the third year, candidates must have an approved thesis topic which includes a written description and a defence.

3rd Year



The third year is reserved for the research and preparation of the doctoral thesis, which the candidate presents in Seminar 5. The candidate also learns how to write a project proposal in the Scientific Skills 2 course.

Mandatory Courses

The two mandatory courses are Scientific Skills 1 and Scientific Skills 2, which include topics such as paper writing, preparing good oral and poster presentations, copyright and patent laws, ethics in science, writing project proposals and the like.

Elective Courses

The candidate chooses four elective courses, two of which are selected from these elective courses: Mathematics for Machine Learning • Incremental Learning from Data Streams • Contemporary Approaches to Algorithm Design • Selected topics on Cryptography and Computer Security • Advanced Topics in Network Science • Predictive Analytics for Structured Data • Information System Integration Methods • Advanced Algorithms for Search and Planning • Machine learning for natural language processing • Deep Learning for Computer Vision

The other two elective courses may be chosen from the above list or from other doctoral study programmes at the University of Ljubljana or other universities with a combined workload of at least 10 ECTS credits.

Seminars

Seminars are a compulsory part of the study programme and serve to ensure regular PhD student meetings and discussions about their research. There are five seminars in total: one in each of the first four semesters and one in the last semester of the study programme. The seminars are closely related to the students' research work; at these seminars the students present their work (e.g. papers, theses) to each other and to their mentors.

Research and the Doctoral Dissertation

The students' time is mostly devoted to carrying out their own scientific research with guidance from their mentors. The final result, the doctoral dissertation, should be an original contribution to science and must be written in accordance with the university's policy on doctoral dissertations.



How to Apply?

Enrolment Procedure

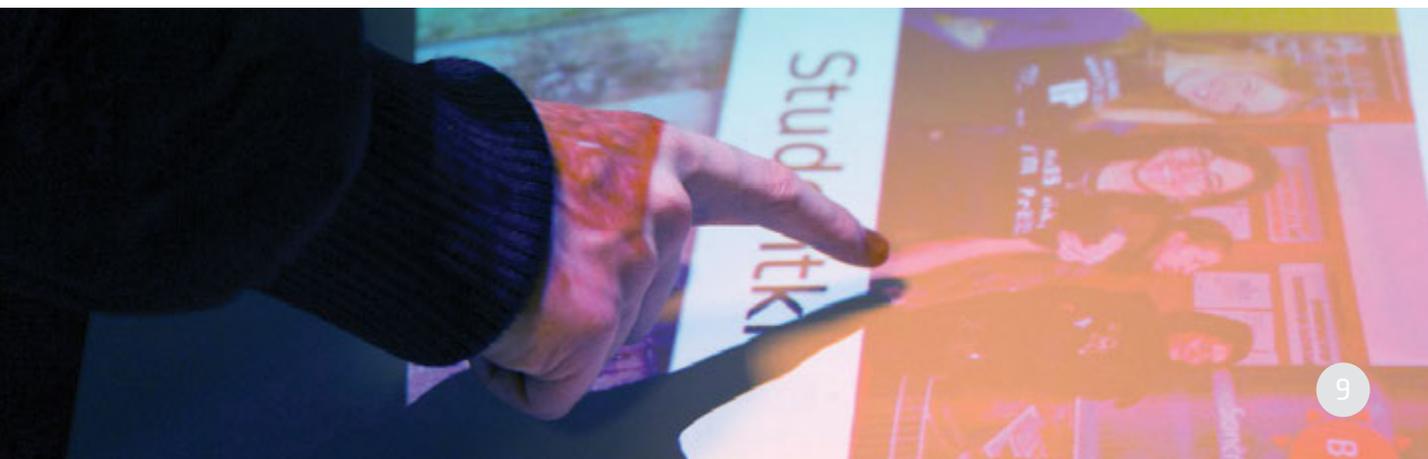
Students apply for studies via eVŠ web portal at <http://portal.evs.gov.si/prijava>. The application deadline is 1 June 2018.

Application process includes recognition of foreign education. Detailed information regarding application process is available in the call for enrolment.

Application Enclosures

- CV
- Motivation letter
- Two recommendation letters
- Original or the duplicate of the final certificate, representing general requirement for access to higher education in the country of issue, legalized on the basis of: the 1961 Hague Convention (at the court with territorial jurisdiction where the certificate or diploma has been issued); with properly filled in apostille form affixed of the Authentication of Documents in International Traffic Act. Countries for which no legalization is required: Austria, Bulgaria, Bosnia and Hercegovina, Cyprus (for documents issued by public higher education institutions and universities), Czech Republic, France, Greece, Croatia, Hungary, Republic of Macedonia, Romania.
- Certified Slovene or English translation of the certificate or diploma
- Photocopy of the original certificate or diploma
- Certified copies of the evidence on the contents and duration of education and the requirements fulfilled during the educational programme (Diploma supplement, annual report cards, transcripts or others);
- A short chronological description of the entire education prepared by the applicant.

Application process includes recognition of foreign education, documents needed are described above. Detailed information regarding application process is available in the call for enrolment.





”

**ŽIVA RAMŠAK,
PhD, Research Assistant at the
National Institute of Biology**

The interdisciplinary doctoral study programme has provided enough flexibility and independence, to be able to shape a career path of my own choosing. In addition it trained me in the skills required to navigate between diverse knowledge areas, particularly on the cusp between life and computer sciences. Alongside that, it broadened my overview of ongoing research internationally and expanded the network of collaborators, resulting in a well-rounded investigator equipped with means to adapt to future new experiences, thus allowing for personal growth as well.

Interdisciplinary Doctoral Study Programme in Biosciences

In addition to our core Doctoral Programme Computer and Information Science we also offer the Interdisciplinary Doctoral Study Programme in Biosciences. The programme is provided together with the Biotechnical Faculty, the Faculty of Electrical Engineering, the Faculty of Health Sciences and the Faculty of Mechanical Engineering. The study programme consists of organised learning (lectures, practicals, presentations of themes of doctoral dissertations, etc.) amounting to 60 ECTS credits, while the remaining 120 ECTS credits are devoted to individual research work for doctoral dissertation. More information on: <http://bioznanosti.si/en>

1st Year



2nd Year



3rd Year





MARINKA ŽITNIK, PhD

In my opinion PhD students should endeavour to pursue cutting-edge research in a topic they are curious and passionate about. With that in mind, the study involved may be challenging and hard work, but is enjoyable and most of all rewarding. One can expect to gain substantial insight into a specific area of computer science and possibly contribute to its development.

A photograph of three men in a computer lab. One man in a grey sweater is leaning over a laptop, pointing at the screen. Another man in a red sweater is sitting at the desk, looking at the laptop. A third man in a blue t-shirt is partially visible on the left. The background shows a window and a computer monitor.

Scholarships and Research Positions

The Faculty offers positions for:

- Teaching assistants
- Junior researcher positions
- Researcher positions

There are several scholarships available for doctoral students. The Public Scholarship, Development, Disability and Maintenance Fund of RS and other agencies offer several scholarships to foreign citizens for doctorate studies in Slovenia. Please carefully read the requirements published on website www.sklad-kadri.si/en/. If you have any questions, do not hesitate to contact our student affairs team at doctoral.studies@fri.uni-lj.si.

There are scholarships offered by private Slovenian company Gorenje for doctoral students, for more information please contact international.office@fri.uni-lj.si.

In 2018/2019 there are several scholarship programmes available for students from Palestine, The Hashemite Kingdom of Jordan, Georgia, Egypt and Tunisia.

Tuition Fees

In the academic year of 2018/2019 the tuition fee for the Doctoral Study Programme Computer and Information Science is 4000€ for the first two years and 3450€ for the last year. Whereas for the Doctoral Study Programme in Biosciences the tuition fee is 4000€ the first two years and the 3300€ for the last year.



”

MARINKA ŽITNIK

*PhD, Researcher at
Stanford University*

My research focuses on statistical modelling and analysis of multimodal data. I enjoy developing methods and emerging tools, and solving computational challenges in large-scale data systems. It has become increasingly common to observe and measure technological, biological, and information systems at different levels of granularity and from different perspectives. During my PhD study, I have developed new machine learning and data fusion methods to learn useful patterns from heterogeneous data systems.

My work has a wide range of application of which I focus on those from biomedicine, health care, genomics, and system biology. I use data analytic tools to automatically generate testable hypotheses from massive biological and clinical data. In several cases, predictions made by my computational methods have directly contributed to the new discoveries in the wet laboratory experiments. In one case, my methods predicted new bacterial resistance genes, which were afterwards validated by biologists at Baylor College of Medicine, USA. In another case, I used my data fusion methods to guide the experiments about a cancer-related enzyme family at Karolinska Institutet, Sweden.

I am now a postdoctoral scholar in the Computer Science Department at Stanford University. At Stanford, I work on new mathematical models to better understand the organizational, structure and dynamics of multimodal networks. Together with collaborators in the U.S. and Europe, we test the models for exciting applications in the biomedical world.



”

LUKA ČEHOVIN ZAJC

*PhD, Teaching Assistant at the
Faculty of Computer and
Information Science*

The focus of my research work during my PhD studies was visual tracking. I have developed algorithms that are capable of predicting the position of deformable, non-rigid objects in real time video streams. Having to evaluate these algorithms, I have also worked on improving visual tracking evaluation methodology. My work has been published in several major computer vision conferences and journals and has been the basis for the methodology used in the VOT Challenge, an initiative that organizes competitions and workshops with the goal of advancing the field of visual tracking. Since my PhD I have been working on various projects related to computer vision, robotics, and human-computer interaction.



”

DOMEN KOŠIR

*PhD, Senior Software Developer
at Celtra Ltd.*

I have worked as a developer in the online advertising industry and found myself wondering how the large volume of data could be used to make advertising more efficient. I enrolled in the PhD study at the Faculty of Computer and Information Science as a researcher from the industry. In the following years I focused mainly on web-related data mining problems, like profiling web users, building recommendation systems, and analysing advertising-related data.

I have developed several new algorithms and published them in scientific journals. My continued work in the advertising industry enables me to use newly acquired knowledge in everyday work. Knowledge brings new opportunities!

Research Work

The research work carried out in our 19 laboratories is diverse. The research is particularly intense in field of artificial intelligence and related disciplines, such as machine learning, data mining and computer vision, and applied to different domains from bioinformatics and cognitive modelling to intelligent robotics. Another important research area is data acquisition and management as well as integration of information systems. We are addressing various other research questions from different fields of computer and information science which can be seen through the keywords on the next two pages and the list of ongoing research projects. Doctoral students are actively involved in carrying out their research in collaboration with other researchers.



”

KAJA ZUPANC, PhD student

I see the doctoral program as the stepping stone to a research career. It provides students an opportunity to gain a broad range of research experiences, important support from an advisor, and encourages them to continuously share their findings and ideas with other PhD students and academics. It is often time-consuming and requires a lot of hard work, however, if a student is curious and possesses the necessary skills and passion for research, the program can be an inspiring choice.

**THEORETICAL
COMPUTER SCIENCE
AND MATHEMATICAL
MODELS**

Laboratory for
Algorithms and
Data Structures
Prof. Borut Robič, PhD

**SYSTEMS
AND
NETWORKS**

Laboratory for
Mathematical Methods
in Computer and
Information Science
Assoc. Prof. Polona Oblak,
PhD

Laboratory for
Cryptography and
Computer Security
Prof. Aleksandar Jurišić, PhD

Laboratory for
Adaptive Systems
and Parallel
Processing
Prof. Branko Šter, PhD

Laboratory for
Ubiquitous Systems
Andrej Brodnik, PhD

Laboratory of
e-media
Prof. Denis Trček, PhD

**SOFTWARE
ENGINEERING
AND INFORMATICS**

Information Systems
Laboratory
Assist. Prof. Rok Rupnik, PhD

Laboratory for
Data Technologies
Prof. Marko Bajec, PhD

Laboratory for
Integration of
Information Systems
Prof. Matjaž Branko Jurič,
PhD

Software Engineering
Laboratory
Prof. Viljan Mahnič, PhD



Research Projects

Research work at the Faculty is carried out in 19 different laboratories. It is made through various projects funded by the European Commission, the Slovenian Research Agency, industrial partners and other funding agencies. Doctoral students participate in these projects, gaining international experience as a result.

Our laboratories are partners on several research projects funded by the European Commission:

FLEXICIENCY – Energy Services Demonstrations of Demand Response, Flexibility and Energy Efficiency Based on Metering Data • SWITCH – Software Workbench for Interactive, Time-Critical and Highly Self-Adaptive Cloud Applications • MONROE RICERCANDO – Rapid Interpretation and Cross-Experiment RootCause Analysis in Network Data with Orange: Ricercando • CROSSBOW – CROSS BOrder management of variable renewable energies and storage units enabling a transnational Wholesale market • DIGITRANS – Digital Transformation in the Danube Region • HUBLINKED – Strengthening Europe's Software Innovation Capacity • GETM3 – Global Entrepreneurial Talent Management • SILICOFCM: In Silico trials for drug tracing the effects of sarcomeric protein mutations leading to familial cardiomyopathy.

Current programmes, basic research and applied projects, bilateral and other projects funded by the Slovenian Research Agency

Artificial Intelligence and Intelligent Systems • Computer Vision • Synergy of the Technological Systems and Processes • Pervasive Computing • Parallel and Distributed Systems • Designed Cellular Logic Circuits • Trust Management and Reputation Systems • Metabolic and Inborn Factors of Reproductive Health, Birth • Open Information Extraction for Slovene and Serbian Languages • Intelligent Computer Techniques for Improving Medical Detection, Analysis and Explanation of Human Cognition and Behaviour Disorders • Automatic Detection and Localization of Ischemia by the use of Data Mining Algorithms • Graph Optimisation and Big Data • Advanced sensing technologies and modelling for sulfur compounds in food cold chain traceability • Development of an open-source platform for multivariate analysis of FTIR data • Data Fusion in Systems Biology of a Social Amoeba Dictyostelium • Advancement of Computationally Intensive Methods for Efficient Modern General-Purpose Statistical Analysis and Inference • Multiobjective discovery of driving strategies for autonomous vehicles • Centre for Language Resources and Technologies of University of Ljubljana • Web-based eBooks with activities: internationalization of Natural Language Processing

Current structural funds and other national projects:

BioPharm.SI: Next Generation of Biologics • EkoSMART – a Smartcity Ecosystem • GOSTOP – Building Blocks, Tools and Systems for the Factories of the Future • SocioPower • Towards quality of Slovene textbooks • Reading Literacy and Development of Slovenian Language • Natural Science and Mathematical Literacy: Promoting Critical Thinking and Problem Solving • Upgrade of Corpuses Gigafida, Kres, ccGigafida and ccKress • Thesaurus of Modern Slovene: By the Community for the Community.

The faculty cooperates with partners from industry and universities abroad. Some of our most important European projects are described below.



CROSSBOW, Border management of variable renewable energies and storage units enabling a transnational Wholesale market

CROSSBOW project aims at the successful deployment of a set of technological solutions which will enable to increase the shared use of resources to foster transmission networks crossborder management of variable renewable energies and storage units. This will enable a higher penetration of clean energies whilst reducing network operational costs and improving economic benefits of RES and storage units. The project will demonstrate a number of different technologies offering TSOs increased grid flexibility and robustness through: a better control of cross-border balancing energy at interconnection points; new storage solutions – distributed and centralized-, offering ancillary services to operate Virtual Storage Plants (VSP); better ICT and Communications – i.e., better network observability, enabling flexible generation and Demand Response schemas and the definition of a transnational wholesale market, proposing fair and sustainable remuneration for clean energies through the definition of new business models supporting the participation of new players and the reduction of costs.



EkoSMART, A Smartcity Ecosystem

The purpose of the EkoSMART programme is to develop a smart city ecosystem with all the support mechanisms required for the efficient, optimised and gradual integration of various smart city areas into a unified and well-connected system of value chains. The programme focuses on three key pillars for smart cities (health, active life and mobility) and is strategically linked with municipalities and other important smart city domains, such as energy, smart buildings, citizen involvement and engagement and smart communities. EkoSMART introduces a universal architecture for a smart city that is based on self-learning and self-optimising agents which can find a common Nash equilibrium between heterogenous sources. This architecture allows for the realisation of smart city concepts such as interoperability, adaptability, self-configurability, open data,



semantic interoperability and the integration of social capital. In economic terms, the vision of the EkoSMART programme is to enable Slovenian smart city innovations and products to enter the global market. This vision will be achieved through the following key approaches: the concentration of critical mass of knowledge and experience; a focus on the user; evolutionary development; and flexible architecture.



GOSTOP, Building Blocks, Tools and Systems for the Factories of the Future

The aim of the proposed GOSTOP programme is to accelerate the development of the Factories of the Future concept in Slovenia and to provide solutions to the current needs of Slovene industry. In GOSTOP, a total of 13 companies and 6 research organisations which had compatible research and development programmes in the Factories of the Future concept joined forces to push forward its development. Four areas were identified in which decisive breakthroughs could be achieved in Slovenia in the near future: control technologies, tooling, robotics, and photonics.

Faculty of Computer and Information Science is collaborating with other partners in the area of robotics. The main goal is to develop flexible and adaptable technologies that would allow for fast and simple adaptation to a new product in the production process. One of the mayor enabling technologies in this respect is machine vision. Our goal is to develop efficient machine vision algorithms, coupled with machine learning approaches, which would allow for fast and flexible adaptation of visual inspection systems to be able to deal with novel quality control problems. We base our research on latest developments in deep learning and develop novel algorithms that are able to replace the need for handcrafting solutions for individual problem domains with a more general approach based on learning a solution by observing a number of exemplar images



Employment Opportunities

Employment opportunities for Computer and Information Science doctoral graduates are very broad. Primarily, the programme trains doctors of science who become high-level professionals working in enterprises and social institutions that develop computer or IT solutions. These institutions also use solutions for innovation purposes to gain competitive advantages or to improve the quality of business and work. Typical roles are leadership and R&D. Due to a great need for such professionals at home and around the world, we estimate that the employability of doctoral students who complete the programme is high. The fact that there is a high demand for such qualified personnel is an additional motivation for future students to enrol in this study programme. This is reinforced by the experiences of students who have completed their doctorates, given the fact that they found jobs without any difficulty.



”

MIHA ŠTAJDOHAR,
PhD, CTO and co-founder of Genialis – friendly bioinformatics

The fruits of research are typically left hanging on the prototype "branch". The objective of research is to come up with ideas, publish them and then move on to the next big thing. As an engineer at heart, I was irritated to see all that potential just hanging in my lab's GitHub branches. I always wanted to build products and I saw the opportunity to do something great. We founded a spin-off

company, licensed the concepts invented at the FRI and partnered up with Biolab, which continues to advise us. I am delighted that our research ideas have now helped create a product that helps many life scientists learn from their data. We continue to grow and search for talents to join us in our endeavours.



”

**ŠTEFAN FURLAN,
PhD, CEO at Viewly Inc. and Dodona Analytics**

The doctoral programme has deepened my analytical and critical thinking. The ability to think analytically is vital when it comes to solving everything from small everyday problems to the most complex strategic business solutions. On the doctoral programme I was given the opportunity to

work in very interesting areas of scientific research and, for me, this was also a real test of my perseverance. I also broadened my connections in Slovenia and abroad, meeting several interesting and highly competent people with whom I am currently working and will continue to do so in the future.



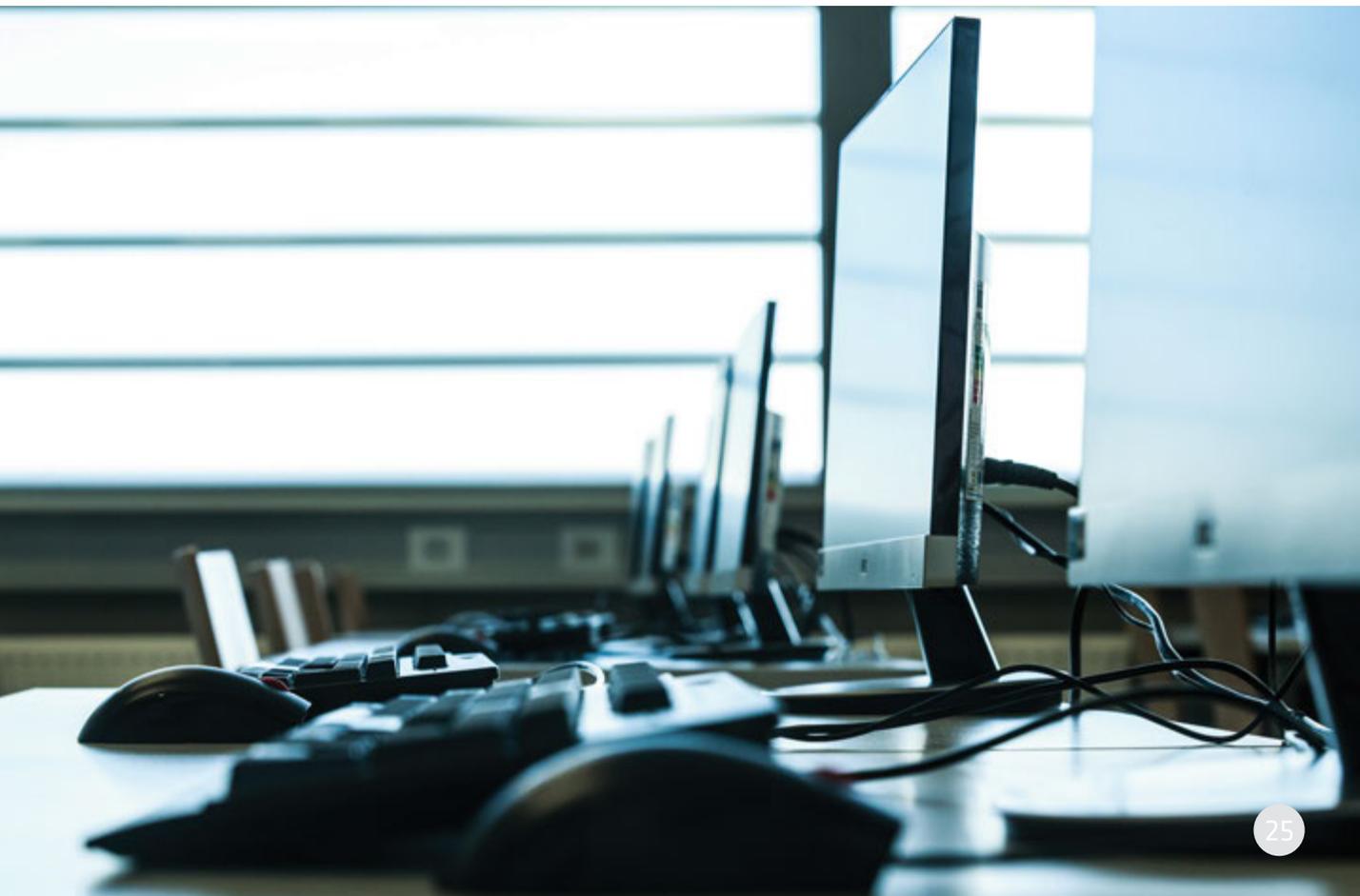
Modern Facilities

In 2014, the Faculty moved to a new building in Brdo pri Ljubljani. This followed a several-year construction project of new buildings for the Faculty of Chemistry and Chemical Science and the Faculty of Computer and Information Science. This is the largest investment in the history of the University of Ljubljana and the largest project in Slovenia to be co-financed by European funds.

The new construction comprises three buildings, with the Faculties sharing the central one. This contains a large lecture hall with 300 seats, a large modern library with a reading room, a copy shop, and a restaurant.

The Faculty of Computer and Information Science's main building has a lecture hall with 200 seats, 8 smaller lecture halls, 12 computer rooms, over 20 research labs, a faculty lounge, and offices for support staff.

By moving the whole faculty under one roof, the academic community has been strengthened and invigorated, as there is more interpersonal communication and collaboration. In the new open and well lit design, a lot of space is reserved for informal socialisation and exchanging ideas, while the modern Faculty hosts external lecturers, conferences, workshops, and summer schools, which enrich the educational and research processes with new ideas, experiences, and best practices.





University of Ljubljana

The University of Ljubljana is an institution with a very rich tradition. It was established in 1919 on the foundations of a long-established pedagogical tradition. It is a very large university, with around 50 000 undergraduate and postgraduate students, and over 300 undergraduate and postgraduate study programmes. It employs approximately 6000 higher education teachers, researchers, assistants and administrative staff in its 23 faculties and 3 arts academies.

Slovenia

Slovenia is a small country in central Europe, known for its natural beauties and picturesque architecture. Being a member of the European Union, Slovenia is characterized by its high life quality and relaxed way of living. Computer Science and IT is a flourishing area in the country, with a lot of opportunities to be explored by young researchers and entrepreneurs.



Useful Information

Student Life in Ljubljana

During their stay in Ljubljana all students are entitled to food and transport subsidies. The price for a meal in a restaurant is 2-5€ and 20€ for a monthly bus ticket.

International students should find a private room as there are no dormitories available for international students. The average price for a room is 150–250€. Living expenses (rent, food, public transport, books) in the Republic of Slovenia roughly amount to 500€ per month.

Students from EU countries and countries with which Slovenia has an agreement can enter without a visa and stay up to 90 days. They can apply for the residence permit in Slovenia. Non-EU students need a visa to enter the Republic of Slovenia.

Contact Information

*Faculty of Computer and Information Science
International Office*

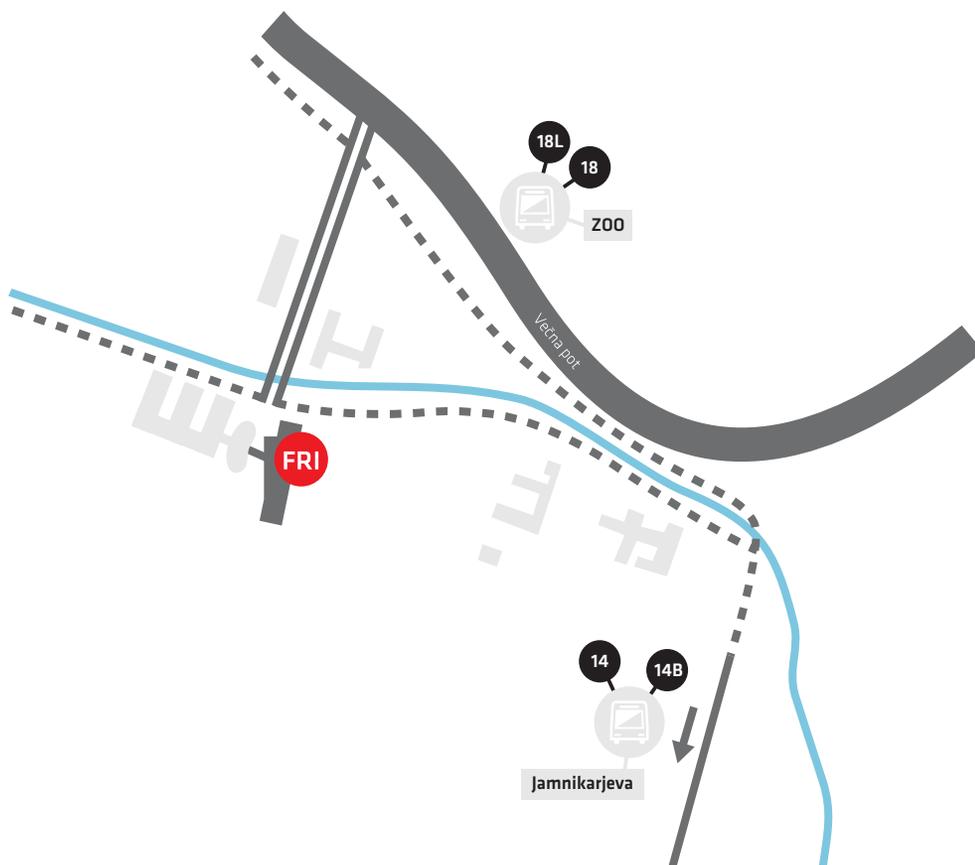
Ms. Vesna Gračner Žitnik
international.office@fri.uni-lj.si
Phone: +386 1 479 8249





The Faculty of Computer and Information Science of the University of Ljubljana is located in the South-West part of the city, in a pleasant green environment next to the Rožnik hill. The area has been evolving into a hub, connecting technology and natural science students and researchers.

The Faculty can be accessed by city bus routes nr. 14, 14B, 18 and 18L. Leading to the Faculty are also a nice bike and walking trail.



University of Ljubljana
Faculty of Computer and Information Science
Večna pot 113
1000 Ljubljana
Slovenia
www.fri.uni-lj.si

International Office
+386 1 479 8249
international.office@fri.uni-lj.si

 Fakulteta za računalništvo in informatiko

 Alumni klub FRI

