Education Systems Group

Vilnius University

Research group activities

Computer Science Education Research Group conducts research in learning and teaching that involves educational practice in Computing and Engineering Education Research as well as STEM (Science, Technology, Engineering, Mathematics) education. The group conducts research in technology-enhanced learning: intelligent technologies for learning and adaptation for cultural environment and computational thinking.

- The theoretical focus is to gain insights in how informatics can be understood and learned by students, how informatics can be taught, and how to research these entities and the relation between them;

- The pragmatic focus is to enhance students' learning and academic teaching practice in informatics and informatics engineering;

- The theoretical and pragmatic focus to computational thinking and evaluating the quality of personalised learning software;

- The theoretical and pragmatic focus to creating personalised intelligent multi-agent learning system.

The group investigates high school students' understandings and experiences of programming and fundamental concepts in informatics. We have carried out for many years a large scale data collection on students' participation in Olympiads and contests in informatics and computational thinking. By investigating new innovative learning environments and learning tools we expect to build evidence for the effectiveness of combined technical and pedagogical innovations, i.e. how the tools or environments are used in practice.

Proposal

We are doing:

- Evaluation of quality of cultural aspects of human-computer interaction;

- Localization of software especially for education purposes;

- Educational workshops for all teachers on using technologies in learning and teaching practice;

- Educational workshops for computer science teachers in deepening subject knowledge and skills.

The examples below demonstrate where we could help you:

- to develop smart tools for creating educational interactive educational tasks;

- to develop intelligent virtual environment for computer science and computing engineering education;

- to make a network of computer science Education Research groups in Europe and over the world;

- to make a network of doctoral students in informatics and computing engineering education research field;

- to develop interlinks between students' personal characteristics and learning components (learning objects, methods, activities, tools) and corresponding ontologies and recommended systems;

- to develop a personalised intelligent multi-agent learning system for schools and universities;

- to develop a system for quality evaluation of human-computer interaction's cultural aspects.

Meet our team

Leader reseacher:
Prof. Dr. Valentina Dagienė

Team members:
Vladimiras Dolgopolovas, Dr. Eglė Jasutė, Dr. Tatjana Jevsikova, Dr. Anita Juškevičienė, Assoc. Prof. Dr. Eugenijus Kurilovas, Dr. Jūratė Skūpienė.

PhD students:
Gytautas Beresnevičius, Andrius Berniukevičius, Viktorija Dvareckienė, Daina Gudonienė, Irina Krikun, Oleg Mirzianov, Gabrielė Stupurienė, Lina Vinikienė.

Research outcomes

Research group has a wide research network on CS education with more than 50 countries.

- International journals „Informatics in Education" – the journal is indexed / abstracted in Thomson Reuters Web of Science (Emerging sources), Scopus, Inspec etc. scientific databases;

- International journals „Olympiads in Informatics" – this is the only one journal with focus on informatics education for talented students; special issue each year on informatics education in particular country (2016 – Russia, 2017 – Iran, 2018 – Japan);

- Continuation of the Annual international conference on Informatics Education of gifted students (joint with International Olympiad in Informatics);

- Continuation the Bebras challenge on informatics and computational thinking – going deeper to learn informatics fundamentals;

- International conferences, bringing together CS education and technology-enhanced learning communities, have been organized: ITiCSE 2015, IFIP 2015, ICT projects for schools 2014; Web 2.0 2010, ISSEP 2006. In 2018 the international conference on Constructionism will be organised http://www.constructionism2018.fsf.vu.lt

- International Doctoral Consortium on computer science and computing engineering research has been organized annually since 2010;

- All together more than 120 research papers and some methodological books have been published during last 5 years;

- Informatics terminology has been systematized and several dictionaries developed;

- Numerous (more than 50) digital resources, educational and common use software units have been culturally adapted for the (educational) society;

- More than 10 international and national projects dealing with technology-enhanced learning, software localization, informatics and computing engineering education research have been successfully implemented during last decade;

- Participation in more than 40 Editorial (Review) Boards of well-known scientific journals and Conference Program Committees (26 are indexed / abstracted in Web of Science);

- Guest editing several special issues in scientific journal indexed / abstracted in Web of Science.

Contacts

Prof. Dr. Valentina Dagienė
Institute of Data Sciences and Digital Technologies
Vilnius University

Phone: +370 5 2109732
E-mail: valentina.dagiene@mii.vu.lt

More about the institute: http://www.mii.lt/en

Department for Research
and Innovation
Vilnius University

Phone: +370 5 2687006
E-mail: innovations@mid.vu.lt

More information: http://www.innovations.vu.lt