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Erik Kajati

Nationality: Slovak **Date of birth:** 21/03/1991 **Gender:** Male

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WORK EXPERIENCE

Assistant Professor

Technical University of Košice [09/2024 – Current]

City: Košice | **Country:** Slovakia | **Name of unit or department:** Department of Cybernetics and Artificial Intelligence - **Business or sector:** Education

My research interests encompass the three fundamental principles of Industry 5.0: sustainability, resiliency, and human-centricity. I explore their applicability across diverse sectors, including the energy industry, healthcare, and manufacturing.
I am also leading lectures and practical sessions in the following courses: Database Systems Applications, Supervisory Systems and HMI, Industry 4.0, and Multi-Agent and Networked Control Systems.

Assistant Professor, Head of the Center of Applied Cybernetics

Technical University of Košice [01/2023 – 08/2024]

City: Košice | **Country:** Slovakia

Assistant Professor

Technical University of Košice [06/2020 – 12/2022]

City: Košice | **Country:** Slovakia

EDUCATION AND TRAINING

Philosophiae Doctor (PhD.)

Technical University of Košice [09/2016 – 05/2020]

City: Košice | **Country:** Slovakia | **Thesis:** Intelligent Human-System Interoperability

3 months Erasmus+ research exchange programme

University of Auckland [01/2018 – 04/2018]

Address: prof. Xun Xu, LISMS group, Auckland (New Zealand)

2 months research stay

University of Auckland [01/2020 – 03/2020]

Address: prof. Xun Xu, LISMS group, Auckland (New Zealand)

Master degree

Technical University of Košice [09/2014 – 05/2016]

City: Košice | **Country:** Slovakia | **Thesis:** Designing and realization of the control of the laboratory model Traverse with use of cloud technology

Bachelor degree

Technical University of Košice [09/2011 – 06/2014]

City: Košice | **Country:** Slovakia | **Thesis:** Control of robotic manipulator and its' application to the distributed control systems

LANGUAGE SKILLS

Mother tongue(s): Slovak

Other language(s):

English

LISTENING C1 **READING** C2 **WRITING** B2

SPOKEN PRODUCTION B2 **SPOKEN INTERACTION** B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

PUBLICATIONS

[2024]
Containerization in Edge Intelligence: A Review (Q2)

[2024]
Towards Human-Centric Digital Twin for Human-Machine Collaboration: A Review on Enabling Technologies and Methods (Q2)

[2023]
A Modular Framework for Data Processing at the Edge: Design and Implementation (Q2)

[2023]
A validation study to confirm the accuracy of wearable devices based on health data analysis (Q2)

[2022]
Federated Learning for Edge Computing: A Survey (Q2)

[2022]
Visible Light Communication and Localization: Tracking Solutions for Industry 4.0 Environments and The Operator 4.0 (Q1, D1)

[2021]
Means of IoT and Fuzzy Cognitive Maps in Reactive Navigation of Ubiquitous Robots (Q2)

[2021]
Quality-Enabled Decentralized IoT Architecture for Efficient Resources Utilization (Q1)

[2020]
Smart and Cognitive Solutions for Operator 4.0: Laboratory H-CPPS Case Studies (Q1)

[2019]
Cloud Based Cyber-Physical Systems: Network Evaluation Study (Q1)

[2019]
Intelligent human-centric lighting for mental wellbeing improvement (Q2)

[2019]
Edge-enabled IoT gateway criteria selection and evaluation (Q2)

PROJECTS

International

1. EPIC - EP Innovation centre, 2022-current (principal investigator)
2. ERASMUS-EDU-2023-PEX-COVE - Innovation Vocational Excellence and Sustainability in Tech – INVESTech, project: 101143958, 2024-2028
3. IBM Country Project Award - Pilot ThinkHub: IoT&AI&Robotics, 2018-2019
4. Microsoft Azure for Research Sponsorship - Smart Manufacturing, 2017-2018
5. Erasmus Plus - bilateral agreements with University of Auckland, New Zealand, 2016-2018
6. TECHNICOM Phase 2 - University Science Park TECHNICOM for Innovative Applications with Knowledge Technology Support, ITMS: 313011D232, 2015-2018
7. Microsoft Azure for Research Sponsorship - IoT Cloud Control – Smart Living and Smart Manufacturing, 2016-2017
8. IBM Country Project Innovation Award - Pilot laboratory projects - IoT with IBM, 2016
9. IBM Country Project Innovation Award - Transfer of the IoT open cloud platform into the industry, 2015-2016

National

1. EPH Foundation - DATALYTIC ENERGY: Support for research and education in the fields of energy security and commodity markets, 2024 (principal investigator)
2. KEGA 068TUKE-4/2024 - IVI – Internet of Vehicles in the Context of Industry 4.0, 2024-2028
3. Tatrabanka Foundation - Education for institutions - Drones for the future: practical education and research (DronEd), 2023-2024 (principal investigator)
4. APVV APVV-20-0247 - Edge-enabled intelligent sensing and computing, 2021-2025
5. VEGA 1/0480/22 - EDEN: EDge-Enabled intelligeNt systems, 2022-2025
6. FEI Grant FEI-2022 - Computer Vision in Intelligent Space, 2022
7. Siemens Heathineers Space - Intelligent Health Lab, 2019-current
8. Tatrabanka Foundation - Digital for universities - ISENS – Intelligent Sensing Systems, 2021-2022 (principal investigator)
9. FEI Grant FEI-2018-58 - Intelligent Lab Space - towards intelligent human-system interoperability, 2018-2019 (principal investigator)
10. Tatrabanka Foundation - Quality of Education - MILEAGE - Machine Learning Generation, 2017-2018 (principal investigator)
11. KEGA 033TUKE-4/2018 - Smart Industry/Architectures of intelligent information and cybernetic systems, 2018-2020
12. VEGA 1/0663/17 - Intelligent cyber-physical systems in a heterogeneous environment with the support of IoE and cloud services, 2017-2020
13. Tatrabanka Foundation - IoTNET - Take your knowledge to the edge, 2018
14. FEI Grant FEI-2017-46 - Decentralized IoT architecture for efficient use of available resources, 2017-2018
15. KEGA 001TUKE-4/2015 - CyberLabTrainSystem - demonstration and training of information-control systems - innovation, 2015-2017
16. Tatrabanka Foundation - Quality of Education - Quo Vadis Smart Industry / Industry 4.0, 2017
17. U.S. Steel Vision Lab - Computer vision and object identification in a laboratory environment for identification and localization of the objects, 2016-2017
18. FEI Grant FEI-2015-34 - CHECkuP - Cognitive HEalthCare Platform, 2016-2017
19. Tatrabanka Foundation - CASTLE - Comfortable and SmarT Living Expanded, 2016

CERTIFICATIONS

[19/05/2016 – Current]

§22 Paragraph 1 of Decree No. 508/2009 of the Slovak Republic "Independent Electrician"

[01/12/2023 – Current]

Remote Pilot Competency - EASA A1/A3 certificate

HONOURS AND AWARDS

Honours and awards

1. Award 'TUKE Scientist under 35 for 2024' for research and promotional activities in the field of intelligent systems and data analytics, emphasizing the fundamental principles of Industry 5.0: sustainability, resilience, and human-centricity (2024)
2. Award for long-term contribution to the development of science in Slovakia on the occasion of the 20th anniversary of the Student Personality of Slovakia project by Junior Chamber International - Slovakia (2024)
3. One of the two finalists of the Asseco Central Europe UpSteer program (2023)
4. Award for "The Best TOP 10" in the history of the Slovak University Startup Cup competition by Junior Chamber International - Slovakia (2022)
5. Winner/laureate of the Student Personality of Slovakia in the category of Computer Science, Mathematical, and Physical Sciences (2021) and Special prize from ABB for contribution to the field of Industry 4.0 (2021)
6. Attendance at University Startup World Cup 2019 (TOP40 of the world university startups)
7. First place at Slovak University Startup Cup overall and in the category of Science and Medical Technology (2019)
8. Third place at international AT&T V4 Hackathon (2018)
9. First place at the international IBM Hackathon (2017)
10. Absolving the international CTU and AT&T V4 Hackathon (2017)
11. First place in Slovakia (second in Europe) at CISCO Creathon for Digital Innovation (2016)
12. My diploma thesis was selected as one of the best theses in the school year 2015/2016 (2016)

NETWORKS AND MEMBERSHIPS

Memberships

- IEEE Student Branch (member)
- Slovak Society for Artificial Intelligence (member)

DRIVING LICENCE

Driving Licence: AM

Driving Licence: B1

Driving Licence: B

Kosice, 18/02/2025

Erik Kajati