National Technical University
«Kharkiv Polytechnic Institute»

Software Engineering and
Management Intelligent
Technologies Department

SEMIT

Leader among technical universities in Ukraine in The Times Higher Education Impact Rankings 2025

In the TOP-5 best Ukrainian universities in the QS WUR 2026 world ranking

Cooperation Proposal

NTU "KhPI", Kharkiv, 2025

Who We Are

The department was founded more than 60 years ago by Professor Areg Dabagyan in 1964. Our path:

- **1964** - Automatic control movement, majoring in flight dynamics

- **1977** - Computer-aided control systems, majoring in computer sicence and computer-aided systems software

- **2015** - Software engineering and management intelligent technologies, majoring in software engineering, computer science and intelligent systems

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Our Team

Our team includes scholars, researchers, post-docs, and assistants who inspire students to achieve their goals!

- **41** teachers: **5** D.Sc., **29** Ph.D., **7** instructors and assistants

- **27** English-speaking teachers (B2+)

- **14** engineers and methodologists

Contacts:

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https://web.kpi.kharkov.ua/asu/en/
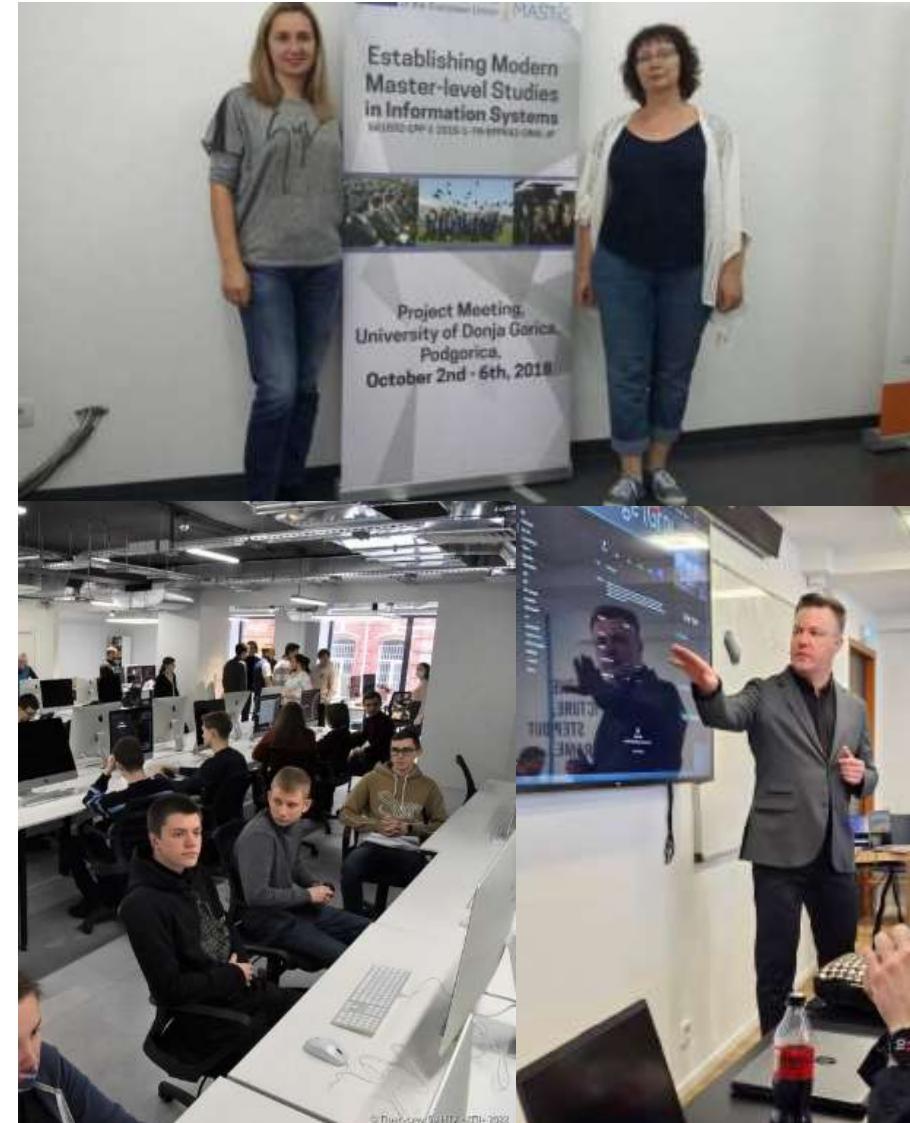
Teaching

We provide study programs at Bachelor, Master, and PhD academic levels in:

- **Software engineering**

- **Computer science and intelligent systems**

Bachelor programs are **internationally accredited by German ZEvA agency**

During the academic year we train:

- **700+** bachelor students

- **150+** master students

- **20+** doctoral students

Research

Our **core research directions** include but not limited to the following topics:

- Quality management of software development processes

- Intelligent monitoring of real-time data in control systems

- Development of integrated software complexes for solving problems in the field of software engineering and IT education

- Analysis and synthesis of complex systems

- Management of dynamic systems under conditions of uncertainty

Our R&D Projects 1/3
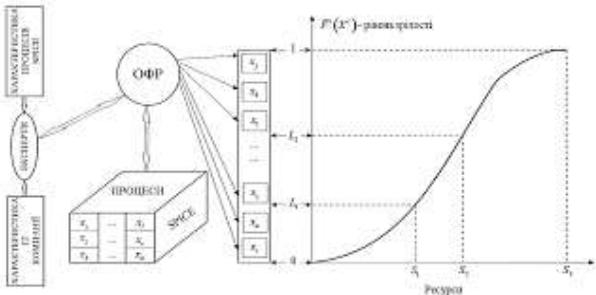
Models, algorithms and information technology for planning the development of the software fulfilment process based on the SPICE INT model

Supervisor: Prof. Mykhailo Godlevskyi
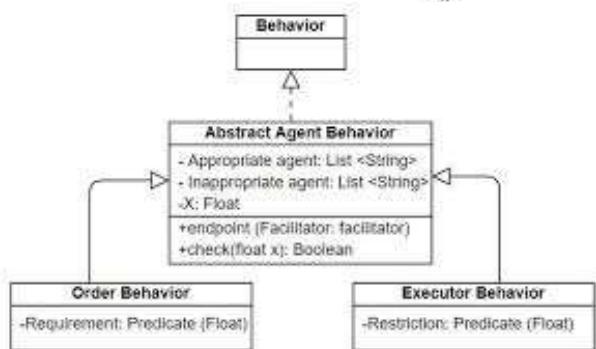
Development of methods for intelligent monitoring of relevant data in management systems

Supervisor: Prof. Olga Cherednichenko
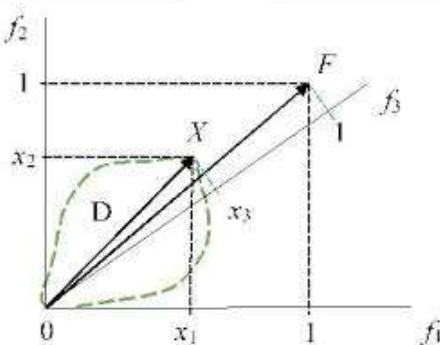
Development of software solutions for improving the efficiency of managing parallel processes

Supervisor: Prof. Serhii Shevchenko

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Our R&D Projects 2/3
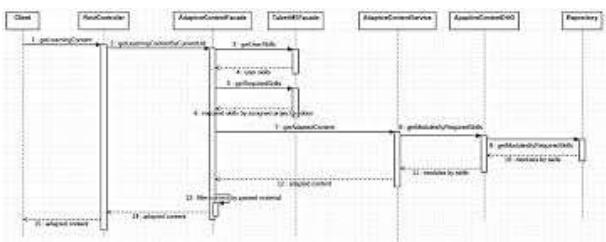
Software development methods and tools for IT companies personnel training using corporate knowledge
Supervisor(s): Associate Profs. Volodymyr Sokol, Mariia Bilova

Development of a set of models for dynamic systems management under uncertain conditions
Supervisor(s): Prof. Valentyna Moskalenko, Associate Prof. Nataliia Fonta

Development of models and methods for collecting and automated processing of business information in the Web
Supervisor: Associate Prof. Serhii Orekhov
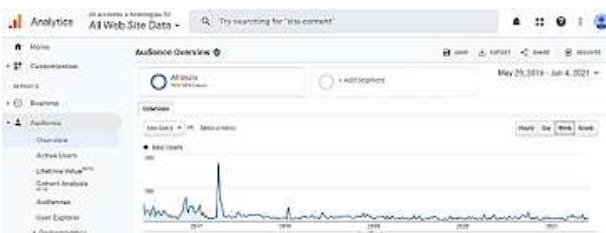
Our R&D Projects 3/3
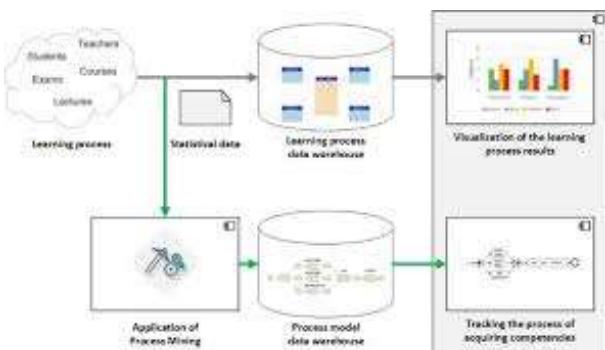
Models and methods of analysis and synthesis of complex systems
Supervisor(s): Prof. Ihor Hamaiun,
Associate Prof. Oleksandr Shmatko
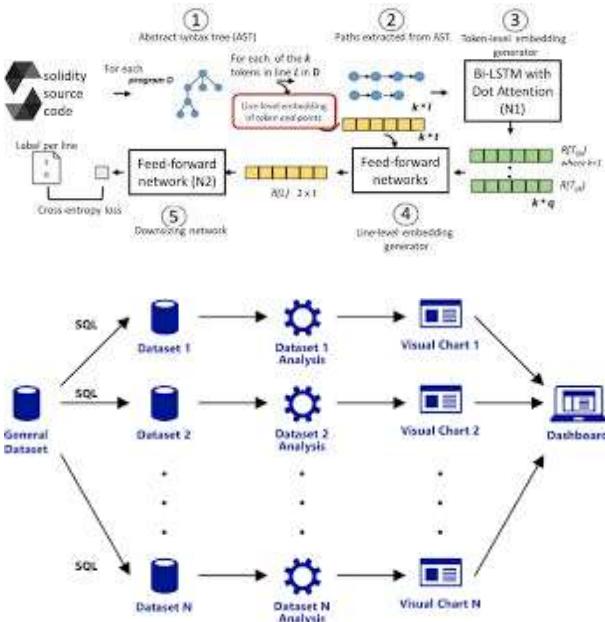
Development of models, methods and information technologies for evaluating complex multi-attribute objects and systems
Supervisor(s): Associate Profs. Oleksandr Shmatko, Iryna Liutenko

Development of models and information technologies for the analysis and improvement of complex organizational and software systems
Supervisor(s): Prof. Dmytro Orlovskyi, Associate Prof. Andrii Kopp

Innovation Campus

First project among Ukrainian state universities that combines IT studies and co-working!

- Established in 2019

- First location opened in 2020

- Officially launched in 2022

- **QS-Wharton Reimagine Education Awards 2022 Silver Winner**

- Center for collective use of scientific equipment launched in 2025

What we can do together:

- **Hardware and software upgrade**

- **Supervision and advisory with leading ICT companies and institutions**

Innovation Campus Program

.Net / Java / PHP / Python for Data Science / Mobile Development / Ruby on Rails / JavaScript Advanced etc.

C/C++ Stage
Web Fullstack (JavaScript) Stage

Bachelor's degree

Enrollment

Selection marathon

1 year

2 year

3 year

4 year

IT-professional

2 year

3 year

Testing phase, a highly intensive period that is used to select participants

Job offer by IT company
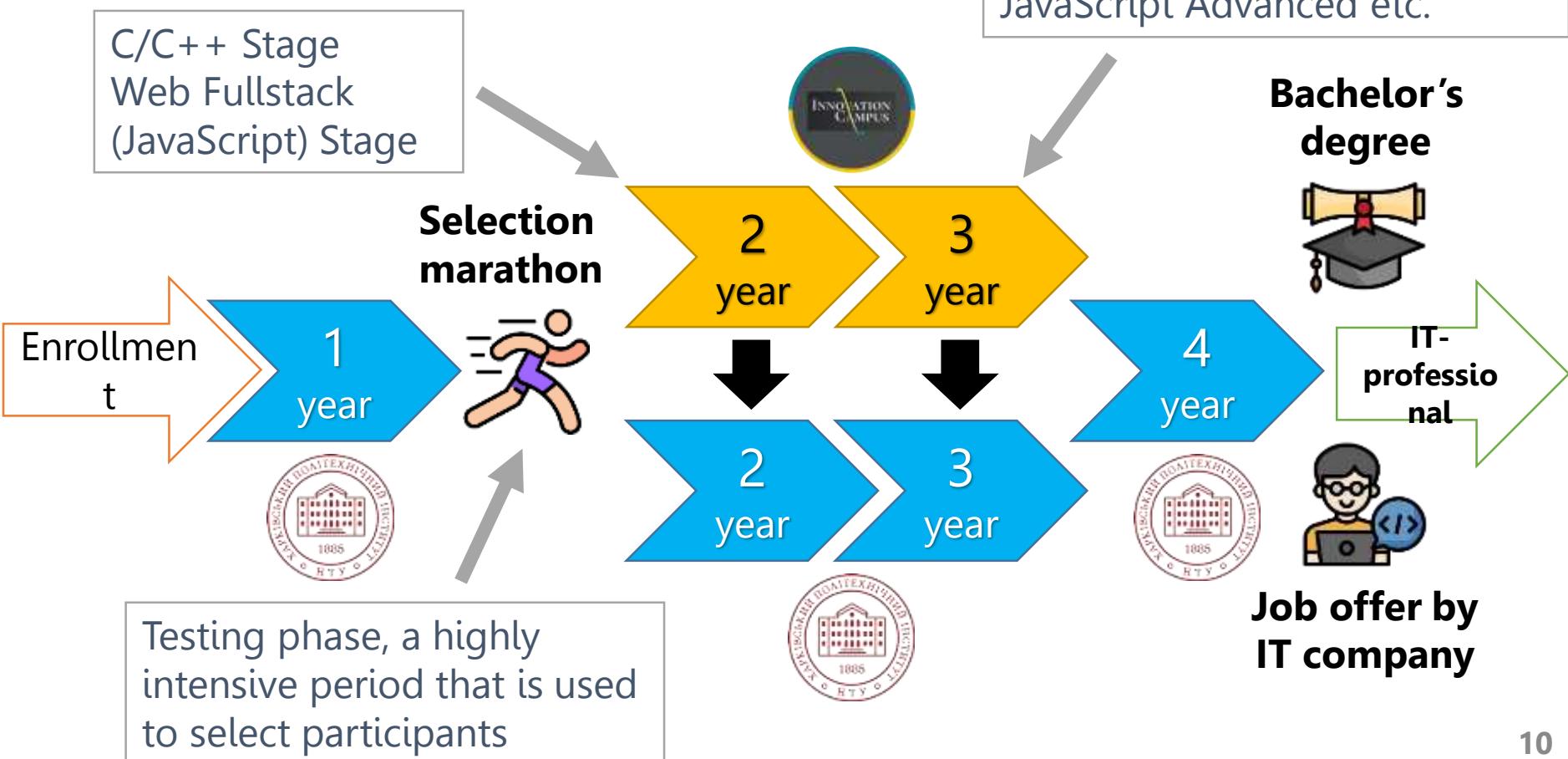
IT Center Laboratory

Launched in 2001 to **facilitate cooperation with domestic and international scientific and technical partners**, including:

- Conferences and workshops
- Thesis presentation and defenses
- Lectures of invited professors
- Laboratory classes for students
- Meetings of research groups
- Project-based training
- Scientific work and experiments
- Certifications and master-classes

Premises of **67.6 m²** for educational and scientific cooperation ready for deployment.

What we can do together:

- **Joint programs, projects, modules, courses**
- **Hardware and software upgrade**
- **Premises renovation**

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Computer Rooms

Premises of **225+ m²** for educational and scientific cooperation ready for deployment.

Under the guidance of our teachers and scholars, students of Bachelor, Master, and PhD programs master:

- Algorithms, Programming, Operating systems, Computer networks, Cloud technologies

- Databases, Web development, Software design, Cybersecurity, Software quality and testing

- Machine learning, Data mining, Deep learning, Intelligent systems, Text mining, Business intelligence

What we can do together:

- **Joint programs, projects, modules, courses to launch**

- **Hardware and software upgrade**

- **Premises renovation**

International Cooperation

Joint-study programs, Erasmus+ and domestic programs, student and teacher internships, education and research projects in ICT:

- Alpen-Adria-Universität **(Austria)**

- Bratislava University of Economics and Management **(Slovakia)**

- Hamburg University of Technology **(Germany)**

- Kaunas University of Technology **(Lithuania)**

- RWTH Aachen University **(Germany)**

- Université Lumière Lyon 2 **(France)**

- University of Maribor **(Slovenia)**

- University of Paris 13 **(France)**

Our Proposals

Areas of R&D cooperation:

- Collecting, processing and analyzing information from open sources

- Agent-oriented software development

- Processing of weak-structured textual data

- Software engineering process improvement

- Dynamic systems management under uncertain conditions

What we can do together:

- Guest lectures and workshops

- Study programs, courses validation and certification

- Joint programs, modules, projects, courses

- Students and teachers internships and certifications

- Hardware and software upgrade

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ICT Company / (HEI) Institution

↓ Problems to Study and Solve

↓ Industry Professionals

↓ Software, Hardware, Branding

↑ Employees, R&D Solutions

Guest Lectures and Workshops

Internships

Certifications

R&D Activities

Projects

Outsource / Consulting

Joint Initiatives
(programs, projects, modules, courses)

Joint ICT Labs

Virtual

Physical

↑ Teachers, Researchers

↑ Students, Postgraduates

Research Infrastructure

↑ Modern Programs, Equipment ↓

Innovation Campus Lab ⟷ SE & MIT Department ⟷ Other Institute Departments ⟷ Departments of other KhPI Institutes

Institute of Computer Science & Information Technology ⟷ Other KhPI Institutes

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