

8:00	Registration			
9:00	Opening Session , Prof. Zvi Shiller, General Conference Chair, Prof. Moshe Shoham, Steering Committee Chair, Dr. Sigal Berman, Program Chair, Mr. Moshe Padlon, Herzliya Mayor, Peretz Vazan, Director General Ministry of Science, Technology and Space			
9:30	Robotics in the Future Battlefield , Maj. General (ret) Gadi Shamni, VP Land Systems, IAI			
10:00	Computer vision meets machine learning and human cognition , Prof. Shimon Ullman, Weizmann Institute of Science			
10:30	Coffee break			
	Track 1--Auditorium	Track 2--Pilot's Club	Track 3--Classroom 1	Track 4--Classroom 2
11:00	Session 1A	Session 1B	Session 1C	Session 1D
	Panel: Robotics as an economic and social growth engine Chair: Zvi Shiller Prof. Zvi Shiller, Ariel University	Robots in Agriculture Chair: Prof. Avital Bechar G. Adamides*, C. Katsanos, M. Xenos, T. Hadzilacos, Y. Edan, Heuristic usability evaluation of a user interface for a semi-autonomous vineyard robot sprayer , *Open University of Cyprus	Motion Planning Chair: Prof. Elon Rimon K. Solovey*, J. Yu, O. Zamir, D. Halperin, Motion planning for unlabeled discs with optimality guarantees , *Tel-Aviv University	Human-Robot Interaction Chair: Dr. Goren Gordon S. Chatterjee*, O. Shriki, T. Oron Gilad, Y. Edan, The potential role of shared mental models (SMMs) in Human Robot Interaction (HRI) , *Ben-Gurion University of the Negev
	Prof. Shlomo Mor Yossef, National Insurance Institute, Israel	R. Finkelshtain*, G. Kósa, Y. Yovel, A. Bechar, An agricultural robot for yield assessment using ultrasonic-based feature perception , *Tel Aviv University and Agricultural Research Organization	O. Salzman*, D. Halperin, Asymptotically near-optimal RRT for fast, high-quality, motion planning , *Tel-Aviv University	A. Harel*, S. Matar, S. Chatterjee, T. Oron-Gilad, O. Shriki, Human-Factors design in Human-Robotic-Interaction using a Brain-Computer-Interface , *Ben-Gurion University of the Negev
	Lieutenant Colonel Amir Shpond, IDF	*P. Kurtser, B. Arad, O. Ben Shahar, M. van Bree, J. Moonen, B. van Tuijl, Y. Edan, Robotic data acquisition of sweet pepper images for research and development , *Ben-Gurion University of the Negev	M. Mann*, D. Zarrouk, L. Danti, Minimally actuated hyper-redundant robots – novel motion planning paradigms in high dimensional space , *Ben-Gurion University of the Negev	S.S. Hunig*, D. Katz, T. Oron-Gilad, Y. Edan, Subjective preferences regarding human following robots: preliminary evidence from laboratory experiments , *Ben-Gurion University of the Negev
	Udi Gal, General Robotics	Z. Melamed*, Y. Edan, B. van 't Ooster, Analysis of human-robot harvesting operations in sweet pepper greenhouses , *Ben-Gurion University of the Negev	Y. Golan*, E. Rimon, A. Shapiro, N-Dimensional configuration space robot navigation using artificial temperature gradients , *Ben-Gurion University of the Negev	L. Sayfeld*, I. Perez, Y. Edan, Human robot collaboration in cognitive tasks , *Ben-Gurion University of the Negev
	Zvi Feuer, Siemens	V. Bloch*, A. Bechar, A. Degani, Characterization of agricultural environments by 'Reaching Cones' for optimal robot design , *Technion	S. Pathak*, A. Thomas, V. Indelman, Robust active perception for belief space planning in perceptually aliased and uncertain environments , *Technion	G. Gordon*, O. Gvrisman, Comparative social robotics , *Tel-Aviv University
	Discussion	*O. Ringdahl, P. Kurtser, R. Barth, Y. Edan, Operational flow of an autonomous sweet pepper harvesting robot , *Umeå University	A. Stern*, Z. Shiller, A Unified motion planner for off-road and dynamic environments , *Ariel University	D. Greenbaum*, Can criminal law catch up with robotics: brain machine interfaces and the subconscious , *Interdisciplinary Center
		N. Schor, S. Berman A. Dombrovsky, Y. Elad, T. Ignat, A. Bechar, A robotic disease detection system for greenhouse grown peppers , Ben-Gurion University of the Negev and Agricultural Research Organization	H. Bunis, E. Rimon, Efficient computation of three fingered caging grasps via contact space , *Technion	E. Diamant*, The only way to meet our robotics challenge is the Cognitive Robotics R&D , *VIDIA-mant
12:30	Lunch			
13:30	Session 2A	Session 2B	Session 2C	Session 2D
	Opportunities in the Chinese Market Chair: Hao Yucheng Mr. Jiang Zhou, Deputy Counsel of GDD	Rehabilitation and Assistive Robotics Chair: Dr. Shelly Levy-Tzedeck B. Karan*, A. Rodić, M. Vujović, I. Stevanović, M. Jovanović, Implementation architecture of a home robot assistant , *Serbian Academy of Sciences and Arts	Dynamics and Control 1 Chair: Dr. Raziel Riemer A. Sheffer*, O. Shai, A new method for characterization singular configurations of parallel mechanisms , *Tel-Aviv University	Education and Robotics 1 Chair: Prof. Igor Verner A. Friesel*, Training engineering disciplines and skills through robot projects , *Technical University of Denmark
	Mr. Ouyang Quan, Chairman of the Board, Sino-Israeli Robotics Institute, and Shenzhen Huafeng Century Investment Group	M. Ceccarelli*, G. Carbone, A cable parallel mechanism for exercising elderly people , *University of Cassino and South Latium	P. Aranyi*, I. Or, J. Dayan, Optimization of a hybrid robot's weight lifting ability , *Technion	D. Spikol, A. Friesel*, N. Ehrenberg, Supporting robotics education in STEM with learning analytics , *Technical University of Denmark
	Ms. Wang Wei, China-Israel Cooperation Task Force, Office of International Economic Cooperation Mechanisms, National Development and Reform Commission (NDRC), China	Y. Stiefel*, Y. Raanan, D. Rea, S. Berman, E. Sharlin, J.E. Young, S. Levy-Tzedeck, "Hands off" interactive human-robot interaction paradigm for physical therapy , *Ben-Gurion University of the Negev	M. Gad*, B. Lev Ari, A. Shapiro, M. Peretz, A. Cervera, R. Riemer, Biomechanical knee energy harvester: modeling and design-based optimization , *Ben-Gurion University of the Negev	D. Cuperman*, I. Verner, Learning with bioinspired robots: Constructing a snake , *Technion
	Mr. Hao Yucheng, China Robotics Industry Alliance	D. Elizcovits*, I. Tabak, Y. Edan, S. Levy-Tzedeck, Robotic caregiver for functional upper limb rehabilitation , *Ben-Gurion University of the Negev	B. Lev Ari*, M. Gad, A. Shapiro, M. Peretz, A. Cervera, R. Riemer, Biomechanical knee energy harvester: finding an optimal harvesting level , *Ben-Gurion University of the Negev	I. Verner*, d. S. Gamer, Spatial training of novice engineering students in the industrial robotics laboratory , *Technion
	Mr. David Zhang, Sino-Israeli Robotics Institute	D.G. Liebermann*, S. Berman, Robot-based upper limb neuro-rehabilitation in practice , *Tel-Aviv University	E. Korkidi*, M. Borich, Tool calibration of 6 DoF industrial robots , *Servotronix Automation Solutions	E. Matayev*, S. Gulst, Scaffolding enhancing high level thinking in high school robotics projects , *Onel-Shem High School
		N. Tzidon*, Z. Shiller, An assistive device to help a person sit and rise of a toilet seat , *Ariel University	D. Cohen*, O. Shai, Tensegrity structures- robots of minimal energy , *Tel Aviv University	L. Revzin, I. Verner*, Teaching automated chemistry laboratories: characteristics and outcomes , *Technion
14:45	Session 3A	Session 3B	Session 3C	Session 3D
	Opportunities in Global Markets Chair: Dr. Andrea Forni A. Goldenberg, Engineering Services Inc., Toronto, Canada, ANZER Intelligent Engineering Co., Ltd. Shenzhen, China, Robotics from a business point of view	Robotics and the Internet Chair: Dr. Anat Goldstein J. Martin*, Extraterrestrial rovers and surgical robots: down-to-earth lessons from Mars , *Real Time Innovations	Dynamics and Control 2 Chair: Dr. Amir Degani Y. Lubarsky, A. Wolf, L. Wolf*, C. Batliner, J. Newsom, Software-based compliant robotics , *Tel Aviv University	Education and Robotics 2 Chair: Prof. Eli Kolberg I. Kipnis*, E. Kolberg, Humanoid biped robot as a tool for enhancing robotics study , *Golda Meir High School
	A. Forni, FRN Trading Strategies, Robotics from an investor's point of view	S. Mark*, A. Safrani, Automation metrology , *KLA-Tencor Israel	A. Gaathon*, A. Degani, Adaptive swing leg retraction control for robust dynamic locomotion under large terrain variations , *Technion	S. Salzman*, E. Kolberg, Leadership development through robotic project based learning , *Kiryat Hinuch Le'mada'im
	R. Braier, IAI, TaxiBot: A large robot project by a large company for the global market—opportunities and risks	N. Sagi*, O. Afgin, S. Berman, A data-driven telerobotic system , *Ben-Gurion University of the Negev	E. Assa*, E. Ahissar, Robotic implementation of motor-sensory Closed-Loop Perception (CLP) , *Weizmann Institute of Science	E. Korchnoy*, M. Shoham, Creating ideas for traffic safety within the framework of the Robotraffic competition , *Technion
	A. Zeevi, ISERD, Funding opportunities in Europe	A. Goldstein*, A. Meitin, S. Bohadana, L. Fink and G. Ravid, Internet of Things in agriculture: an engine for increasing farm productivity and efficiency , *Ben-Gurion University of the Negev	M. Bar-Sinai*, R. Brafman, M. Ashkenazi, Performance Level Profiles: A formal language for describing the expected performance of functional modules , *Ben-Gurion University of the Negev	I. Levin*, V. Talis, M. Sela, Complete Web service for designing and fabricating robots by students , *Tel-Aviv University
			R. Amit*, G. Kosa, Micro scale particle maneuvering , *Tel Aviv University	M. Haronian*, Y. Elitzur, H. Greenblatt, D. Greenfeld, O. Nahum, Robotic Harvesting Machine for Watermelons , *Ariel University
15:45	Coffee break			
16:15	Opportunities and Challenges—Depth Analysis of the Chinese Robot Industry , Dr. Daokui Qu, President, Siasun Robotics and Automation			
16:35	Robots for Good: An Assessment of the Contribution of Robotics to Quality-of-Life , Prof. Steven Dubowsky, MIT			
17:05	From Geometry to Startups , Prof. Zexiang Li, Hong Kong University of Science and Technology, Co-Founder DJI			
17:35	Welcome notes by IFTOMM President , Prof. Marco Ceccarelli			
17:45	Closing			

Thursday, 14 April				
8:00	Registration			
9:00	Robotics at Intel, Lior Storfer, Intel			
9:30	The da Vinci Surgical System and an overview of soft tissue surgical robotics, Dr. Jonathan Sorger, Intuitive Surgical			
10:00	Coffee break			
	Track 1--Auditorium	Track 2--Pilot's Club	Track 3--Classroom 1	Track 4--Classroom 2
10:30	Session 4A	Session 4B	Session 4C	Session 4D
	ISIRACAS 1 Chair: Prof. Moshe Shoham I. Perez*, O. Shilon, G. Kosa, LapaRobot - ultrasound guided robot for MIRS, *Tel-Aviv University H. Ziso*, M. Shoham, A planar modular 2-DoF hybrid tensegrity mechanism for endoscopic applications analyzed by dual Jacobian, *Technion N. Ganz*, R. Leib, I. Nisky, Disassociation between the effect of stiffness on accuracy of perception and action in teleoperated interaction with virtual elastic objects, *Ben-Gurion University of the Negev A. Milstein*, T. Ganel, S. Berman, I. Nisky, Gripper scaling effect on transparency of telegrasping in robot-assisted surgery, *Ben-Gurion University of the Negev I. Kovler, Y. Weil, J. Salavarieta, L. Joskowicz*, Haptic interface for computer-assisted patient-specific preoperative planning in orthopaedic fracture surgery, *The Hebrew University of Jerusalem Z. Yosibash*, N. Trabesli, M. Salai, p-FEA of femurs: A leap to orthopaedic practice, *Ben-Gurion University of the Negev D. Dinstein*, Robotic-guided thoraco-lumbar spine surgery - a literature review, *Mazor Robotics	Robotics in the Industry Chair: Dr. Ami Appelbaum A. Safrani*, KLA – Tencor Pre Aligner Algorithm, *KLA – Tencor Y. Uziel*, Robotics in Semiconductors Metrology Platforms for sub 1 nanometer accuracy, *Applied Materials N. Karasikov*, Miniature precision stage for optics on LEO satellites, *NanoMotion M. Shoval*, Innovations in the Semiconductors Metrology Industry, *Metro 450 E. de Jong*, DDS in Robotics Applications, *Real Time Innovations N. Naveh*, Let the Part drive the Robot, *Compucraft M. Schwimmer*, 3D simulation for risk assessment of collaborative robots, *Siemens	Ground Robotic Vehicles – Planning and Control Chair: Dr. Yizhar Or M. Goltzman, A. Levi Yamamori, Y. Or*, Stabilization and path tracking control of a vehicle with two trailers in reverse, *Technion U. Ben-Hanan*, A. Weiss, Cooperation between two inverted pendulum two-wheeled robots, *ORT Braude College Y. Ma*, Z. Shiller, Pose estimation of off-road vehicles, *Ariel University H. Tzur*, Z. Shiller, Control of tracked vehicles on a given path, *Ariel University O. Cohen*, D. Appelman, UGV – Unified indoor and outdoor path planning algorithm, *Israel Aerospace Industries E. Kolberg*, A. Elkars, A. Yaakov, G. Siri, Y. Wasserman, R. Golman, E. Shreiber, R. Amsalem, B. Abramov, RoboCup KSL league ball detection using integration of image processing and geometric methods, *Bar-Ilan University E. Kolberg*, Y. Wasserman, E. Shreiber, A. Elkars, A. Yaakov, G. Siri, R. Golman, R. Amsalem, B. Abramov, Design and development of localization algorithms for RoboCup Kid Size league, *Bar-Ilan University	Marine and Aerial Robotics – Navigation and control Chairs: Dr. Svetlana Potyagaylo, Dr. Gera Weiss A. Tal*, I. Klein, R. Katz, Performance analysis of aided INS for AUV navigation, *Technion I. Klein*, R. Diamant, Analysis of aided INS for autonomous underwater vehicles, *University of Haifa O. Wiesel*, Y. Or, Optimization and small-amplitude analysis of Purcell's three-link microswimmer model, *Technion S. Potyagaylo*, C. C. Constantinou, S. G. Loizou, Visual-inertial autonomous navigation of an underwater vehicle for aquaculture inspection operation, *Technion A. Beck*, V. Zaitsev, U. Ben-Hanan, G. Kosa, A jumper-glider bio-robot inspired by the locust, *Tel-Aviv University V. Zaitsev*, O. Gvirsman, U. Ben-Hanan, A. Weiss, A. Ayali, G. Kosa, Miniature jumping robot inspired by locust, *Tel-Aviv University and Ort Braude College H. Efrim*, S. Arogeti, A. Shapiro, G. Weiss, Visual servoing of underactuated micro aerial vehicles in indoor environment, *Ben-Gurion University of the Negev
12:00	Lunch			
13:00	30 years to the first robotics revolution, in honor of the late Prof. Roland Weill, Chair: Prof. Zvi Shiller Prof. Moshe Shoham, Technion; Prof. Tamar Flash, Weizmann Institute of Science; Mr. Rafi Aravot, RoboGroup			
14:00	Young researchers forum, Chair: Prof. Yael Edan Dr. Amir Degani, Technion; Dr. David Zarrouk, Ben-Gurion University of the Negev; Dr. Noa Agmon, Bar-Ilan University			
15:00	Coffee break			
15:30	Session 5A	Session 5B	Session 5C	
	ISIRACAS 2 Chair: Prof. Leo Joskowicz O. Weber*, N. Kiriyati, A. Mayer, Robust registration between pre-surgical MRI and low field interventional brain MRI, *Tel-Aviv University A. Benou*, R. Vexler, A. Friedman, T. Riklin Raviv, Denoising of dynamic contrast-enhanced MR images using deep neural networks, *Ben Gurion University of the Negev R. Vivanti*, L. Joskowicz, J. Sosna, Automatic liver tumor segmentation using global and patient specific convolutional neural networks in follow-up CT studies, *The Hebrew University of Jerusalem M. Freiman*, L. Goshen, Automatic coronary lumen segmentation with partial volume modeling improves hemodynamic significance assessment, *Philips Healthcare	Multi-Robot Systems 1 Chair: Dr. Ami Moshalov G. A. Kaminka*, No robot is an island, no team an archipelago: Plan execution for cooperative multi-robot teams, *Bar-Ilan University G. A. Kaminka*, I. Lupu, N. Agmon, N. Rafaeli, Optimal construction of control graphs in multi-robot systems, *Bar-Ilan University G. Segal*, A. Moshalov, G. Amichai, A. Ayali, Learning to behave like a locust in a swarm, *Tel-Aviv University E. Eisenstadt-Matalon*, A. Moshalov, Modelling interactions among adversary robots as multi-objective games, *Tel-Aviv University	SLAM and Autonomous Navigation Chair: Prof. Vadim Indelman M. Chojnacki*, V. Indelman, Vision-based dynamic target trajectory and ego-motion estimation using incremental light bundle adjustment, *Technion S. Badusa*, G. Kosa, Brain inspired multi modal sensing for robot SLAM, *Tel Aviv University D. Kopitkov*, V. Indelman, Computationally efficient decision making and belief space planning in high-dimensional state spaces, *Technion D. Kopitkov*, X. Yan, J. Dong, C. B. Boots, V. Indelman, iLBA-GP: Incorporating sparse Gaussian process regression within incremental light bundle adjustment, *Technion	
16:20	Session 6A	Session 6C	Session 6D	
	ISIRACAS 3 Chair: Dr. Gabor Kosa A. Abadi*, R. Amit, G. Kosa, Manipulation of micro particles with piezoelectric beams using visual feedback, *Tel-Aviv University A. Abadi*, G. Kosa, Minimally invasive surgical micro robotics for brain parenchyma burrowing, *Tel-Aviv University S. Shenzis, M. Samson, J. Sosna, L. Joskowicz*, 3D segmentation using perceptual computing, *The Hebrew University of Jerusalem	Multi-Robot Systems 2 Chair: Dr. Ami Moshalov R. Botton, E. Kagan*, The Hubbard model for the swarm of mobile robots, *Tel-Aviv University T. Regev*, V. Indelman, Multi-robot decentralized belief space planning in unknown environments via efficient re-evaluation of impacted paths, *Technion A. Yavnai*, Behavior adaptation in cooperative unmanned multi-agent systems, *AI-MA Applied Intelligent Machines	Music and Sound Chair: Prof. Boaz Rafaely S. Bodiroža*, V. Tourbabin, G. Schillaci, J. Sheaffer, V. Hafner, B. Rafaely, On natural robot movements for enriching acoustic information, *Ben-Gurion University of the Negev V. Tourbabin*, B. Rafaely, Optimal design of microphone array for humanoid-robot audition, *Ben-Gurion University of the Negev E. Fisher*, Y. Garcia, J. Mendez, B. Shalom, The robot musician: Almost human or simply a musical robot?, *SCE Y. Garcia*, E. Fisher, J. Mendez, Positioning for a guitar playing robot using a single image, *SCE	
17:10	Closing			