Intelligent Data and Computing

IDC Research Group

FIIT STU in Bratislava - 09.2024

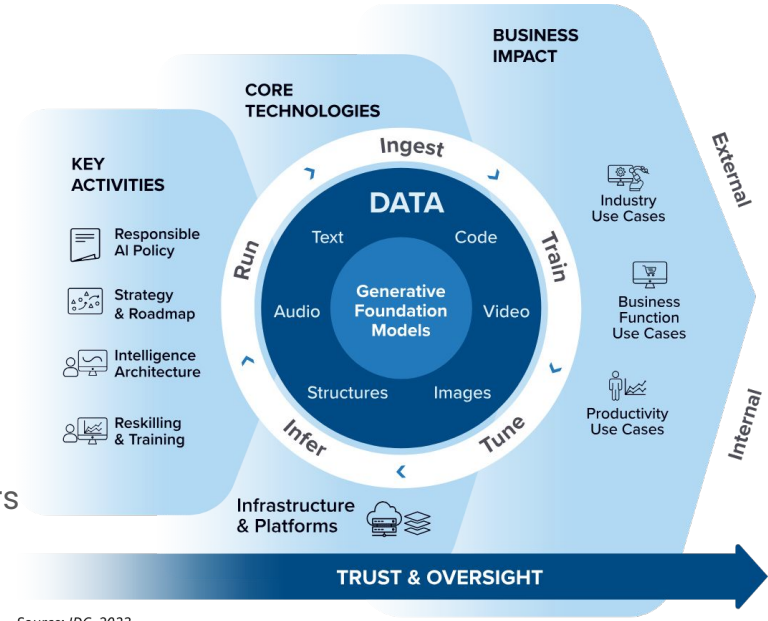
SLOVAK UNIVERSITY OF
TECHNOLOGY IN BRATISLAVA
FACULTY OF INFORMATICS
AND INFORMATION TECHNOLOGIES

IDC Research Focus

- Data and Computing Intelligence
- Software Engineering, Human-Computer Interaction
- AIOps: building modern AI data-driven applications with respect to information privacy and security

Keywords (TL;DR)

- Data Science Process, Applied Machine Learning, Applied Deep Learning, AIOps, NeuroEvolution
- Human-Computer Interaction, User Modeling, Recommenders
- Recommendation in Cyber-Physical Interaction,
- Information Privacy, Trust and Security,
- Distributed Computing, High-Performance Computing
- Software technology, Software modeling, Educational content engineering



Source: IDC, 2023

IDC Members	Research Interests
doc. Ing. Ján LANG, PhD.	Software Technology, ECE, CEP, SM
doc. Ing. Giang NGUYEN, PhD.	ML/DL, Recommender Systems, AI in IT Operations
doc. Ing. Fedor LEHOCKI, PhD.	e-Health, IoT, Remote Sensing
Ing. Eduard KURIC, PhD.	Human-Computer Interaction (HCI), ML
Ing. Martin KOMÁK, PhD.	Artificial Intelligence (AI), NeuroEvolution
Ing. Juraj VINCÚR, PhD.	Virtual Reality, Augmented Reality, HCI

PhD students - Doktorandi

- Ing. Matúš Krajčovič
- Ing. Natália Mačugová
- Ing. Anetta Langová
- Ing. Alexandra Skyvová
- Ing. Oliver Udvardi
- Ing. Oleksandr Lytvyn
- PaedDr. Pavol Baťalík (externý doktorand)

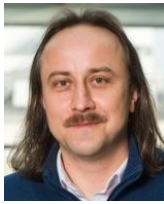
Projects

- International Center of Excellence for Research on Intelligent and Secure Information and Communication Technologies and Systems, 2020-2023
- Building Regional Innovation Ecosystems, **2024-2027**
- Model-based explication support for personalized education, **2023-2026**
- Support of research activities of Excellence laboratories STU in Bratislava, 2020-2023
- International Interdisciplinary Network on Smart Healthy Age-friendly Environments, **2020-2024**
- Education Content Engineering Hub, EEA and Norway Grants, **2022-2024**
- Výskum efektívnych metód vývoja adaptívnych softvérových ekosystémov, 2020-2022
- Využitie umelej inteligencie v oblasti riadenia robotov, 2019-2020

Publications

- Machine learning and deep learning frameworks and libraries for large-scale data mining: a survey
  Artificial Intelligence Review, Q1-decile, 103.000 downloads, 820 citations, DOI 10.1007/s10462-018-09679-z
  Springer Nature research highlights in Computer Science 2020
- Network security AIOps for online stream data monitoring
  Neural Computing and Applications, Q1, DOI 10.1007/s00521-024-09863-z, Springer Nature, 2024
- Is mouse dynamics information credible for user behavior research? An empirical investigation
  Computer Standards & Interfaces, Q1, DOI 10.1016/j.csi.2024.103849, Elsevier, 2024
- Collaborative software design and modeling in virtual reality
  Information and Software Technology, Q1, DOI 10.1016/j.infsof.2023.107369, Elsevier, 2024
- Cognitive abilities and visual complexity impact first impressions in five-second testing
  Behaviour & Information Technology, Q2, DOI 10.1080/0144929X.2023.2272747, 2023
- Effect of Low-Level Interaction Data in Repeat Purchase Prediction Task
  International Journal of Human–Computer Interaction, **Q1**, DOI 10.1080/10447318.2023.2175973, 2023
- Software engineering whispers: The effect of textual vs. graphical software design descriptions on software design communication**, Empirical Software Engineering, Q1,** DOI 10.1007/s10664-020-09835-6, Springer, 2020
- Differential Private Federated Learning in Geographically Distributed Public Administration Processes
  Future Internet, Q2, DOI 10.3390/fi16070220, 2024
- TBA …

doc. Ing. Ján LANG, PhD.



Associate Professor - Teaching Activity

- VISS_I - Research in Intelligent Software Systems
- MIP_B - Engineering Methods
- Supervisor for Bachelor and Master Thesis
- Supervisor for PhD study

Researcher Profile

My research interests involve object-oriented analysis and design, software technology, complex event processing, educational content specification and modelling, learning management and content management. I explore extending and adapting techniques of software development to other areas with a particular interest in education.

ENTERPRISE ARCHITECT git GitHub GitLab Jira ATLASSIAN Bitbucket

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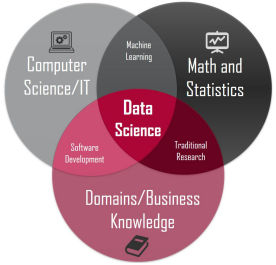
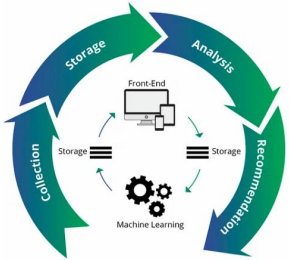
doc. Ing. Giang NGUYEN, PhD.

Associate Professor - Teaching Activity



Intelligent Data Analysis (IAU_B)
- Introduction to Data Science
- Machine Learning, Deep Learning
- Responsible AI

Intelligent System Applications (ISA_I)
- Applied Machine Learning
- Recommender Systems
- Privacy Preserving



Supervisor for
- Bachelor Thesis
- Master Thesis
- PhD study

Senior Scientist in Computer Science

Motto: Responsible AI and creative solving of scientific and technological problems in the research fields

Expertise: Machine Learning, Deep Learning, Applied Soft Computing, Privacy and Security, IT/HPC/PDC

- ORCID profile 0000-0002-6769-0195
- Scopus Author ID 55597236900
- Web of Science Researcher ID S-3291-2016
- Google Scholar profile

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doc. Ing. Fedor LEHOCKI, PhD., MPH

Associate Professor - Teaching Activity

Software Architecture (AS_I)
- Expressing software architecture in UML
- Microservices and containers
- Software Architecture for Big Data & Cloud

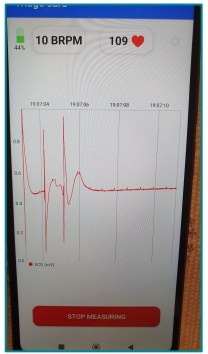
Principles of Information Systems (PIS_B)
- Modeling and management of business processes, process mining
- BPMN language

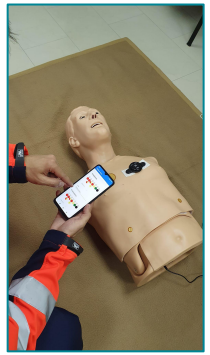
Supervisor for Bachelor, Master Thesis, PhD study

Researcher Profile

Telemedicine (development of digital tools for mental health, emotion management, non-communicable diseases)

Social Robotics (human-robot interaction, use of robots as assistive companions for elderly)





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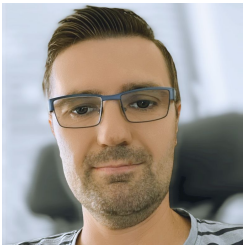
Ing. Eduard KURIC, PhD.



Assistant Professor - Teaching Activity

Introduction to Web Technologies (WTECH_B)
Web Architectures, Core Technologies and Concepts, Responsive Web Design, Web Frameworks
Project: online shopping application

Development of Progressive Web Applications (VPWA_B)
Reactive Web Frameworks, Single-Page Application, Core Concepts
Project: real-time communication application (Slack-like app)

Supervisor for Bachelor, Master Thesis
Consultant for PhD study

Researcher Profile

Expertise:
- Human-Computer Interaction
- User Modeling
- Human-Centered AI (machine/deep learning)
- User Experience (UX)

Founder of the successful startup UXtweak

- ORCID profile 0000-0002-7371-5512
- Scopus Author ID 54893849100
- Web of Science Researcher ID IYT-1899-2023

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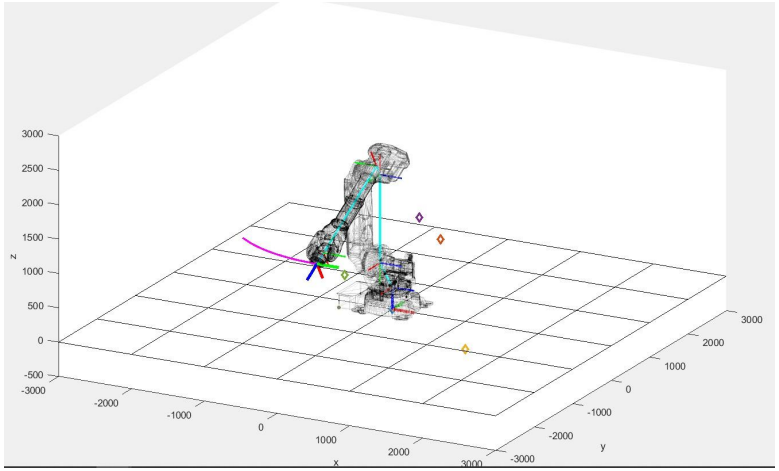
Ing. Martin KOMÁK, PhD.

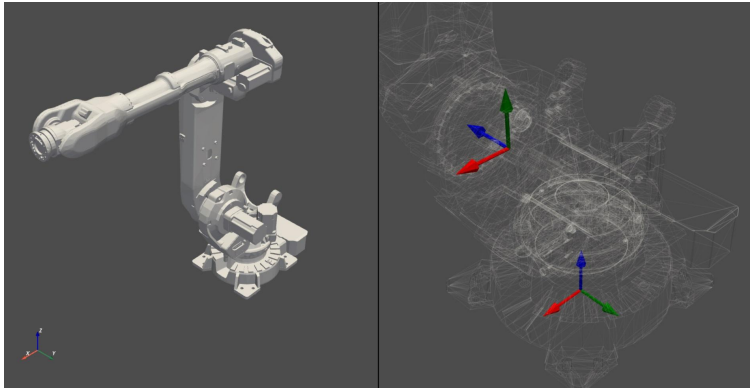
Assistant Professor – Teaching Activity

- Artificial Intelligence (UI_B)
- Data Structures and Algorithms (DSA_B)
- AI instructor for the FIIT STU Academy
- Supervisor for Bachelor Thesis, Master Thesis



Researcher Profile

My research topics is **Artificial Intelligence (AI)** and industrial robotics with a focus on the deployment of AI in engineering applications, as well as on popularizing the use of AI in industry.



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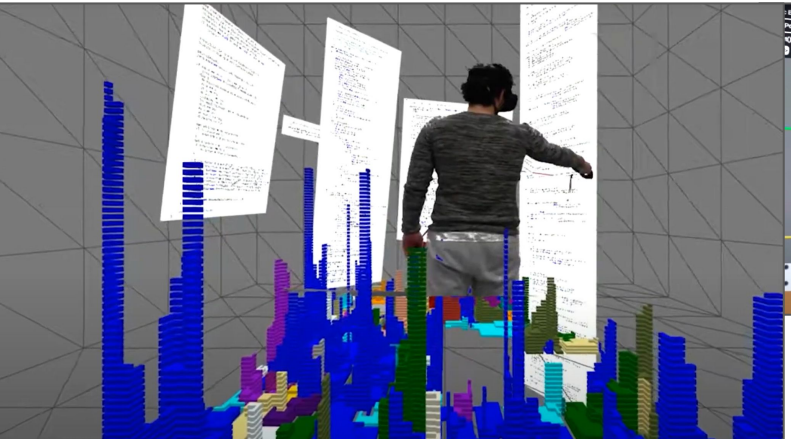
Ing. Juraj VINCÚR, PhD.

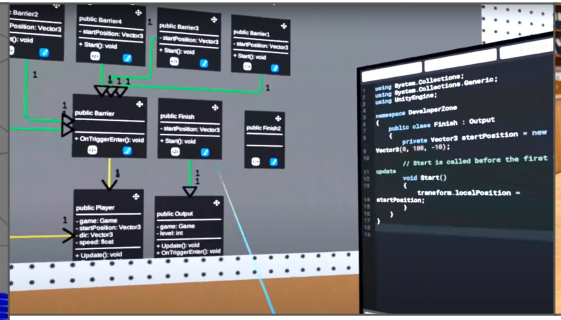
Assistant Professor - Teaching Activity

- Software Modeling (MSOFT_B)
- Software Languages (SJ_I)
- Theoretical Foundations of Information Sciences (TZIV_B)
- Supervisor for Bachelor and Master Thesis

Researcher Profile

- Supervisor of 3D Lab
- Specializing in applications of virtual reality (VR) and augmented reality (AR) in software engineering, education, and assistive technology





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