





Kauno technologijos universitetas

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Type of organisation:

SME School University Public Authority
 Training No Profit NGO

Fields of action :

SMEs Youth Universities Public Authorities
 Equal opportunities Schools Unemployed

Other (Specify)

Description of the organisation

Kaunas University of Technology (KTU) – the largest technical university in Lithuania, known for its linkages with business, leadership in scientific research, flexible interdisciplinary study programs. KTU is situated in Kaunas, the second largest city of Lithuania, which is a significant centre of industry, transport, science and culture.

KTU Mission is to provide a research-based studies of international level, to create and to transfer knowledge and innovative technologies for sustainable development and innovative growth of the country, to provide an open creative environment that inspires leaders and talented individuals.

There are 9 faculties in KTU, including the Faculty of Informatics. Faculty of Informatics in KTU (KTU IF) has all possibilities to develop studies processes and their quality and accessibility, e-Learning and strong, well developed infrastructure for studies.

The University successfully implements European education programmes and closely collaborates with Lithuanian and foreign industry. University scientists carry out 70 per cent of country's higher education researches for business. Strategic priorities of KTU activities: talented and motivated students, teachers and researchers, a critical mass of world-class teachers, researchers and foreign students, unity of studies and science, close contact with business and industry, interdisciplinary and trans-domain research and studies, international recognition in advanced knowledge and future technologies development and transfer, participation in global knowledge networks, quality of activities and efficient management, inspiring and friendly environment, dissemination of knowledge and values among the society.

Experience of the organization in previous European projects

Our scientists actively participate in different national and international programs, projects, researches, conferences while producing different outputs and presenting publications. We develop more than 15 projects per year in the Faculty of Informatics which involves different departments.

Some of KTU strategic priorities, which meet the project aims are: a considerable number of world-class teachers, researchers and international students; unity of studies and science; interdisciplinary and trans-domain research and studies; international recognition in advanced knowledge and future technologies development and transfer; inspiring and friendly environment; dissemination of knowledge and values in the society and others.

The members of the team, who takes care of project activities participated in previous Erasmus+ KA2 project E-learning From nature: The E-Learning From Nature project proposed innovative teaching methodologies to science teachers, enhancing a proactive approach from the students towards the learning of scientific subjects. The students were invited to learn science through nature, relying on a collection of material (information sheets, photos, videos and drawings available in digital format, and also e-lessons) about the flora, the fauna, the natural elements and any other human intervention of scientific interest of a specific environmental area. The connection between the natural elements with school scientific curricular activities and the related basic skills to be acquired was a concern at every step.

Erasmus+ projects into which the team who will cooperate in this project was involved during the last years:

- Videogames for Teachers (V4T) (2017-2019)
- Geoethics Outcomes and Awareness Learning (GOAL) (2017-2020)
- MathE - Improve Math Skills in Higher Education (2018-2020)
- Councelling for Refugee and Migrant Integration into the Labour Market - Development of Courses for Higher Education and Public Employment Services" (CMinaR) (2016-2019)
- Connecting Career Counselling and Human Resource Development in Enterprises for Higher Education and Training in Practice (2019-2022)

Scientific projects:

- (*researchers: Dalia Čalnerytė, Andrius Kriščiūnas*) Design of Machine Learning Based Algorithm for Personnel Scheduling, contract No. PP59/2013, implementation period: 2020.04-2020.12, funding source: KTU
- (*researchers: Rimantas Barauskas, Andrius Kriščiūnas, Dalia Čalnerytė*) Industrial mushroom cultivation technology based on Artificial Intelligence, contract No. SV9-2225, KTU-UAB Aksonas, implementation period: 2019.03-2020.12
- (*researchers: Andrius Kriščiūnas, Dalia Čalnerytė*) Combination of Image Decomposition and

Artificial Intelligence to Identify Evolution of Process, contract No. PP-91L/19, implementation period: 2019.04-2019.12, funding source: KTU

- (researchers: *Rimantas Barauskas, Andrius Kriščiūnas, Dalia Čalnerytė*) Analysis of the feasibility to create a real estate market change assessment system, contract No. SV9-2070, KTU-UAB Lituka, implementation period: 2018.12-2019.03
- (researchers: *Rimantas Barauskas, Dalia Čalnerytė, Andrius Kriščiūnas*) Algorithm to construct a schedule for flight service staff, contract No. SV9-1470, KTU-UAB NFQ Technologies, implementation period: 2018
- (researchers: *Rimantas Barauskas, Dalia Čalnerytė, Andrius Kriščiūnas*) Extension of algorithm to construct a schedule for flight service staff, contract No. SV9-1799, KTU-UAB NFQ Technologies, implementation period: 2018
- (researchers: *Rimantas Barauskas, Dalia Čalnerytė, Andrius Kriščiūnas*) Numerical Models of Short-Wave Physical Behavior in Micro and Nano Structures, contract No. PP-32/08, implementation period: 2018.04-2018.12, funding source: KTU
- (researchers: *Rimantas Barauskas, Dalia Čalnerytė, Andrius Kriščiūnas*) Algorithm to identify time moment of pressure drop with respect to pressure monitoring results, contract No. SV9-1421, KTU-UAB Axioma, 2017
- (researchers: *Rimantas Barauskas, Dalia Čalnerytė*) Numerical modelling and investigation of thermal properties of ceramic-containing textile materials, contract No. MIP-044/2014, implementation period: 2014 – 2016, funding source: LMT (Lithuanian Science Board)

Experience and Expertise of the organization in the project's subject area

One of main research areas in the Faculty of Informatics is e. learning technology creation and efficient applications development, studies improvement processes. Also personnel participates in Studies programs quality evaluation, administration and management. Researchers and academic personnel does research in gamification for teaching process, develops videogames for teaching, works in 3D, augmented reality projects.

One of aims in the University, as well in the faculty is to involve students and teachers from different educational institutions into projects development, analysis stage, as well as in dissemination, valorisation and exploitation processes.

Our scientists actively participate in different national and international programs, projects, researches, conferences while producing different outputs and presenting publications. We develop more than 10 different projects per year in the Faculty of Informatics which involves different departments. Some of KTU strategic priorities, which meet the project aims are: a considerable number of world-class teachers, researchers and international students; unity of studies and science; interdisciplinary and domain research and studies; international recognition in advanced knowledge and future technologies development and transfer; inspiring and friendly environment; dissemination of knowledge and values in the society and others.

One of main research areas in the Faculty of Informatics is e. learning technology creation and efficient applications development, studies improvement processes. Also personnel participates in Studies programs quality evaluation, administration and management. Researchers and academic personnel does research in gamification for teaching process, develops videogames for teaching, works in 3D, augmented reality projects.

Employees which collaborate in COSY project are from Faculty of Informatics, different departments in IF: Dean's office (for management), Software Engineering Department, Department of Applied Informatics. Researchers develop streamline scientific research and implementation activities in the area of information and communication technologies, videogames, assessment of studies modules, e-testing platforms, researches, improvements of study processes and blending them with business challenges. One of aims in the University, as well in the faculties, which takes part in COSY project, is to involve students and teachers from different educational institutions into projects development, analysis stage, as well as in dissemination, valorisation and exploitation processes.

Contributions that can be provided to the project

- Participation in research in the project and developing intellectual outputs
- Administration of the project activities and finances ensuring correct management, as well as fluent collaboration with project coordinating and managing institutions.
- Involvement of associated partners/beneficiaries and other needed institutions of the project and ensuring collaboration with them.
- Producing needed reports
- Participating in project dissemination, evaluation, quality ensuring activities
- Developing project results and other needed activities

Reasons of involvement in the project

We seek to achieve the aim and objectives related to the project and to develop activities together.

We also seek to get and to share our practise and experience with other European institutions.

Within the project we seek:

- Improvement of our school students' achievements in literacy and digital skills making reference to the cultural heritage surrounding the students that will have to be presented to other European students through the reference to traditional tales and stories that are linked to it.
- Promotion of a multidisciplinary approaches in education based on references to be made to historical, cultural, geographical and artistic issues in the presentation of the local cultural heritage of the students.
- Promotion of a learner-centred pedagogical approaches where each single student involved in the project - supported by their teachers and the project experts - will find his/her own way to present sample of the local cultural heritage to other European students involved.
- Integration of ICT in the learning process as the presentation of the samples of the local cultural heritage will be made through the development of an online interactive map as well as an App.
- Exploitation of new forms of flexible learning based on an appropriate use of ICT as the project's deliverables will be available online and on mobile. It will therefore be possible for the students involved to learn about the European cultural heritage of the regions involved, presented referring to traditional tales and stories by other students, via their computer and via their mobile telephones.
- Creation of a transnational network of secondary schools that will be directly involved in the project activities as associated partners.

As well for teachers, researchers, students benefit will feel on rising their qualification (to teach and train students on project's topics, to develop activities together).

Contact Person's Experience and Expertise

Vida Drašutė is project manager in KTU IF Dean's office and has 15 years of experience in projects management, as well as in formal and non-formal education improvement and development analysis of educational possibilities, quality, adaptation of different methodologies in various education levels, development of critical thinking, e-learning and tools for e-learning encouragement in educational institutions, organization of courses, collaboration with different educational institutions. She is a board member of Lithuanian Distance and eLearning Association and evaluator of e-learning programs provided by different institutions. She has long lasting experience in projects coordination while she has managed and coordinated more than 30 projects in different areas on national and international levels. Her main duties are management, research and analysis work. She is also responsible for projects' and events' dissemination and public relations.

Researcher dr. **Dalia Čalnerytė** is lecturer at Applied Informatics Department, Faculty of Informatics, KTU and a member of the research group "Multi-disciplinary models" (https://en.ktu.edu/research/research-at-divisions/rg_multi-disciplinary-models/). Her area of research is numerical analysis, optimization and modelling of physically based behavior. She teaches practice of the KTU courses on the topics of "Numerical Methods and Algorithms", "Algorithm Analysis and Design", "Computational Intelligence and Decision Making". D. Čalnerytė prepared Moodle courses for the KTU modules on the topics of modelling of

the physical behavior and numerical analysis in cooperation with the other researchers of the group.

Researcher dr. **Andrius Kriščiūnas** is lecturer at Applied Informatics Department, Faculty of Informatics, KTU and a member of the research group “Multi-disciplinary models”. He works on scientific projects mostly related to topics of physical based behavior simulations with finite element methods, optimization and computer vision models. He also teaches theory and practice of the KTU courses such as “Algorithm Analysis and Design”, “Numerical Methods and Algorithms”, “Computational Intelligence and Decision Making”, etc. In cooperation with the other researchers of the group he prepared several Moodle courses.

Researcher habil. dr. **Rimantas Barauskas** is a professor at Kaunas University of Technology (KTU) and specializes in the development of modelling and simulation algorithms for various physical, mechanical, biomechanical, biomedical and integral systems. The researcher is the author of several textbooks and Moodle courses on the subject of finite element modelling. He is also the coordinate professor of the main academic courses on the topic of numerical analysis and modelling of the physically based behavior. Habil. dr. R. Barauskas published more than 200 articles based on the numerical modelling and its application, more than 30 articles were published in the journals indexed in the Web of Science with the impact factor. Numerous research projects dealing with physically-based behavior of complex systems have been carried out under his supervision and participation.