



**DEPARTMENT OF AUTOMATION AND HUMAN  
MACHINE INTERACTIONS**

**Marek VAGAŠ**

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**Consultation time:** Wednesday: 09:00 – 10:40, Friday: 09:00 – 10:40

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**Curriculum**

2000-2005: Faculty of Mechanical Engineering, Technical University of Kosice, Slovakia  
2005: University graduate, field: Designing of production systems with industrial robots and manipulators  
2009: PhD. field: Production Technology  
2010: Young researcher  
2018: Assistant professor  
2019: Associate professor, field: Automation

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**Foreign language**

English: B2 - Independent user

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**Scientific orientation**

- Design and implementation of automated robotic workplaces
  - Collaborative robotics
  - Programming of industrial robots
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**Pedagogical activities**

Leadership training and lectures on selected subjects:

- Servo systems, Industrial buses and interfaces, Experimental methods in the field, Automation and robotics, Robotic systems, Semester project, Laboratory practicum, Fundamentals of machine diagnostics, Fundamentals of robotics, Robot control and programming, CA methods of structural design I, III, Robotic systems II, Diploma thesis, Robotic technology, Robot control II., Peripheral devices of production machines, Theory of construction of robotic devices III., Robotics, Service robots.

Implementation of periodic teaching courses for international company PAS - Process Automation Solutions in collaboration with the Institute of Lifelong Learning TUKE since. 2016 – until now

Implementation of training blocks for employees of GETRAG FORD Transmissions Slovakia with seat in Kechnec (2013) and employees of VIPO, company Partizánske Slovakia (2015)

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## Projects

Co-coordinator and project coordinator of followed project sub-activities:

- **VEGA 1/0330/19** Research and design of algorithms and systems for fusion of disparate data in multisensor architectures. Project leader: doc. Ing. Alena Galajdová, PhD.
- **APVV - Reg00169-0001/2010-2013** A complex modular robotic system of the middle category with higher intelligence. Project leader: prof. Ing. Mikuláš Hajduk, PhD.
- **VEGA 1/0810/11** Principles of profiling and cooperation of multirobotic systems. Project leader: prof. Ing. Mikuláš Hajduk, PhD.
- **KEGA 059TUKE-4/2014** Development of quality of life, creativity and motor skills of handicapped and elderly people with the support of robotic devices. Project leader: prof. Ing. Mikuláš Hajduk, PhD.
- **ITMS 26220220164/2012-2014** - Applied research of systems of intelligent manipulation of industrial robots with non-oriented 3D objects / cooperation with MIA Engineering Company, Dubnica nad Váhom. Project leader: prof. Ing. Mikuláš Hajduk, PhD.
- **ITMS 26220220182/2013-2015** - TECHNICOM University Science Park for innovative applications with the support of knowledge technologies. Pilot project leader PP2: prof. Ing. Mikuláš Hajduk, PhD.
- **ITMS 26220120060/2010-2013** - Technical, Environmental and Human Risk Management Research Center for the Sustainable Development of Production and Products in Mechanical Engineering. Responsible: prof. Ing. M. Hajduk, PhD.
- **International project: 2015-1-SK01-KA202-008970** – Erasmus plus, RUSOS - Robotics for secondary vocational school teachers. Responsible for TUKE: prof. Ing. Mikuláš Hajduk, PhD.
- **International project: 2015-1-PL01-KA202-016625** – Erasmus plus, SPOSH - Strategic Partnership for Occupational Safety and Health. Responsible for TUKE: prof. Ing. Mikuláš Hajduk, PhD.
- **International project: 2016-1-ITO1-KA202-005599** – Erasmus plus, AuToMa - Automation, Technology transfer and Managerial practices for the growth of SMEs, a better employability and the promotion of the entrepreneurship. Responsible for TUKE: prof. Ing. Mikuláš Hajduk, PhD.

## Stays abroad

- Basic course of offline robot programming, RobotStudio (Slovakia, Trnava, ABB, certificate), 2013
- Basic course of offline robot programming, KUKA (Certificate - KR C2, Austria, Linz), 2014
- Lecture stay during the solution of the international project output RUSOS on behalf of TUKE, Kazimierz Dolny, 5 days, Lublin university of Technology, Poland, 2016
- Lecture stay during the solution of the international project output SPOSH on behalf of TUKE, Mortágua, Portugal, 10 days, CENTRO DE INICIATIVAS EMPRESARIAIS E SOCIAIS - IEBA, 2016
- Lecture stay during the solution of the international project output AUTOMA on behalf of TUKE, Tenerife, Spain, 5 days, Consulting and strategic consulting company - CARSA, 2017

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## Memberships, awards

- Honorary member of NCR – **National centrum of robotics**, Bratislava
- Member of the international editorial board of an online magazine – **ACTA MECHATRONICA**, Kosice
- Member of the international editorial board of an online magazine – **TRANSFER INOVÁCIÍ**, Kosice
- Best paper Award - Design of modular gripper for industrial robot (International conference ICMERA, Bucharest), 2013

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## Selected publications

- **Book:** Sensors and Transducers. In Slovak: Snímače a prevodníky / VIRGALA Ivan, MIKOVÁ Ľubica, SUKOP Marek, VAGAŠ, Marek, LIPTÁK Tomáš, KELEMEN Michal. Kosice: TU. 2017. 183 s. ISBN 978-80-553-2879-9.
- **Book:** Mechatronics of Systems. In Slovak: Mechatronika sústav / MIKOVÁ Ľubica, VIRGALA Ivan, LIPTÁK Tomáš, SUKOP Marek, VAGAŠ Marek, ŠARGA Patrik, KELEMEN Michal. Kosice: TU. 2018. 149 s. ISBN 978-80-553-2912-3.
- **Book:** Precision Positioning Reducers and Actuators in Robot Drives. In Slovak: Presné polohovacie reduktory a aktuátory v pohonoch robotov / Ján Semjon, Rudolf Jánoš, Marek Vagaš. Kosice: UK TU. 2015. 172 s. ISBN 978-80-553-2501-9.
- **Book:** Robotics - Robotics Technique. In Slovak: Robotika - Robotická technika / HAJDUK Mikuláš, SEMJON Ján, JÁNOŠ Rudolf, VAGAŠ Marek. Kosice: TU. 2015. 188 s. ISBN 978-80-553-2500-2.
- **CCC-Article:** Measurement of weight of objects without affecting the handling algorithm / SUKOP Marek, HAJDUK Mikuláš, SEMJON Ján, JÁNOŠ Rudolf, VARGA Jozef, VAGAŠ Marek. In: International Journal of Advanced Robotic Systems. Vol. 13 no. 5 (2016), p. 14-19. ISSN 1729-8814.
- **CCC-Article:** Mutual comparison of developed actuators for robotic arms of service robots / SEMJON Ján, JÁNOŠ Rudolf, SUKOP Marek, VAGAŠ Marek, VARGA Jozef, HRONCOVÁ Darina, GMITERKO Alexander. In: International Journal of Advanced Robotic Systems. Vol. 14, no. 6 (2017), p. 1-8. ISSN 1729-8814.
- **CCC-Article:** Conceptual design of a leg-wheel chassis for rescue operations / JÁNOŠ Rudolf, SUKOP Marek, SEMJON Ján, VAGAŠ, Marek, GALAJDOVÁ Alena, TULEJA Peter, KOUKOLOVÁ Lucia, MARCINKO Peter. In: International Journal of Advanced Robotic Systems. Vol. 14, no. 6 (2017), p. 1-9. ISSN 1729-8814.
- **CCC-Article:** Verification of the UR5 robot's properties after a crash caused by a fall of a transferred load from a crane / SEMJON, Ján - JÁNOŠ, Rudolf - SUKOP, Marek - TULEJA, Peter - HAJDUK, Mikuláš - JURUŠ, Ondrej - MARCINKO, Peter - VIRGALA, Ivan - VAGAŠ, Marek In: International Journal of Advanced Robotic Systems. Vol. 17, no. 1 (2020), p. 1-9 1729-8806