Preliminary **Program at a Glance** of the **RAAD 2026**

Tuesday, June 16, 2026	
19:00	*Informal welcome for conference participants.* STU University Centre - Science Café

Wednesday, June 17, 2026	
8:00 – 9:00	Registration
9:00 – 9:20	Opening ceremony
9:20 – 10:20	Keynote lecture I **Prof. Dr. MSc. Eng. Eduardo Bayro-Corrochano** *Geometric Algebra and Quantum Computing for Robot Modelling and Control*
10:20 – 10:40	Coffee break
10:40 – 12:40	Technical sessions - Robot kinematics and motion control I - Future manufacturing and robotic technologies powered by AI I
12:40 – 14:00	Lunch
14:00 – 16:00	Technical sessions - Robot kinematics and motion control II - Future manufacturing and robotic technologies powered by AI II
16:00 – 16:30	Coffee break
16:30 – 18:30	Technical sessions - Mobile, aerial (UAV) and swarm robotics - Sensing and information - control systems
19:00	*Welcome reception* Pálffy Palace on Zámocká Street

Thursday, June 18, 2026	
8:30 – 9:00	Registration
9:00 – 10:00	Keynote lecture II **MUDr. Vladimír Baláž, PhD.** *Robotic surgery; experiences and ideas for research*
10:00 – 10:30	Coffee break
10:30 – 12:30	Technical sessions - Medical, rehabilitation and surgery assisting robots - Innovative solutions of robotic applications I
12:30 – 14:00	Lunch / RAAD ISC meeting
14:00 – 14:45	Plenary session - The History of Robotics in Slovakia
15:00 – 19:00	*Excursion*
20:00	*Gala dinner* Award ceremony (Best scientific, application and student paper) Restaurant Dunajský Pivovar

Friday, June 19, 2026	
9:00 – 10:00	Keynote lecture III **Dr. Hung-Yin Tsai** *Development and Applications of Robotics in Taiwan*
10:00 – 10:30	Coffee break
10:30 – 12:30	Technical sessions - Innovative solutions of robotic applications II - Novel design of robotic mechanisms and tools for intelligent manipulation
12:30	Closing ceremony and Lunch

Detailed Technical Program

Keynote lecture I

Wednesday, June 17, 2026
Time: 9:20 – 10:20
Room: TBA

Chairs: Müller, A.

Geometric Algebra and Quantum Computing for Robot Modelling and Control
Prof. Dr. MSc. Eng. Eduardo Bayro-Corrochano

Technical session 1

Robot kinematics and motion control I

Wednesday, June 17, 2026
Time: 10:40 – 12:40
Room: TBA

Chairs: Švaco, M.

Postural Optimization of Mobile Manipulators under End-Effector Constraints through Local Redundancy Exploitation
Petric, T., Žlajpah, L.

A Low-Cost Inertial Framework for Dynamic Posturography: From Preliminary Validation to Kinematic Integration
Bottoni, E., Galletta, L., De Benedictis, C., Paterna, M., Pacheco Quiñones, D., Maffiodo, D., Roatta, S., Ferraresi, C.

Fault detection in Collaborative robots using semi-supervised techniques
Aggogeri, F., Pellegrini, N.

Stewart-Platform Six-DoF Haptic Joystick with Force-Feedback via Cartesian Wrench Compensation
Varga, B., Gashi, I., Liu, J., Galambos, P., Rudas, I.

Kinematic Design Optimization of RCM-Constrained Surgical Robots Based on Minimum Singular Value.
Moulianitis, V., Wolniakowski, A., Trochimczuk, R., Cheng, Z., Kuciej, M., Miatluk, K., Aspragathos, N.

Practicalities of Symmetric vs. One-Side-Dominant Absolute Task Control in Bimanual Robots
Avsec, O., Mihelj, M., Gams, A.

Technical session 2

Future manufacturing and robotic technologies powered by AI I

Wednesday, June 17, 2026
Time: 10:40 – 12:40
Room: TBA

Chairs: TBA

A Robot Skill-Based Framework for Complex Assembly Processes in Agile Manufacturing
Zarmakoupis, P., Prezas, L., Arkouli, Z., Dimitropoulos, N., Makris, S.

Learning-based Strategy for Composite Robot Assembly Skill Adaptation
Abuibaid, K., Sidorenko, A., Wagner, A., Ruskowski, M.

Factors Influencing Immersion in Desktop-Based Human–Robot Collaboration Simulations
Hümmer, J., Perz, T., Henrich, D.

A Modular Behavior Tree Engine for Smart Manufacturing: An AAS-Driven Framework for Autonomous Skill Execution
Rezapour, M., Darwish, A., Wagner, A., Görges, D., Ruskowski, M.

Middleware-Driven Vision Offloading for Mixed Reality Assisted Robotics
Hajdu, C., Szilágyi, Z., Galambos, P., Széll, K.

Mixed Reality–Based Spatial Task Definition and Reward Shaping for Deep Reinforcement Learning in Robotics
Matour, M., Winkler, A.

Technical session 3
Robot kinematics and motion control II
Chairs: Pellegrini, N., Aspragathos, N.

Wednesday, June 17, 2026
Time: 14:00 – 16:00
Room: TBA

Design of a Bipedal Locomotion Mechanism for Obstacle Avoidance
Mic, C., Copilusi, C., Geonea, I., Dumitru, S., Florescu, S.

Physics-Based Collision-Free Motion Planning in RobotBlockSet Using OMPL and MuJoCo
Žlajpah, L., Deniša, M., Petric, T.

Residual Physics-Informed Neural Networks for Joint Parameter Identification in Belt-Driven Robotic Systems
Kicic, A., Zhang, T., Golić, A., Nikolić, M.

Autonomous overtaking trajectory optimization using reinforcement learning and opponent pose estimation
Cihlar, M., Šiktar, L., Ćaran, B., Švaco, M.

Robust Fixed-Point Transformation-Based Adaptive Control With Prescribed Transient Behavior
Varga, B., Zsámbok, Á., Horváth, R., Tar, J.

Technical session 4
Future manufacturing and robotic technologies powered by AI II
Chairs: Hümmer, J.

Wednesday, June 17, 2026
Time: 14:00 – 16:00
Room: TBA

Design and Validation of AMR-based Tool Distribution in Aerospace Manufacturing: A Case Study
Říha, A., Wierbica, R., Krejčí, J., Krys, V.

LLM-based Integration of Contextual Knowledge in Natural Language Commands for Enhanced Robot Programming
Sucker, S., Khaleghian, S., Henrich, D.

AI-Driven Cloud–Edge Data Pipelines for Proactive Maintenance and Operation In Automated Manufacturing
Skaličan, M., Dlugolinský, Š., Hluchý, L., Škrlec, I.

Determination of Stable Conditions for Robotic Milling to Reduce Vibrations
Križan, P., Hanko, L., Tóth, T., Svátek, M.

A Survey on Soft PLC Integration within Modern Robotic and Industrial Control Architectures
Pšenka, R., Abdallah, M., Belavý, C., Kmeť, V., Pohánka, M., Kmeť, M.

Educational Use of Industrial Simulation Tools in Digital Factory and Robotics-Oriented Study Programs
Lučan, M., Smetaniuk, A., Trebuľa, M., Duchoň, F.

Technical session 5
Mobile, aerial (UAV) and swarm robotics
Chairs: Rosenfelder M., Schwenk C.

Wednesday, June 17, 2026
Time: 16:30 – 18:30
Room: TBA

Framework for coordination of heterogeneous UAV's
Zelenka, J., Kasanický, T.

Controlling the distribution of UAVs using artificial pheromone tags: Parameter Tuning
Zelenka, J., Kasanický, T., Chivarov, N.

Setpoint Control for Wheeled Mobile Robots Using Geometry-Conforming Model Predictive Controllers
Rosenfelder, M., Ebel, H., Eberhard, P.

Risk-minimizing Planning in Partially Controlled Multi-Agent Systems
Schwenk, C., Henrich, D.

Decision support system for selecting the optimal structure and parameters of a group of mobile robots
Rybak, L., Malyshev, D., Dyakonov, D., Dhar, N., Bhardwaj, R.

Deep Learning-based Algorithm for Detection of Cyber-attacks on Mobile Robot with Visual Servoing Controller
Jokić, A., Petrović, M., Miljković, Z.

Technical session 6
Sensing and information - control systems
Chairs: Abdallah, M.

Wednesday, June 17, 2026
Time: 16:30 – 18:30
Room: TBA

Object Distance Estimation from Electromagnetic Interactions in Robotics
Štironja, V., Mikulić, D., Tomić, D., Petrović, L., Marković, I., Bosiljevac, M., Šipuš, Z., Petrović, I.

Robot Assisted Freehand Ultrasound Scanning for 3D Blood Vessel Model Reconstruction
Ćirić, L., Ruzic, N., Knezevic, N., Radovic, T., Jankovic, M., Jovanović, K.

A Survey on Neuromorphic Vision Systems in the Perception of Industrial Robotics
Abdallah, M., Pšenka, R., Kmeť, M., Pohánka, M., Kmeť, V., Belavý, C.

A Biologically Inspired Vision–Language Pipeline for Explainable Scene Reconstruction from RGB Data
Rodič, A.

Classification of contact type based on the magnetic field data for tactile sensor
Sibinović, V., Apostolović, S., Raković, M.

Development of the Test Facility for Wireless Pressure Sensors
Hricko, J., Havlík, Š., Osadchyi, H.

Keynote lecture II

Thursday, June 18, 2026
Time: 9:00 – 10:00
Room: TBA

Chairs: Havlík, Š.

Robotic surgery; experiences and ideas for research
MUDr. Vladimír Baláž, PhD.

Technical session 7

Medical, rehabilitation and surgery assisting robots

Thursday, June 18, 2026
Time: 10:30 – 12:30
Room: TBA

Chairs: Jovanović, K.

Visual Servoing Based Patient Movement Compensation for Prostate Biopsy Procedure
Markulin, M., Šiktar, L., Jurdana, J., MAtijević, L., Zekulić, T., Šuligoj, F., Šekoranja, B., Kuliš, T., Hudolin, T., Švaco, M.

Structural Optimization and Prototype Development of a Lower-Limb Exoskeleton for Human Gait Rehabilitation
Geonea, I., Dumitru, N., Copilusi, C., Corzanu, A., Ionescu, A., Stancut, A., Tarnita, D.

Biomechanical Simulation of Neck Muscle Activations for Cervical Dystonia Assessment
Brecelj, T., Filipović, T., Petric, T.

Optimization of Robot Base Placement for Prostate Biopsy Planning
Touri, M., Markulin, M., Matijević, L., Šekoranja, B., Šuligoj, F., Švaco, M.

Development of a Robotic System with Force Control for Dynamic Hip Screw (DHS) Insertion Procedure Towards Autonomous Orthopedic Trauma Surgery
Larios, C., Kouzelis, A., Nikolakopoulos, G., Koustoumpardis, P.

Implementation of Digital Twins in Unity with React Native and MQTT Communication for Rehabilitation Robotics
Stoev, P., Guler, Y., Yumer, D.

Technical session 8

Innovative solutions of robotic applications I

Thursday, June 18, 2026
Time: 10:30 – 12:30
Room: TBA

Chairs: , Raileanu, S.

Impact of snow cover on mobile robots traversability in urban areas
Koszyk, J., Ambroziński, Ł.

Onboarding Developers into Robotics Ecosystems: A Modeling-Driven Approach with LLM Assistance
Meckel, D., Egelhof, J., Gassen, E., Berns, K.

Automation in metamaterial design applied by Large Language Models - case study
Klarák, J., Agu, F., Hartansky, R., Andok, R.

An Integrated Robotics Framework for Inspection, Monitoring, and Cleaning of Photovoltaic Installations
Vourkos, E., Agathokleous, R., Panayides, A., Kalogirou, S., Christoforou, E.

Industrial Cleaning Robots in Dynamic AMR-populated Environments: A Case Study
Szeszák, B., Kerékjártó, I., Soltész, L., Galambos, P.

Care Lift Enabling "Two-Hand Support" Motion to Provide Reassurance to Care Recipients
Sakaki, T., Lee, Y., Kihara, Y., Kimura, N.

Plenary session
Chairs: TBA
Thursday, June 18, 2026
Time: 14:00 – 14:45
Room: TBA

The History of Robotics in Slovakia

Keynote lecture III
Chairs: Budinská, I.
Friday, June 19, 2026
Time: 9:00 – 10:00
Room: TBA

Development and Applications of Robotics in Taiwan
Dr. Hung-Yin Tsai

Technical session 9
Innovative solutions of robotic applications II
Chairs: Vourkos, E.,
Friday, June 19, 2026
Time: 10:30 – 12:30
Room: TBA

Vision-Based Reconstruction of Silicon Ingots for Surface Resistivity Measurements
Galli, D., Vian, A., Vidoni, R.

Robotized assembly of metal panels using compliant vacuum-based end-effector
Cristea, I., Raileanu, S., Borangiu, T., Legat, C.

Robotic Removal of Sand Residuals from Castings Using Reinforcement Learning
Kitzinger, A., Gattringer, H., Müller, A., Mariadass, M.

Real-Time Apple Detection and Tracking in Orchard Environments Using Deep Learning and Computer Vision
Nuhić, A., Mihelj, M., Mongus, Ž., Munih, M., Germšek, B.

Model-based Path Planning for Robotic Wire and Arc Additive Manufacturing of hybrid porous components
Kleinschmidt, S., Kolditz, T., Schatull, A., Seewig, J., Raatz, A.

Design of a Constant-Force Mechanism for Stack Pressure Control in Solid-State Battery Modules
Chen, Y., Chao, C., Wang, F.

Technical session 10
Novel design of robotic mechanisms and tools for intelligent manipulation
Chairs: Petric, T., Gasparetto, A.

Friday, June 19, 2026
Time: 10:30 – 12:30
Room: TBA

Kinematic Analysis of an Aircraft Wing Trailing Edge Based on Flexible Morphing Mechanisms
Xi, J., Benatar, A., Ghosh, A.

MARINERO: Robot Digital Twin for Simulation of Autonomous Navigation in Nautical Marinas
Androšić, A., Šiktar, L., Ćaran, B., Dragičević, N., Jakovljević, J., Švaco, M.

Kinematic Null-Space Torque Minimization for Extended-Tool Manipulation
Sifrer, J., Petric, T.

Workspace Analysis of an Industrial Robot for Precision Machining Applications
Florean, E., Gasparetto, A., Scalera, L., Vidoni, R.

Probabilistic Grasping with Soft Multi-Fingered Grippers: Experimental Success-Rate Matrices
Todić, V., Ružić, N., Knežević, N., Jovanović, K.

Mechanical Architectures and Locomotion Concepts in In-Pipe Robotics: A Brief Review
Osadchyi, H., Hricko, J.