



RoManSy 2026

26th CISM IFTOMM Symposium on Robot
Design, Dynamics and Control

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26th CISM IFToMM Symposium on Robot Design, Dynamics and Control (RoManSy 2026) Program Overview

Dates / Time Intervals	Monday (14.09.2026)	Tuesday (15.09.2026)	Wednesday (16.09.2026)	Thursday (17.09.2026)
08.30- 09.00	Registration			Excursion- Boat Trip
09.00- 10.00	Welcome Talks	S5: Special Topics in Robotics	S9: Special Topics in Robotics	
10.00- 11.00	Keynote Speaker 1	Keynote Speaker 2	Keynote Speaker 3	
11.00- 11.30	Coffee Break			
11.30- 12.30	S1: Medical Robotics	S6: Medical Robotics	S10: Medical Robotics	
12.30- 14.00	Lunch Break			
14.00- 15.00	S2: Mobile Robots	S7: Mobile Robots	S11: Robot Modelling and Analysis	
15:00- 15.30	Coffee Break			
15.30 – 16.30	S3: Robot Control	S8: Robot Control	S12: Robot Modelling and Analysis	
16.30- 17.00	Coffee Break			
17.00– 18.00	S4: Robot Mechanisms	Smart Robotics by Siemens	S13: Robot Mechanisms	
18.00- 18:45	Free Time	Laboratory Tours *	Free Time	Free Time in Çeşme
18.45- 19:00		TC/ISC Meeting *		
19.00- 22:00	Welcome Cocktail	Free Time in Urla	Gala Dinner	

*: These events will take place at the Department of Mechanical Engineering, IzTech.

14th September 2026, Monday

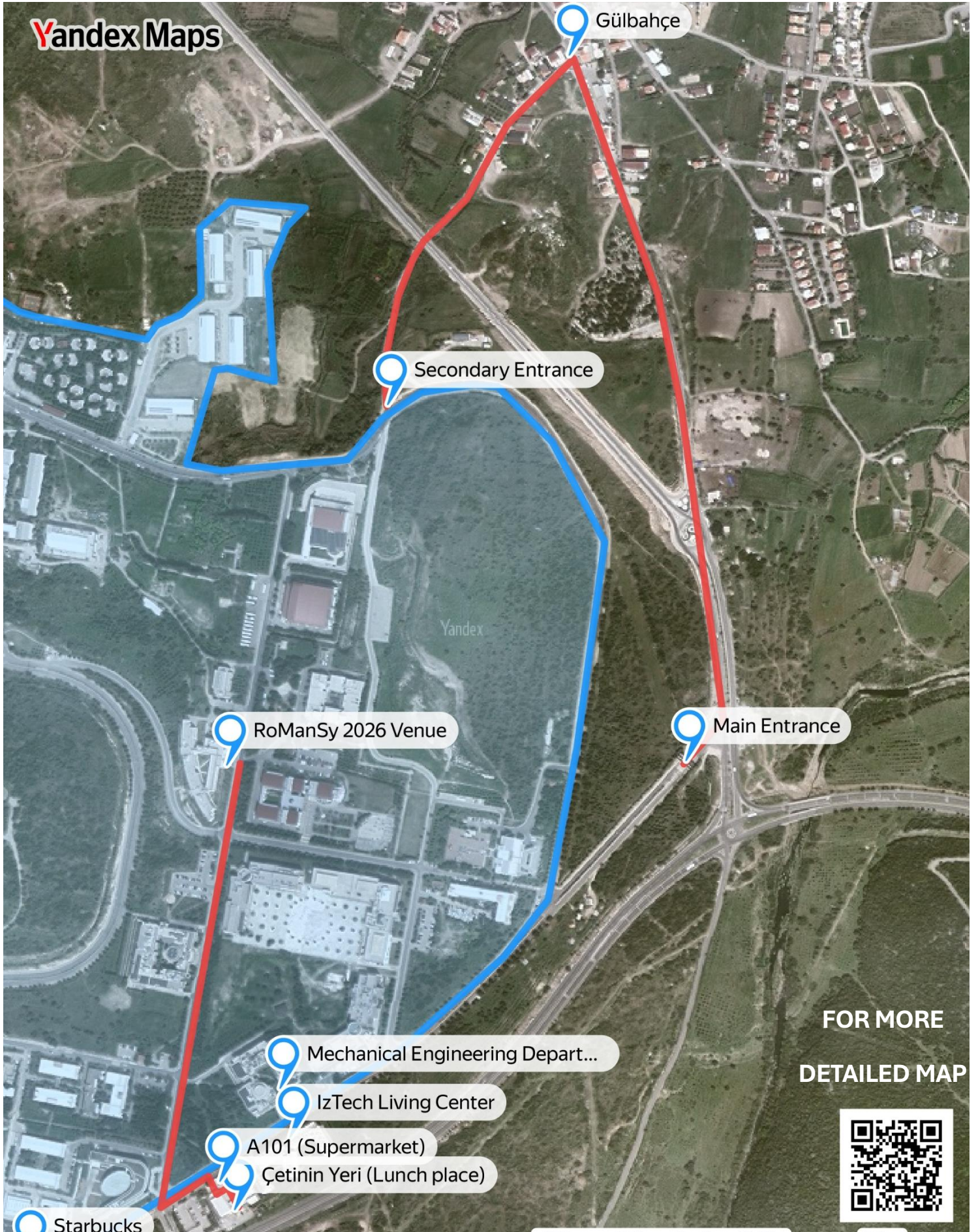
Keynote Speaker 1 10.00-11.00 Session Chair: M. İ. Can Dede	
Machine Learning for Resolving Conflicts in Physical Human-Robot Interaction	Çağatay Başdoğan
Session 1 Medical Robotics, 11.30 – 12.30 Session Chairs: Abdelbadia Chaker, Erkin Gezgın	
Edge Machine Learning on an Embedded IMU Core for Stationary State and Walking Speed Level Detection in Microprocessor-Controlled Prosthetic Knees	Günaydın, Y., Uzun, B., Adıgüzel, E., Konukseven, E.
Design Requirements and Conceptual Development of a Pediatric Lower-Limb Rehabilitation Device	Zhetenbayev, N., Sagynbayev, N., Rysbek, A., Nurgizat, Y., Sultan, A., Sergazin, G.
Upper Limb Rehabilitation Robot Based on 5-bar Linkage with Variable Stiffness	Nelson, C., Li, Y.
Design and Experimental Validation of an Active Ankle Prosthesis Based on BLDC Actuation and Spherical Gear Coupling	Zhetenbayev, N., Akhmejanov, S., Copilusi, C., Sergazin, G., Ozhikenov, K.
Session 2 Mobile Robots, 14.00-15.00 Session Chairs: Andrea Botta, Giuseppe Quaglia	
Real-Time NMPC Unifying Planning and Tracking for 6 × 6 Skid-Steer UGVs Under Energy Constraints	Ulusoy, K., Beşir, M., Konukseven, E.
Monitoring the Soil Respiration with an Autonomous Mobile Robotic System	Scalera, L., Musso, S., Tiozzo Fasiolo, D., Gasparetto, A., Alberti, G.
Robust Six-DOF Motion Control of a Fully-Actuated Tricopter with Independently Tilting Rotors	Baspınar, C., Gülec, Y., Alaca, H.
Development of Disaster Victim Search Robot Equipped with Starfish-shaped Wheels and a Jumping Mechanism	Mineshita, H., Lim, H.
Session 3 Robot Control, 15.30-16.30 Session Chairs: M. İ. Can Dede, Omar Maarof	
Considerations on Dynamic Modeling of a Macro-Micro Manipulator and Controller Design	Brückmann, N., Knobloch, T., Mirz, C., Schicks, F., Hüsing, M., Corves, B., Tanaka, T., Miura, S., Akatani, K., Kato, K., Takeda, Y.
On the Implementation of MATLAB Simscape Multibody and Arduino: A Simplified Case Study on a Remotely Controlled 2 DOF Parallel Manipulator	Erdal, B., Özden, İ., Bulut, F., Koçak, M., Gezgın, E.
Learning Multimodal Motion Behavior of Human-Controlled Robots in a Shepherd Task	Wenger, I., Eberhard, P., Ebel, H.
A Geometry-Driven Approach Towards Trajectory Control of Objects on a Robotic Morphing Surface	Frasch, S., Weidmann, M., Sata, S., Scholz, A., Noack, B.
Session 4 Robot Mechanisms, 17.00-18.00 Session Chairs: Alexey Fomin, Marek Wojtyra	
CGA Based Kinematic Analysis and Networked Design of Platonic-Archimedean Polyhedral Mechanisms	Zhang, J., Kiper, G., Li, D., Guo, F., Ma, W., Huang, X., Lu, Q.
Structural and Constructional Synthesis of New Manipulators with General Constraint Two	Alizade, R., Huseynzade, K.
Passive Cable Tension Maintenance Using Flexible Cables in 3-DOF Cable-Driven Robot for Moving Scaffold Application in a Vertical Plane	Güleç, M., Şafak, K.
Development of a 6 DOF Stewart Platform for Precise Inkjet Printhead Positioning with a Macro-Micro System Architecture	Knobloch, T., Brückmann, N., Mirz, C., Schicks, F., Hüsing, M., Corves, B., Tanaka, T., Miura, S., Akatani, K., Kato, K., Takeda, Y.

Session 5 Special Topics in Robotics, 09.00 – 10.00 Session Chairs: Burkhard Corves, Mehmet Erkan Kütük	
An Adaptive Granular Jamming-Based Fixture for Hybrid Additive–Subtractive Robotic Manufacturing of Composite Parts	Botta, A., Tagliavini, L., Visconte, C., Quaglia, G., Kurt, B., Dede, M.
Haptic Enabled Multi-Master Multi-Slave Teleoperation of Soft Arms: Puppeteering Method	Cezayirli, H., Dede, M.
Stretchable Piezoelectric Sensing for Slip Detection in Soft Robotic Grippers	İlman, M., Sarı, A., Yıldız, Z., Koç, M., Paralı, L.
Design Requirements and Preliminary Tests of a Soft-Rigid Hand for Tomato Harvesting	Malyshev, D., Boninsegna, M., Bernardi, B., Carbone, G.
Keynote Speaker 2 10.00-11.00 Session Chair: Giuseppe Carbone	
Integration of Structural Compliance and Intrinsic Sensing of Rigid-Flexible Hybrid Mechanisms	Genliang Chen
Session 6 Medical Robotics, 11.30-12.30 Session Chairs: Gökhan Kiper, Nursultan Zhetenbayev	
Design and Task Space Evaluation of 3-URS Parallel Human Neck Assistance Robot	Sadiç, A., Sugahara, Y.
Velocity Kinematics and Jacobian Analysis of a 2-DOF Above-Knee Prosthetic Leg Using the Denavit-Hartenberg Convention	Küçük, S., Alqasemi, R., Mayetin, U., Dubey, R.
Preliminary Design of a MR-Safe Parallel Manipulator for a Surgical Manipulator	Dikmen, Z., Çetin, L., Gezgin, E.
Design and Analytical Inverse Kinematic Formulation of 5-DOF RRP RR Manipulator for Limb Rehabilitation	Karagöz, İ., Küçük, S.
Session 7 Mobile Robots, 14.00-15.00 Session Chairs: Lorenzo Scalera, Cumhur Başpınar	
Advanced Bilinear Koopman Models for Predictive Control of Nonholonomic Systems	Krauspenhaar, J., Krendelsberger, E., Rosenfelder, M., Bold, L., Schimpf, I., Worthmann, K., Eberhard, P., Ebel, H.
Ant Colony Algorithm Tuned Sliding Mode Control of a Novel Adjustable Active Arm for Multirotor Drones	Özbek, C., Özgüney, Ö.
Learning-Accelerated Optimization-based Trajectory Planning for Cooperative Aerial-Ground Handover Missions	Chen, J., Yu, B., Ebel, H., Eberhard, P.
NatureCleanerBot: Design of a Sustainable Smart Robotic System for Outdoor Plastic Waste Collection	Maaroof, O., Abdulhafedh, M., AlNaimi, M., Alglamy, S.
Session 8 Robot Control, 15.30-16.30 Session Chairs: Giuseppe Carbone, Med Amine Laribi	
A Hardware Design for Assisting in Payload Positioning on Surfaces via Physical Human-Robot Interaction	Nalbant, U., Dede, M.
Joint Limit Avoidance in Redundant Manipulators Using the Gradient Projection Method with Optimal Tuning	Kütük, M., Kapucu, S.
Design and Experimental Evaluation of an Antagonistic SMA Actuator with Control-Oriented Hysteresis Analysis	Kocabaş, K., Kaya, O., Ertugrul, S., Tağlıoğlu, G.
Experimental Analysis of Admittance Control Transparency Improvement by Digital Filtering	Hoffmann, A., Kecskeméthy, A.

16th September 2026, Wednesday

Session 9 Special Topics in Robotics, 09.00 – 10.00 Session Chairs: Şeniz Ertuğrul, Rajiv Dubey	
Size by Finger (SBF) Design Approach to Overcome Ergonomic Limitations of Standardized Hand Sizes	Gelli, M., Brogi, C., Di Natale, A., Ridolfi, A., Secciani, N.
Scent-Based Landmark and Communication for EM Hostile Environments	McGuinness, D.
An Active Shoulder–Elbow Exoskeleton for Industrial Applications	Zhetenbayev, N., Madikhov, S., Ceccarelli, M.
Keynote Speaker 3 10.00-11.00 Session Chair: Gökhan Kiper	
Controlling Deformability in Robotics: From Soft Robots to Large Deformable Objects	Cosimo Della Santina
Session 10 Medical Robotics, 11.30-12.30 Session Chairs: Carl Nelson, Emir Mobedi	
Toward Assist-as-Desired Sit-to-Stand Assistance: A Preliminary Investigation of a Handrail Interface for Recognizing Assistance Desire	Zheng, J., Jiang, M., Takeda, Y.
Experimental Assessment and Characterization of a Six-Degree-of-Freedom Hybrid Haptic Interface intended for Medical Application	Koszulinski, A., Sandoval, J., Chaker, A., Zeghoul, S., Laribi, A.
An Endoscope Handling Robot's Base Placement and Wrist Configuration Considerations	Deniz, M. F., Dede, M. İ. C.
Control-Oriented Integration of a Spherical Parallel Robot for Minimally Invasive Surgery	Vaida, C., Pislă, D., Miclaus, M., Gherman, B., Horvath, D., Zima, I., Cailean, A., Tucan, P.
Session 11 Robot Modelling and Analysis, 14.00-15.00 Session Chairs: Andreas Scholz, Cosimo Della Santina	
Estimating Excavation Forces in Front-End Loader Mechanisms Based on Kinematic and Dynamic Analysis	Karanfil, D., Ravani, B.
Understanding the Nature of Vibration Modes in Serial Robots by Experimental Modal Analysis	Ibarrola-Chamizo, J., Agirre-Olabide, I., Iriarte, X., Merino-Olagüe, M., Aginaga, J.
A Hamiltonian Formulation of First-Order Decoupled Equations of Motion for Robotic Mechanisms	Mitra, S., Ravani, B.
Effect of End-Effector Mounting Angle for a Robotic Arm	Gündüz, G., Kiper, G., Dede, M., Witte, M., Corves, B.
Session 12 Robot Modelling and Analysis, 15.30-16.30 Session Chairs: Çağatay Başdoğan, Bahram Ravani	
Test and Validation of an Energy Consumption Model of an Industrial Robot	Pérez-Anaut, J., Aginaga, J., Ibarrola-Chamizo, J., Agirre-Olabide, I., Huarte, M., García, F., Garriz, C.
Collision Avoidance for a Heterogeneous Multi-Robot Arm System by 3D-Extended Buffered Voronoi Cells	Sun, X., Noda, S., Makino, K., Terada, H.
Design and Experimental Evaluation of a Non-Pitching Arm for a Humanoid Pitching Robot	Nakazawa, Y., Fukuda, T., Kuno, M., Sato, Y., Wang, B., Nago, S., Katayama, Y., Mineshita, H., Otani, T., Kawakami, Y., Lim, H., Takanishi, A.
Preliminary Design of a Series Elastic Actuator Based Delta Robot Manipulator	Tüfekci, S., Yıldırım, S., Doğan, S., Akyüz, B., Koçak, M., Gezgın, E.
Session 13 Robot Mechanisms, 17.00-18.00 Session Chairs: Rasim Alizade, Genliang Chen	
Parametric Generative Design Framework for Serial Robots	Sands, C., Jin, Y., Zhao, Z., Kirkland, F., Price, M.
Structural Synthesis of Overconstrained Platform Type Manipulators via Method of Divisions	Yazıcı, M., Koçak, M., Uslu, T., Selvi, Ö., Gezgın, E.
Experimental Validation of Overconstrained Mechanisms Modeling Methods	Wojtyra, M., Gajda, W., Pękal, M.
Development of a Novel Three-satellite Planetary Gear with a Composite Carrier	Fomin, A., Gerasimov, S.

CAMPUS MAP



Useful Links & Information

Transportation For travel options and schedules, you can visit:

ESHOT <https://www.eshot.gov.tr> [To reach the campus, you can take bus number 883/982 from İzmir and bus number 882 from Urla. Bus stop to İzmir is in front of the IzTech Living Center.]

Transportation to IzTech <https://uio.iyte.edu.tr/en/transportation/>

Transportation from airport <https://izmirairport.com/en-EN/passenger-guide/to-from-the-airport>

Moovit <https://share.google/gcZUxAUpD4FaJZaIQ>

Taxi <https://iytesepeti.com/taksi>

Campus Map <https://yandex.com.tr/maps/-/CTdCbZ5b>

Dining Looking for a place to eat? Check out local restaurant recommendations at <https://iytesepeti.com/>

Communication For events and activities during the symposium, we have created a WhatsApp Community. You can use the community to chat, ask questions, and follow event announcements and updates.

<https://chat.whatsapp.com/lttUm56MbHpDukhuTX7hoC>

Weather Stay updated with the local forecast here:

<https://www.accuweather.com/tr/tr/gulbahce/1301166/10-day-weather-forecast/1301166>

Note Even when the weather is hot, the area can get quite breezy, so we recommend bringing a light jacket or sweater.

Evening Safety Notice A quick heads-up for your evenings here, please be aware that wild boars and stray dogs are seen around the area at night.

Activities Busses for evening activities will depart at 19.00. Please be present there at least 10 minutes before.

Thursday Boat Tour We are setting sail on Thursday! Busses to the Çeşme port will depart from IzTech Living Center at 09.00. The boat, Lady Bente, will depart at 10.30 and return to shore at 17.30, until 22.00 there will be free time in Çeşme. Please make sure to pack your swimsuit and sunscreen.



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