DEPARTMENT OF CYBERNETICS AND ARTIFICIAL INTELLIGENCE

http://www.tuke.sk/kkui/
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Head of Department
prof. Ing. Peter Sinčák, CSc.
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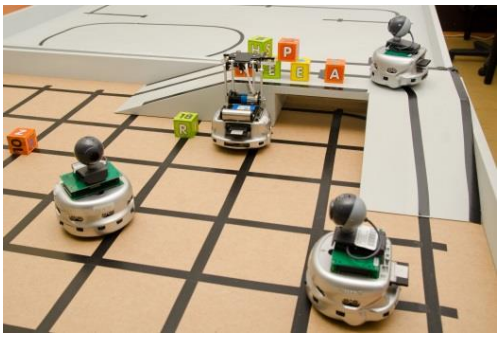
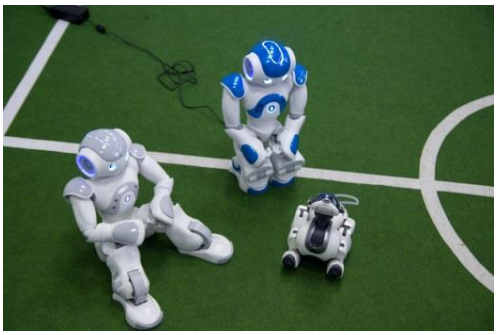
1 DEPARTMENT'S PROFILE

The Department of Cybernetics and Artificial Intelligence (DCAI) is responsible for education in two study programs: Intelligent Systems, and Business Information Systems at all three levels of university education (bachelor, master and PhD).

The main research topics at the DCAI are computational intelligence techniques for modeling of intelligent systems and miscellaneous applications, e.g. in robotics; intelligent methods and algorithms for control and modeling of large-scale systems; internet of things; risk-sensitive diagnosis of uncertain systems; intelligent decision support systems; pattern recognition; knowledge discovery; knowledge technologies for information retrieval and knowledge management and business information systems.

The predecessor of the Department was founded in 1964. Department of Cybernetics and Artificial Intelligence was adapted in 1989. Currently it has 22 staff members, 28 internal and 6 external Ph.D. students. There are 3 research centers within the department: Center of Intelligent Technologies, Center of Applied Cybernetics and Center of Business Information Systems (http://web.tuke.sk/kkui/en/vyskumne-skupiny-a-projekty). The Department is involved in a number of research and educational projects (see below).

2 STAFF

Professors:
prof. Ing. Dušan Krokavec, CSc.
Dr.h.c. prof. Ing. Ladislav Madarász, CSc.
prof. RNDr. Eva Ocelíková, CSc.
prof. Ing. Ján Paralič, PhD.
prof. Ing. Tomáš Sabol, CSc.
prof. Ing. Ján Sarnovský, CSc.
prof. Ing. Peter Sinčák, CSc.
prof. Ing. Iveta Zolotová, CSc.

Associate Professors:
doc. Ing. Peter Butka, PhD.
doc. Ing. Anna Filasová, CSc.
doc. Ing. Anna Jadlovská, PhD.
doc. Ing. Ján Jadlovský, CSc.
doc. Ing. Marián Mach, CSc.
doc. Ing. Kristína Machová, CSc.

Assistant Professors:
Ing. František Babič, PhD.
Ing. Peter Bednár, PhD.
Ing. Vladimír Gašpar, PhD.
Dr. Ing. Vratislav Hladký
Ing. Slávka Jadlovská, PhD.
Ing. Rudolf Jakša, PhD.
Ing. Ján Liguš, PhD.
Ing. Jana Ligušová, PhD.
Ing. Peter Papcun, PhD.
Ing. Martin Sarnovský, PhD.
Dr. Ing. Ján Vaščák
Ing. Mária Virčíková, PhD.

Researchers:
Ing. Marek Bundzel, PhD.
Ing. Jozef Wagner, PhD.
Ing. Gabriel Tutoky, PhD.

Technical Staff:
Tatiana Baňasová
Renáta Giannusis

Ph.D. Students:
1st.
Internal
Ing. Martin Čertický
Ing. Jozef Mocnej
Ing. Anna Novická

Ing. Miroslav Smatana
Ing. Peter Takáč
Ing. Michal Vadovský
Ing. Dominik Vošček
Ing. Michal Varga

2nd. **Internal**
Ing. Ján Čabala
Ing. Jakub Hvizdoš
Ing. Martin Mikula
Ing. Martin Miškuf
Ing. Miroslava Muchová
Ing. Jaroslav Ondo
Ing. Matej Oravec

3rd. **Internal**
Ing. Tomáš Cádrik
Ing. Michal Kopčík
Ing. Tomáš Lojka
Ing. Gergely Magyar
Ing. Ladislav Nyulászi
Ing. Michal Puheim

4th. **Internal**
Ing. Jakub Čerkala
Ing. Cecília Havrilová
Ing. Pavol Liščinský
Ing. Peter Michalik
Ing. Martina Tarhaničová

5th. **Internal**
Ing. Mgr. Peter Koncz
Ing. Alexandra Lukáčová

3 LABORATORIES

- CyberEduCentre
  http://cybereducentre.fei.tuke.sk/cybereducentre/index.html
- CyberVirtLab http://cybervirtlab.fei.tuke.sk/CyberVirtLab/
- Laboratory of Intelligent Control Network and Software Systems for Control (L-509b), http://cybereducentre.fei.tuke.sk
- Laboratory of Cybernetics (L-513)
- Laboratory of Intelligent Cybernetic Systems (L-536)
- Center for Intelligent Technologies: Laboratory of Autonomous Systems (LAS-CIT), Laboratory of Humanoid Robots (LHR-CIT) http://www.ai-cit.sk
- Research Center of Modern Control Techniques and Industrial Informatics – CMCT_II (http://kyb.fei.tuke.sk)
- Laboratory of Production Lines and Image Recognition (V147 CMCT_II)
  http://kyb.fei.tuke.sk/laben/miest/V147.php
- Laboratory of Process Control (V144 CMCT_II)
  http://kyb.fei.tuke.sk/Laboratoria/miest/V144.php

- Laboratory of ALICE experiment - CERN (V142b CMCT_II)
- Laboratory of Mechatronics Systems (V142 CMCT_II) http://kyb.fei.tuke.sk/Laboratoria/miest/V142.php
- Laboratory of Robotics (V134 CMCT_II) http://kyb.fei.tuke.sk/Laboratoria/miest/V134.php
- Laboratory of Knowledge Technologies (V-101a)
- Laboratory of Computer Control Systems Design (V101b CMCT_II), http://kyb.fei.tuke.sk/laben/miest/V101b.php
- Laboratory of intelligent control systems of aircraft engines (in cooperation with Faculty of Aeronautics) http://lirslm.fei.tuke.sk
- Laboratory of Business processes (B11)

4 TEACHING

4.1 Undergraduate Study (Bc.)

Subject	Semester	Lectures/exercises (hours per week)	Name of lecturer
Foundations of systems intelligence	2nd	2/2	Sinčák
Foundations of Automatic Control	2nd	2/2	Jadlovská, Jadlovský
Introduction to Business Informatics	2nd	2/2	Paralič
Computational artificial intelligence	3rd	2/2	Sinčák
Simulation Systems	3rd	2/2	Jadlovská A., Jadlovská S.
Simulation systems in Business Information Systems	3rd	2/2	Butka
Control and Visualization Systems	3rd	2/2	Zolotová
Knowledge-Based Systems	3rd	2/2	Machová
Fuzzy Systems	3rd	2/2	Vaščák
Selected themes from Cybernetics	3rd	2/2	Zolotová
Microcontrollers	3rd	2/2	Jadlovský
Analysis and Design of Information systems	4th	2/2	Babič, Sarnovský M.
Web Technologies	4th	2/2	Bednár
Control of Technological Processes	4th	2/2	Jadlovský
Scheduling and Logistics	4th	2/2	Paralič
Elements of Control Systems	4th	2/2	Jadlovský
Optimal Control of Hybrid Systems	5th	2/2	Jadlovská A.
Intelligent Robotics	5th	2/2	Bundzel
Business Analytics	5th	2/2	Butka
Project Management	5th	2/2	Babič
Neural Networks	5th	2/2	Sinčák
Models and Industrial Process Control	5th	2/2	Filasová, Jadlovská S.
Computer Tools for Technological Systems Control	5th	2/2	Jadlovský
Optimisation in Economic Processes	5th	2/2	Filasová
Management in practice	6th	2/2	Babič
Service Robotics	6th	2/2	Virčíková
System Analysis and Synthesis	6th	2/2	Gašpar
IT Environment Control	6th	2/2	Sarnovský M.

4.2 Graduate Study (Ing.)

Subject	Semester	Lectures/exercises (hours per week)	Name of lecturer
Discrete Dynamic Systems	1st	2/2	Filasová
Computer Vision	1st	2/2	Bundzel
Humanoid Technologies	1st	2/2	Virčíková
Knowledge Discovery	1st	2/2	Paralič, J.
Architectures of Industrial Information Systems	1st	2/2	Zolotová
Engineering Econometrics	1st	2/2	Krokavec
Multi-agent and Network Control Systems	1st	2/2	Papcun
Machine Learning	2nd	2/2	Machová
Heuristic Optimization Processes	2nd	2/2	Mach
Control and Artificial Intelligence	2nd	2/2	Jadlovská
Technologies for Big Data Processing	2nd	2/2	Bednár, Sarnovský M.
Evolutionary Algorithms	2nd	2/2	Mach
Distributed Control Systems	2nd	2/2	Jadlovský
Complexity and Decision Making	2nd	2/2	Gašpar
Hybrid Computational Intelligence	2nd	2/2	Vaščák
Control and Visualisation Systems	2nd	2/2	Zolotová
Knowledge Management	3rd	2/2	Paralič, J.
Management Information Systems	3rd	2/2	Jadlovský
Diagnostics and Robust Control	3rd	2/2	Filasová
Cognitive Robotics	3rd	2/2	Bundzel
Semantic and Social Web	3rd	2/2	Machová
Languages for Intelligent Systems	3rd	2/2	Mach
Interactive Systems	3rd	2/2	Sinčák
New Trends in Intelligent Systems	4th	2/2	Sinčák
New Trends in Business Information Systems	4th	2/2	Paralič

5 RESEARCH AND EDUCATIONAL PROJECTS

- ***Semantic keyword-based search on structured data sources (KEYSTONE),*** COST Action IC-1302, European Cooperation in Science and Technology, duration: 2014 – 2017, members from our department: Peter Butka (Management Committee member for Slovakia), Peter Bednár, Martin Sarnovský, Ján Paralič
- ***Autonomous Control for a Reliable Internet of Services (ACROSS),*** COST Action IC-1304, European Cooperation in Science and Technology, duration: 2013 – 2016, members from our department: Peter Bednár (Management Committee member for Slovakia)
- The Technical University was accepted as a full member of the **ALICE experiment** at the European Organization for Nuclear Research (CERN) on September 1st, 2014. This will provide an opportunity for direct participation in the research and development of the "**Upgrade of the Alice Inner Tracking System**", planned for installation in the second long LHC

shutdown in the years 2018-2019. The research team led by Ján Jadlovský (Team leader TUKE) is actually composed of members from our department: Anna Jadlovská, Slávka Jadlovská, Jakub Čerkala, Michal Kopčík, Matej Oravec, Ján Čabala, Michal Varga, Dominik Vošček (duration: 2014-2018)

- ***MODINFORM: Modern informetric methods for the evaluation of scientific research*** (bilateral Czech-Slovak APVV project). Slovak Research and Development Agency, project no. SK-CZ-2013-0062, duration: 2015, members: Ján Paralič (project leader for TUKE), Gabriel Tutoky, Martin Sarnovský, Cecília Havrilová, Peter Koncz
- ***Incremental learning methods for intelligent systems,*** Scientific Grant Agency project No. 1/0667/12, duration: 2012 – 2015, members: Peter Sinčák (project leader)
- ***Methods for analysis of collaborative processes mediated by information systems,*** Scientific Grant Agency project No. 1/1147/12, duration: 2012 – 2015, members: Ján Paralič (project leader), František Babič, Kristína Machová, Martin Sarnovský, Peter Butka, Karol Furdík, Gabriel Tutoky, Jozef Wagner, Martin Repka, Peter Koncz, Adela Tušanová, Alexandra Lukáčová, Ján Štofa, Cecília Havrilová, Eva Turňová, Miroslava Muchová, Martin Mikula
- ***Resident core of active reconfigurable control systems,*** Scientific Grant Agency project No. 1/0348/14, duration: 2014 – 2016, members: Dušan Krokavec (project leader), Filasová Anna, Hladký Vratislav
- ***Integration of study programs Cybernetics and Artificial Intelligence.*** Cultural and Education Grant Agency Project No. 034TUKE-4/2014, duration 2014 – 2016, members: Ján Vaščák (project leader), Anna Jadlovská, Mária Virčíková, Rudolf Jakša, Peter Sinčák, Marián Mach, Kristína, Machová
- ***CyberLabTrainSystem – demonstrational and training of informationcontrol systems – innovation.*** Cultural and Education Grant Agency Project No. 001TUKE-4/2015, duration 2015 – 2017, members: Iveta Zolotová (project leader), Marek Bundzel, Peter Papcun, Ján Sarnovský, Anna Jadlovská, Ján Jadlovský, Slávka Jadlovská, Tomáš Lojka, Peter Michalik, Martin Miškuf, Jozef Mocnej, Jakub Čerkala, Michal Kopčík, Ľuboš Popovič, Vratislav Hladký, Jana Ligušová, Ján Liguš, Dominik Vošček, Michal Varga, Matej Oravec, Ján Štofa, Roman Mihaľ, Ján Čabala, Anna Novická, Michal Puheim
- ***Introduction of Education in Big Data Analytics.*** Cultural and Education Grant Agency Project No. 025TUKE-4/2015, duration 2015 – 2017, members: Ján Paralič (project leader), Martin Sarnovský, Peter Bednár, František Babič, Peter Butka, Kristína Machová, Marián Mach, Michal Vadovský, Miroslav Smatana, Miroslava Muchová, Martin Mikula
- ***Digitalization, virtualization and testing of a small turbojet engine and its elements using stands for modern applied lecturing,*** Cultural and Education Grant Agency Project No. 014TUKE-4/2015, duration 2015 – 2017, members: Peter Butka (previously Ladislav Madarász) - project

leader, Rudolf Andoga (project vice leader), Tobiáš Lazar, Ladislav Főző, Vladimír Gašpar, Jozef Judičák, Michal Puheim, Ladislav Nyulászi, and Róbert Bréda

- ***University Science Park TECHNICOM for Innovation Applications Supported by Knowledge Technology***, ITMS: 26220220182, supported by the Research & Development Operational Programme funded by the ERDF. Three pilot projects are performed at our department:
    - PP4: IT tools and services for analysis of various types of processes, Ján Paralič pilot project leader, members: František Babič, Jozef Wagner, Gabriel Tutoky, Martin Sarnovský, Peter Bednár, Peter Butka, Alexandra Lukáčová, Vladimír Gašpar, Cecília Havrilová, Michal Puheim, Miroslava Muchová, Martin Mikula
    - PP5 – Cloud and dynamic services for distributed. intelligent and mobile networks: lead by Frantisek Jakab from DCI, from DCAI have been partcipating: Iveta Zolotová, Peter Michalik, Tomáš Lojka, Martin Miškuf
    - PP6: Use of artificial intelligence in intelligent systems, Peter Sinčák pilot project leader
    - PP7: Center for Nondestructive Diagnostics of Technological Processes Using Standard Software for Control and Communication, Ján Jadlovský pilot project leader, members: Ján Sarnovský, Anna Jadlovská, Iveta Zolotová, Slávka Jadlovská, Peter Papcun, Jakub Čerkala, Michal Kopčík, Matej Oravec, Ján Čabala
- **Package of elements for improvement and innovation in education at TUKE**, ITMS: 26110230070, supported by the Operational Programme Education, funded by the ERDF. Faculty coordinator: Iveta Zolotová, experts: Peter Sinčák, Marek Bundzel, Jana Ligušová, Ján Liguš, Ján Sarnovský, Rudolf Jakša, Martin Sarnovský, Ján Vaščák
- **Package of quality improvement at TUKE through networks**, ITMS: 26110230086, supported by the Operational Programme Education, funded by the ERDF. Faculty coordinator: Iveta Zolotová, experts: Vratislav Hladký, Jana Ligušová, Marek Bundzel, Peter Sinčák, Ján Jadlovský, Anna Jadlovská, Ján Sarnovký, Ján Liguš, Iveta Zolotová
- **Package add-ons for further reform of education at TUKE**, ITMS: 26110230093, supported by the Operational Programme Education, funded by the ERDF. Faculty coordinator: Iveta Zolotová, experts: František Babič, Kristína Machová, Ján Paralič, Ján Liguš, Jana Ligušová, Anna Jadlovská, Ján Jadlovský, Marek Bundzel, Ján Vaščák, Peter Sinčák, Martin Sarnovský, Iveta Zolotová
- **National project Universities as Engines of Knowledge Society - University students to practice**, ITMS: 26110230120, supported by the Operational Programme Education, funded by the ERDF. Faculty coordinator: Iveta Zolotová, experts: Peter Sinčák, Iveta Zolotová, Marek Bundzel, Ján Vaščák, Anna Jadlovská, Rudolf Jakša

- **Transfer of the IoT open cloud platform into industry**, IBM Country Project Innovation Award. Project leader: Iveta Zolotová, members: Tomáš Lojka, Marek Bundzel, Martin Miškuf, Jozef Mocnej, Michal Puheim, students
- **Pilot laboratory projects - IoT with IBM**. IBM Country Project Innovation Award. Project leader: Iveta Zolotová, members: Pater Papcun, Tomáš Lojka, Marek Bundzel, Martin Miškuf, Jozef Mocnej, Anna Novická, Daniel Lorenčík, Michal Puheim, students
- **Microsoft Azure Research Award**: IoT Cloud Control – Smart Living and Smart Manufacturing, project leader: Iveta Zolotová, members: Jozef Mocnej, Pater Papcun, Tomáš Lojka, Marek Bundzel, Martin Miškuf, Daniel Lorenčík, Michal Puheim, študenti 1. a 2. stupňa
- **CASTLE - Comfortable and SmarT Living Expanded**: Tatrabanka – Foundation E-talent. Project leader: Peter Papcun, members: Iveta Zolotová, Jozef Mocnej, Martin Miškuf, Tomáš Lojka, students
- **Data collection and smart industry in the Internet of Things and cloud technology**, Faculty research grant. Principal investigator: Tomáš Lojka

6 CO-OPERATION

6.1 Co-operation in Slovakia

- Department of Automatic Control Systems Bratislava, Slovak University of Technology, Bratislava
- Institute of Intelligent Systems, Faculty of Informatics, Slovak University of Technology, Bratislava
- Faculty of Informatics and Information Technologies, Slovak University of Technology in Bratislava
- Institute of Computer Science, Slovak Academy of Sciences in Bratislava
- Department of Biophysics IEP Slovak Academy of Science
- Institute of Computer Science, University of P.J. Šafárik, Košice
- Institute of Experimental Physics, Slovak Academy of Sciences
- Department of applied informatics (Centre for Cognitive Science), Faculty of Mathematics, Physics and Informatics, Comenius University, Bratislava
- Department of Control and Information Systems, Faculty of Electrical Engineering, University of Zilina
- IT Valley Košice
- US Steel Košice
- Microsoft Slovakia
- IBM Slovakia
- Control Systems Slovakia
- Betamont Slovakia

6.2 International Co-operation

- Department of Software Engineering and Interactive Systems, Vienna University of Technology, Austria
- Dept. for Technical & Operational Information Systems (Data & Knowledge

Engineering Group), Otto-von-Guericke-University Magdeburg, Germany
- University of Regensburg, Germany
- University of Dortmund, Germany
- Waseda University, Tokyo, Japan
- Technical University of Czestochowa
- Tokyo Institute of Technology, Japan
- Kuyshu Institute of Technology, Japan
- University Pablo de Olavide of Seville, Spain
- Université Joseph Fourier Grenoble, IUT 1 (Institut Universitaire de Technologie 1), Grenoble, France
- Heudiasyc UMR CNRS 6599, UTC, Compiegne, France
- Université Henri Poincaré, Laboratoire CRAN (Centre de Recherche en Automatique de Nancy), Nancy 1, France
- Department of Informatics, Technical University Ostrava, Czech Republic
- Department of Control Systems and Instrumentation, Faculty of Mechanical Engineering Technical University Ostrava, Czech Republic
- Department of Cybernetics and Biomedical Engineering, Technical University Ostrava, Czech Republic
- Department of Cybernetics, Czech Technical University Prague, Czech Republic
- Department of Control Engineering, Czech Technical University, Prague, Czech Republic
- Institute of Information Theory and Automation, Academy of Sciences of Czech Republic, Prague, Czech Republic
- Department of Information Engineering, Faculty of Economics and Management, Czech University of Agriculture, Prague, Czech Republic
- University of Hradec Králové, Czech Republic
- Dept. of Computer Science and Engineering, Faculty of Applied Sciences, University of West Bohemia, Plzeň
- Faculty of Mechanical Engineering, Department of Automation, Institute of Information, University of Miskolc, Hungary
- Óbuda University, Budapest, Hungary
- Budapest University of Technology and Economics, Hungary
- Hungarian Academy of Sciences, Computer and Automation Research Institute, Hungary
- Regional Association of the Hungarian Academy of Sciences, Miskolc, Hungary

6.3 Membership in International Organizations and Societies

- Jakša, R.: IEEE, Computational Intelligence Society
- Krokavec, D.: Member of the International Federation of Automatic Control IFAC Technical Committee TC 1.4 Stochastic Systems
- IEEE Student Branch – Lojka, Michalik, Štofa, Mihaľ, Miškuf, Hvizdoš
- Liguš, J., Ligušová, J.: EAEEIE – European Association for Education in Electrical and Information Engineering
- Liguš, J.: IEEE Automation and Robotics Society
- Ligušová, J.: IEEE System, Man, Cybernetics Society
- Madarász, L.: Doctor honoris causa, University of Miskolc (2009)
- Madarász, L.: Honorary professor, Óbuda University Budapest, Hungary

(2009)
- Madarász, L.: Honorary Member of the Board of Hungarian Academy of Sciences (2000)
- Madarász, L.: Chairmanship member of the Technical Section, Association of Hungarian Professors (2001)
- Madarász, L.: Honorary Professor, Bánky Donát Polytechnic, Budapest, Hungary (1999)
- Madarász, L.: Membership of Associate Editors, Acta Polytechnica Hungarica, Budapest Tech, Hungary (2004)
- Madarász, L.: Honorary Membership in Hungarian Fuzzy Association, Budapest Hungary (2002)
- Madarász, L.: American Biographical Institute, Gold Record of Achievement, Control of Large Scale Systems, USA (1997)
- Madarász, L.: The American Biographical Institute, The Research Board of Advisors (1996)
- Madarász, L.: Honorary Fellow of micro'CAD The Univesity of Miskolc (2005)
- Ocelíková, E.; Sinčák, P.; Zolotová, I.: CPRS Czech Pattern Recognition Society
- Ocelíková, E.: CSSS Czech and Slovak Society for Simulation
- Machová, K.: ACM – Association of Computer Machinery
- Paralič, J.: ACM – Association of Computer Machinery, IEEE
- Sabol, T.: Information Society Technologies Program Committee (IST PC), 5th Framework Program, Brussels
- Sarnovský, J.: IEEE
- Sarnovský, J.: INES International Network of Engineers and Scientists for Global Responsibility
- Sarnovský, J.: Principia Cybernetica Web PRNCYB-L
- Sarnovský, J.: SWIIS Suplementary Ways for Improving International Stability
- Sinčák P.: European Society of Neural Networks
- Sinčák P.: IEEE, Computational Intelligence Society
- Vaščák, J.: IEEE, Computational Intelligence Society
- Zolotová, I.: IEEE, IEEE Communication Society, IEEE Computer Society
- Zolotová, I.: EAEEIE – European Association for Education in Electrical and Information Engineering

6.4 Membership in Slovak Organizations and Societies

- The whole Department of Cybernetics and Artificial Intelligence is a team member of:
    - Slovak Society for Cybernetics and Informatics
    - Slovak AI Society
- Filasová, A.: Slovak Society for Cybernetics and Informatics
- Krokavec, D.: Slovak Electrical Engineering Society
- Madarász, L.: Slovak Society for Cybernetics and Informatics
- Jadlovská, A; Ocelíková, E.; Sarnovský, J.: Slovak Society for Cybernetics and Informatics
- Paralič, J.: Slovak Society for Computer Science
- Sabol, T.: Board of the Open Society Fund, Bratislava

6.5 International Networks and Exchange Programs

- SALEIE, Strategic Alignment of Electrical and Information Engineering in European Higher Education Institutions, Reference number: 527877-LLP-1-2012-1-UK-ERASMUS-ENW. Contact persons: Ján Liguš, Iveta Zolotová, Jana Ligušová.
- OI-Net, European Academic Network for Open Innovation, Reference number: 542203-LLP-1-2013-1-FI-ERASMUS-ENW- Iveta Zolotová, Peter Michalik
- Erasmus+ programme Inter-institutional agreement 2014-2021 between TU of Košice and TECHNOLOGIKO EKPAIDEFTIKO IDRYMA-PIREA, T.E.I. Pirea, Greece, Contact person: Iveta Zolotová
- Socrates Erasmus agreement between TU of Košice and Czech University of Life Sciences, Prague, Czech Republic. Contact person: Eva Ocelíková
- Socrates Erasmus agreement between TU of Košice and Université Henri Poincaré, Nancy 1, France, Contact person: Ján Sarnovský
- Socrates Erasmus agreement between TU of Košice and University Hradec Kralove, Czech Republic. Contact person: Ján Vaščák
- Socrates Erasmus agreement between TU of Košice and Univesite de Technologie Compiegne, France, Contact person: Ján Liguš
- Socrates Erasmus agreement between TU of Košice and Institut Universitaire de Technologie 1 de Grenoble 1, France, Contact person: Jana Ligušová

6.6 Visitors to the Department

- Mike Starkey - CTO & Vice President IBM CEE (Central and Eastern Europe), Member of the IBM Academy of Technology Leadership Team
- Dalibor Fiala (2x), University of West Bohemia Plzeň, Czech Republic
- Martin Dostal, University of West Bohemia Plzeň, Czech Republic
- Francesco Guerra, University of Modena, Italy
- Wouter Addink, Naturalis Biodiversity Center Leiden, Netherlands
- Raquel Amaro, Center of Linguistics of the University of Lisbon, Portugal
- Victor Bacu, Technical University of Cluj-Napoca, Romania
- Krisztian Balog, University of Stavanger, Norway
- Omar Boucelma, LSIS Aix-Marseille University, France
- John Breslin, National University of Ireland, Galway, Ireland
- Paulo Cunha, University of Coimbra, Portugal
- Tomche Delev, Ss. Cyril and Methodius University, Macedonia
- Elena Demidova, L3S Research Center, Hannover, Germany
- Gilles Falquet, Universite de Geneve, Switzerland
- Antonio Farina Martinez, University of A Coruna, Spain
- Javier David Fernandez, Vienna University, Austria
- Nicola Ferro, University of Padua, Italy
- Dorian Gorgan, Technical University of Cluj-Napoca, Romania
- Yaakov HaCohen-Kerner, Jerusalem Coll. of Technology Research, Israel
- Atanas Hristov, Univ. of Information Science and Technology, Macedonia
- Sergio Ilarri, University of Zaragoza, Spain
- Dragan Ivanovic, University of Novi Sad, Serbia

- Marina Ivasic-Kos, University of Rijeka, Croatia
- Georgia Kapitsaki, University of Cyprus, Cyprus
- Olivera Kitanovic, University of Belgrade, Serbia
- Javier Lacasta, University of Zaragoza, Spain
- Mihai Lupu, Vienna University of Technology, Austria
- Gjorgji Madjarov, Ss. Cyril and Methodius University, Macedonia
- Abdulhussain E. Mahdi, University of Limerick, Ireland
- Sanda Martincic-Ipsic, University of Rijeka, Croatia
- Constantin Nandra, Technical University of Cluj-Napoca, Romania
- Andreas Nürnberger, Otto-von-Guericke-University Magdeburg, Germany
- Alexandre Miguel Pinto, University of Coimbra, Portugal
- Miran Pobar, University of Rijeka, Croatia
- Ranka Stankovic, University of Belgrade, Serbia
- Teodor Stefanut, Technical University of Cluj-Napoca, Romania
- Julian Szymanski, Gdansk University of Technology, Poland
- Raquel Trillo Lado, University of Zaragoza, Spain
- Yannis Velegrakis, University of Trento, Italy
- Hubert Zarzycki, Wroclaw School of Information Technology, Poland

6.7 Visits of Staff Members to Foreign Institutions

- P. Butka, Magdeburg, Nemecko, 18.1.-13.2.2015
- J. Paralič, Praha, Czech Republic, 20.-21.1.2015
- J. Jadlovský, J. Čabala, M. Oravec, Ženeva, Švajčiarsko, 2.-10.2.2015
- P. Sinčák, Miškolc, Maďarsko, 11.-12.2.2015
- M. Oravec, Ženeva, Švajčiarsko, 1.-13.3.2015
- P. Sinčák, M. Virčíková, J. Ondo, Viedeň, Rakúsko, 10.-14.3.2015
- P. Sinčák, G. Magyar, Miškolc, Maďarsko, 9.-9.3.2015
- J. Vaščák, Hradec Králové, Czech Republic, 4.-7.5.2015
- J. Paralič, C. Havrilová, Plzeň, Czech Republic, 5.-7.5.2015
- P. Sinčák, Budapešť, Maďarsko, 11.-13.5.2015
- J. Hvizdoš, M. Miškuf, T. Lojka, Zagreb, Chorvátsko, 7.-11.5.2015
- J. Liguš, J. Ligušová, Krakow, Poľsko, 15.-17.5.2015
- D. Krokavec, P. Liščinský, Miškolc, Maďarsko, 27.-29.5.2015
- P. Butka Timisoara Rumunsko 20.-24.5.2015
- E. Ocelíková, Praha, Czech Republic, 1.-30.6.2015
- D. Krokavec, A. Filasová, Torremolinos, Španielsko 14.-20.6.2015
- D. Krokavec, A. Filasová, Saint-Petersburg, Rusko 21.-27.6.2015
- A. Lukáčová, Valencia, Španielsko, 2.-5.9.2015
- A. Lukáčová, M. Muchová, Msida, Malta, 18.-25.7.2015
- F. Babič, Valencia, Španielsko, 1.-5.9.2015
- P. Sinčák, M. Virčíková, Londýn, Veľká Británia, 21.-24.6.2015
- T. Cádrik, Brno, Czech Republic, 21.-25.6.2015
- P. Butka, Magdeburg, Nemecko, 28.6.-10.7.2015
- J. Ondo Pisa Taliansko 21.-27.7.2015
- S. Jadlovská, Miškolc, Maďarsko, 3.-8.7.2015
- M. Virčíková, Pisa, Taliansko 22.-27.7.2015
- F. Babič, V. Gašpar, Plzeň, Czech Republic, 7.-11.9.2015
- P. Sinčák, M. Mach, Londýn, Pisa, Veľká Brit., Taliansko, 18.-27.7.2015

- P. Bednár, T. Cádrik, Londýn, Veľká Británia, 18.-22.7.2015
- M. Miškuf, Socialbakers, Praha, 1.-31.8.2015
- M. Kopčík, M. Oravec, Ženeva, Švajčiarsko, 27.-11.8.2015
- T. Lojka, M. Miškuf, Tokio, Japonsko, 4.-10.9.2015
- D. Krokavec, A. Filasová, Paríž, Francúzsko, 30.8.-4.9.2015
- M. Sarnovský, Karlsruhe, Nemecko 7.-11.9.2015
- J. Jadlovský, A.Jadlovská, S. Jadlovská, Plzeň, Czech Republic, 7.-9.9.2015
- J. Jadlovský, A.Jadlovská, S. Jadlovská, Ženeva, Švajčiarsko, 4.-11.8.2015
- M. Miškuf, Praha, Czech Republic, 2.-1.9.2015
- M. Sarnovský, Karpacz, Poľsko 19.-23.9.2015
- M. Sarnovský, Daejeon, Južná Kórea 3.-9.10.2015
- P. Butka, Coimbra, Portugalsko, 7.-10.9.2015
- D. Krokavec, Ustka, Poľsko, 6.-10.9.2015
- P. Sinčák, M. Virčíková, J. Ondo, Plzeň, Czech Republic, 7.-9.9.2015
- P. Michalik Subotica Srbsko 16.-19.9.2015
- K. Machová Madrid Španielsko 20.-24.9.2015
- D. Krokavec Sydney Austrália 18.-25.9.2015
- T. Cádrik, P. Takáč, Pontadera, Taliansko, 28.-30.10.2015
- G. Tutoky, Plzeň, Czech Republic, 18.-25.9.2015
- J. Paralič, K. Machová, G. Tutoky, Praha, Czech Republic, 30.9.-2.10.2015
- F. Babič, P. Bednár, P. Butka, C. Havrilová, M. Mikula, Praha, Czech Republic, 1.-2.10. 2015
- P. Sinčák, Budapešť, Maďarsko, 6.-6.10.2015
- M. Virčíková, Londýn, Veľká Británia, 14.-15.10.2015
- M. Virčíková, G. Magyar, Almere, Holandsko, 21.-24.10.2015
- P. Sinčák, Pontadera, Taliansko, 21.-25.10.2015
- S. Jadlovská, Praha, Czech Republic, 3.-4.11.2015
- M. Virčíková, Praha, Czech Republic, 26.-29.11.2015
- D. Krokavec, Plzeň, Czech Republic, 18.-21.11.2015
- J. Hvizdoš, T. Lojka, J. Mocnej, Pontadera, Taliansko, 23.11.-1.12.2015
- J. Ondo, P. Takáč, Bucheon, Južná Kórea, 7.-17.12.2015
- M. Puheim, Budapešť, Maďarsko, 19.-21.11.2015
- J. Vaščák, Praha, Czech Republic, 11.-13.12.2015
- P. Sinčák, Osaka, Bucheon Japonsko, Južná Kórea 3.-20.12.2015

7 THESES

Thesis type	Bachelor	Master	Doctoral
Number	71	95	7

8 OTHER ACTIVITIES

- SAMI 2015 (IEEE 13th International Symposium on Applied Machine Intelligence and Informatics) was held on January 22-24, 2015 in Herl'any, Slovakia: http://conf.uni-obuda.hu/sami2015/
- Meeting of COST Action IC1302 Keystone (Spring WG Meeting 2015) was

held on May 11-12, 2015 in Košice

- WIKT 2015 (10th Workshop on Intelligent and Knowledge oriented Technologies 2015) was held on November 12-13, 2015 in Košice, Slovakia: http://web.tuke.sk/fei-cit/wikt2015/

9 PUBLICATIONS

9.1. Books

[1] ADAMČÍK, František KURDEL, Pavol LAZAR, Tobiáš MADARÁSZ, Ladislav: Science experiment and doctoral studies (in Slovak). 1st edition, Technical University Košice, 2015. 287 p. ISBN 978-80-553-2039-7.
[2] ADAMČÍK, František - BRÉDA, Róbert - ANDOGA, Rudolf - KABÁT, Ján: Avionic systems 1: On-board electronic and electrical systems of aircraft (in Slovak). 1st edition, Košice, Technical University Košice, 2015. 176 p. - ISBN 978-80-553-2024-3.
[3] BABIČ, František SARNOVSKÝ, Martin: INformation systems analysis and design (in Slovak)**.** 1st edition, Technical University Košice, 2015. 126 p. ISBN 978-80-553-1992-6.
[4] BUNDZEL, Marek: Biocybernetics and Evolutionary Robotics. 1st edition, Technical University Košice, 2015. 54 p. - ISBN 978-80-553-2186-8.
[5] HLADKÝ, Vratislav: Prvky riadiacich systémov. 1st edition, Košice, Technical University Košice, 2015. 97 p. - ISBN 978-80-553-2051-9.
[6] JADLOVSKÁ, Anna - JADLOVSKÁ, Slávka: Simulation systems in cybernetics (in Slovak). 1st edition, Košice, Technical University Košice, 2015. - 240 p. [CD-ROM]. - ISBN 978-80-553-2011-3.
[7] JADLOVSKÝ, Ján - PAPCUN, Peter: Počítačové systémy v riadení. 1st edition, Technical University Košice, 2015. - 415 p. - ISBN 978-80-553-2102-8
[8] LAZAR, Tobiáš MADARÁSZ, Ladislav GAŠPAR, Vladimír NYULÁSZI, Ladislav: Reciprocity of theoretical-practical problems of forecasting the reliability of small jet engine (in Slovak). 1st edition, Košice: Elfa 2015. 275 p. ISBN 978-80-8086-236-7
[9] LIGUŠOVÁ, Jana LIGUŠ, Ján: Intelligent Control Networks. 1st edition, Košice: TU 2015. 92 p. ISBN 978-80-553-2009-0.
[10] MACHOVÁ, Kristína: Semantic and social web (in Slovak). 1st edition, Technical University Košice, 2015. 141 p. ISBN 978-80-553-1974-2.
[11] PARALIČ, Ján: Knowledge management. 1st edition, Košice, Technical University Košice, 2015. 92 p. - ISBN 978-80-553-2100-4.
[12] SARNOVSKÝ, Ján LIGUŠ, Ján LIGUŠOVÁ, Jana: Cybernetics and Management. 1st edition, Košice: TU 2015. 120 p. [CD-ROM]. ISBN 978-80-553-2012-0.
[13] SARNOVSKÝ, Martin: IT management. 1st edition, Košice, Technical University Košice, 2015. - 103 s. - ISBN 978-80-553-2045-8.
[14] VAŠČÁK, Ján: Fuzzy Systems. 1st edition, Košice: TU 2015. 115 p. ISBN 978-80-553-2093-9.
[15] VAŠČÁK, Ján - JAKŠA, Rudolf: Umelá inteligencia. 1st edition, Technical University Košice, 2015. 126 p. - ISBN 978-80-553-2134-9.
[16] ZOLOTOVÁ, Iveta - ŠTOFA, Ján - MICHALIK, Peter: Information systems of business processes (in Slovak). 1st edition, Košice, Technical University Košice, 2015. 144 p. - ISBN 978-80-553-1960-5.

9.1 Journals

[1] BABIČ, František LUKÁČOVÁ, Alexandra PARALIČ, Ján: Descriptive and predictive analyses of data representing aviation accidents. In: Advances in Intelligent Systems and Computing. Vol. 314 (2015), p. 181-190. ISSN 2194-5357

[2] BUTKA, Peter PÓCS, Jozef PÓCSOVÁ, Jana: Distributed computation of generalized one-sided concept lattices on sparse data tables. In: Computing and Informatics. Vol. 34, no. 1 (2015), p. 77-98. ISSN 1335-9150

[3] BUTKA, Peter: Knowledge-based representation for modeling of selected software development methodology. In: International Journal of Research in Information Technology. Vol. 3, no. 7 (2015), p. 123-134. ISSN 2001-5569

[4] BUTKA, Peter PÓCS, Jozef PÓCSOVÁ, Jana: Reduction of concepts from generalized one-sided concept lattice based on subsets quality measure. In: New Research in Multimedia and Internet Systems. Vol. 314 (2015), p. 101-111. ISSN 2194-5357

[5] CÁDRIK, Tomáš ONDO, Jaroslav MACH, Marián SINČÁK, Peter: The basic architecture of cloud environments to support multi robotic systems (1) - in Slovak. In: ATP Journal. Vol. 22, no. 1 (2015), p. 38-39. ISSN 1335-2237

[6] CÁDRIK, Tomáš ONDO, Jaroslav MACH, Marián SINČÁK, Peter: The basic architecture of cloud environments to support multi robotic systems (2) - in Slovak. In: ATP Journal. Vol. 22, no. 2 (2015), p. 41-43. ISSN 1335-2237

[7] CÁDRIK, Tomáš ONDO, Jaroslav MACH, Marián SINČÁK, Peter: The basic architecture of cloud environments to support multi robotic systems (3) - in Slovak. In: ATP Journal. Vol. 22, no. 3 (2015), p. 48-49. ISSN 1335-2237

[8] CÁDRIK, Tomáš MACH, Marián: Usage of ZCS Evolutionary Classifier System as a Rule Maker for Cleaning Robot Task. In: Advances in Intelligent Systems and Computing. Vol. 316 (2015), p. 113-119. ISSN 2194-5357

[9] FIALA, Dalibor TUTOKY, Gabriel KONCZ, Peter, PARALIČ, Ján: Ageing of edges in collaboration networks and its effect on author rankings. Acta Polytechnica Hungarica. Vol. 12, no. 6 (2015), p. 149-160, ISSN: 1785-8860

[10] FILASOVÁ, Anna KROKAVEC, Dušan SERBÁK, Vladimír: Application of descriptor approaches in design of PD observer-based actuator fault estimation. In: Archives of Control Sciences. Vol. 25, no. 1 (2015), p. 51-64. ISSN 1230-2384

[11] FILASOVÁ, Anna HLADKÝ, Vratislav KROKAVEC, Dušan: Robust TS fuzzy fault detection filters design. In: Advances in Intelligent Systems and Computing. Vol. 316 (2015), p. 197-206. ISSN 2194-5357

[12] JADLOVSKÁ, Slávka SARNOVSKÝ, Ján VOJTEK, Jaroslav VOŠČEK, Dominik: Advanced Generalized Modelling of Classical Inverted Pendulum Systems. In: Advances in Intelligent Systems and Computing. Switzerland: Springer, 2015 Vol. 316, no. 1(2015), p. 255-264. ISSN 2194-5357

[13] JADLOVSKÝ, Ján KOPČÍK, Michal: Basic Motion Control of Differential-Wheeled Mobile Robot ALFRED. In: Advances in Intelligent Systems and Computing. Switzerland: Springer, 2014 Vol. 316 (2015), p. 73-80. ISSN 2194-5357

[14] KURDEL, Pavol ČEŠKOVIČ, Marek NYULÁSZI, Ladislav ADAMČÍK, František: Selected method of diagnosing aviation ergatic systems. In: Nase More. Vol. 62, no. 3 (2015), p. 233-236. ISSN 0469-6255

[15] LOJKA, Tomáš BUNDZEL, Marek ZOLOTOVÁ, Iveta: Industrial Gateway for

Data Acquisition and Remote Control. In: Acta Electrotechnica et Informatica. Vol. 15, no. 2 (2015), p. 43-48. ISSN 1335-8243
[16] LOJKA, Tomáš ZOLOTA, Milan MIHAĽ, Roman ZOLOTOVÁ, Iveta: Communication Engine in Human-Machine Alarm Interface System. In: Advances in Intelligent Systems and Computing. Switzerland: Springer, 2015 Vol. 316 (2015), p. 129-136. ISSN 2194-5357
[17] LORENČÍK, Daniel SINČÁK, Peter TUŠAN, Jakub MAREK, Martin: Smartphone Robots. In: Advances in Intelligent Systems and Computing. Vol. 316 (2015), p. 137-143. ISSN 2194-5357
[18] LUKÁČOVÁ, A., BABIČ, F., PARALIČOVÁ, Z., PARALIČ, J.: How to Increase the Effectiveness of the Hepatitis Diagnostics by Means of Appropriate Machine Learning Methods. Lecture Notes in Computer Science. Switzerland: Springer International Publishing, 2015 Vol. 9267 LNCS (2015), p. 81-94. ISSN 0302-9743
[19] MAGYAR, Gergely VIRČÍKOVÁ, Mária: Socially-Assistive Emotional Robot that Learns from the Wizard During the Interaction for Preventing Low Back Pain in Children. In: Lecture Notes in Computer Science. Vol. 9388 (2015), p. 411-420. ISSN 0302-9743
[20] MAGYAR, Gergely SINČÁK, Peter KRIZSÁN, Zoltán: Comparison Study of Robotic Middleware for Robotic Applications. In: Advances in Intelligent Systems and Computing. Vol. 316 (2015), p. 121-128. ISSN 2194-5357
[21] MIŠKUF, Jozef CSACH, Kornel JURÍKOVÁ, Alena HURÁKOVÁ, Mária MIŠKUF, Martin TABACHNIKOVA, Elena PSARUK, Igor LAKTIONOVA, Marina PODOLSKIY, Aleksey: Generation of Nanoscale Stripes at Failure of Amorphous Metals. In: Key Engineering Materials. 2015 Vol. 662 (2015), p. 221-224. ISSN 1662-9795
[22] PAPCUN, Peter JADLOVSKÝ, Ján: Mathematical Model of Robot Melfa RV-2SDB. In: Advances in Intelligent Systems and Computing. Switzerland: Springer, 2015 Vol. 316 (2015), p. 145-154. ISSN 2194-5357
[23] PUHEIM, Michal BUNDZEL, Marek SINČÁK, Peter MADARÁSZ, Ladislav: Application of Tracking-Learning-Detection for Object Tracking in Stereoscopic Images. In: Advances in Intelligent Systems and Computing. Vol. 316 (2015), p. 323-331. ISSN 2194-5357
[24] SERBÁK, Vladimír LIŠČINSKÝ, Pavol: Adaptive observer based actuator faults estimation. In: Advances in Electrical and Electronic Engineering. Vol. 13, no. 1 (2015), p. 48-53. ISSN 1336-1376
[25] SINČÁK, Peter LORENČÍK, Daniel VIRČÍKOVÁ, Mária GAMEC, Jan: Theoretical Analysis of Recent Changes and Expectations in Intelligent Robotics. In: Advances in Intelligent Systems and Computing. Vol. 316 (2015), p. 13-30. ISBN 978-3-319-10782-0 ISSN 2194-5357
[26] TARHANIČOVÁ, Martina MACHOVÁ, Kristína SINČÁK, Peter: Computers Capable of Distinguishing Emotions in Text. In: Advances in Intelligent Systems and Computing. Switzerland: Springer, 2015 Vol. 316 (2015), p. 61-69. ISBN 978-3-319-10782-0 ISSN 2194-5357
[27] VAŠČÁK, Ján MICHNA, Roman: Learning of Fuzzy Cognitive Maps by a PSO Algorithm for Movement Adjustment of Robots. In: Advances in Intelligent Systems and Computing. Switzerland: Springer, 2014 Vol. 316 (2015), p. 155-162. ISSN 2194-5357
[28] VIRČÍKOVÁ, Mária SINČÁK, Peter: Teach Your Robot How You Want It to Express Emotions: On the Personalized Affective Human-Humanoid Interaction. In: Advances in Intelligent Systems and Computing. Switzerland:

Springer International Publishing, 2014 Vol. 316 (2015), p. 81-92. ISSN 2194-5357

[29] ZOLOTOVÁ Iveta, BUNDZEL Marek, LOJKA Tomáš: Industry IoT gateway for cloud connectivity. In: Advances in Intelligent Systems and Computing. Springer, 2015 Vol. 460 (2015), p. 59-66. ISSN 1868-4238

[30] ZOLOTOVÁ, Iveta LOJKA, Tomáš SROKA, Jozef LABAJ, Marián: SOA-based remote management for industrial router, VPN server and mobile clients - in Slovak. In: ATP Journal. Vol. 22, no. 6 (2015), p. 36-38. ISSN 1335-2237

9.2 Other publications

Publication Type	Confereces		Other
	Foreign	Home	
Number	31	48	55