

## Registration form

Name:  
Affiliation:  
Address:  
E-mail:  
Phone:  
Supervisor (for students):

## Registration rates

Regular:  
early (until April 21, 2025) ILS 530  
late (after April 21, 2025) ILS 590  
Student (full-time graduate students only):  
early (until April 21, 2025) ILS 280  
late (after April 21, 2025) ILS 330

## Method of payment

Wire transfer, bank requisites:  
– beneficiary: איגוד ישראלי לבקרה אוטומטית  
– bank: Leumi (10)  
– branch: 705  
– account: 13186472  
Charge to institutional account  
On-site payment (cash or checks only)

Filled registration forms are to be e-mailed to

mira.aran.iaac@gmail.com

with a proof of transfer, if applicable

## טופס הרשמה

שם:  
מקום עבודה:  
כתובת:  
דוא"ל:  
טלפון:  
מנחה (עבור סטודנטים):

## דמי הרשמה

רישום מלא:  
מוקדם (עד 21 באפריל 2025) ₪ 530  
מאוחר (לאחר 21 באפריל 2025) ₪ 590  
רישום סטודנט (סטו' לתארים מתקדמים בזמן מלא בלבד):  
מוקדם (עד 21 באפריל 2025) ₪ 280  
מאוחר (לאחר 21 באפריל 2025) ₪ 330

## אמצעי תשלום

העברה בנקאית, פרטי הבנק:  
– מוטב: איגוד ישראלי לבקרה אוטומטית  
– בנק: לאומי (10)  
– סניף: 705  
– חשבון: 13186472  
לחיוב תקציב מוסדי שמספרו  
תשלום במקום (המחאה או מזומן בלבד)

את הטופס יש לשלוח לכתובת הדוא"ל

mira.aran.iaac@gmail.com

עם אישור העברה, אם רלוונטי



איגוד ישראלי לבקרה אוטומטית

National Member Organization of IFAC and IAIN

Invitation to

# 2025 IAAC Control Conference

## IAAC<sup>3</sup>

to be held in **Daniel Hotel**, Herzliya  
on Monday, April 28, 2025 (Nisan 30, 5785)

Organizers: **Shai Arogeti** (BGU)  
**Harel Kraus** (Elbit Systems LTD)  
**Sissi Lachmi** (Applied Materials)

We are grateful to the organizations below, whose support makes holding IAAC events possible

— Applied Materials Israel Ltd. —  
— Cielo Inertial Solutions Ltd. —  
— Elbit Systems Ltd. —  
— RAFAEL—Advanced Defense Systems Ltd. —

## Greetings

## ברכות

We are pleased to invite you to the IAAC Control Conference, IAAC<sup>3</sup>. This second, and the largest, event in the series will be held at the Daniel Herzliya Hotel and will feature a diverse range of theoretical and applied topics in control and related fields. It offers a valuable opportunity for meaningful dialogue between academy and industry.

The conference program features a wide range of presentations by leading researchers and practitioners, providing a window into the dynamic advancements in this field in Israel. Oral and interactive sessions, with 39 exciting presentations, are devoted to both long-established subjects, such as the analysis of linear and nonlinear systems, robust and adaptive control, system identification and optimization, and more recent developments, such as multi-agent systems and learning. Application areas range from motion control to autonomous system and robotics. In recent years, machine learning has played an increasingly significant role in engineering, a trend that is also shaping the field of control. Conference attendees will have the opportunity to explore this topic in a dedicated session. We also hope that interactive poster session—held twice, in the morning and afternoon—will encourage active participation and lively discussions on the presented topics.

We are looking forward to seeing you in Herzliya,

**Shai Arogeti** (BGU)

IAAC<sup>3</sup> Organizers

**Harel Kraus** (Elbit Systems LTD)

**Sissi Lachmi** (Applied Materials)

## Program-at-a-Glance

## התכנית במבט על

Hall	Poseidon	Aphrodite
08:30–09:00	Gathering (Venus hall)	
09:00–09:15	Welcome, Greetings, Orientation (Poseidon hall)	
09:15–10:15	Linear and Nonlinear Systems	—
10:15–10:30	Coffee / tea break (Venus hall)	
10:30–11:00	Interactive Session (Venus hall)	
11:00–12:40	Robust Control	Machine Learning in Applications
12:40–13:50	Lunch break	
13:50–15:10	Stability, Identification, Optimization	Autonomous Systems and Robotics
15:10–15:25	Coffee / tea break (Venus hall)	
15:25–15:55	Interactive Session (Venus hall)	
15:55–17:15	Multi-Agent and System Interaction	Applied Practices in Control

## Presentations in oral sessions

מושב הרצאות

<b>09:15–10:15</b>	<b>Linear and Nonlinear Systems</b>	14:10–14:30	<i>Quantitative Stability of Autonomous Linear Systems</i> <u>Izchak Lewkowicz</u> (BGU)
9:15–9:35	<i>On the Gain of Entrainment in Contractive Control Systems</i> <u>Michael Margaliot</u> (TAU)	14:30–14:50	<i>Estimation of Multi-Sinusoidal Signal Parameters Using GPEBO Approach</i> <u>Nikolay Nikolaev</u> (Technion), <u>Olga Oskina</u> (ITMO)
9:35–9:55	<i>To Cascade Feedback Loops, or Not?</i> <u>Eduard Eitelberg</u> (NOY Business, SouthAfrica)	14:50–15:10	<i>Tractable Downfall of Basis Pursuit in Structured Sparse Optimization</i> <u>Maya Marmary</u> , <u>Christian Grussler</u> (Technion)
9:55–10:15	<i>Safety in Dynamical System Using Control Barrier Function</i> <u>Qadeer Ahmed</u> (Ohio State U)	<b>13:50–15:10</b>	<b>Autonomous Systems and Robotics</b>
<b>11:00–12:40</b>	<b>Robust Control</b>	13:50–14:10	<i>Probabilistic Rare-Event Verification for Temporal Logic Robotic Tasks</i> <u>Guy Scher</u> (RAFAEL), <u>Sadra Sadraddini</u> (Dexai Robotics), <u>Hadas Kress-Gazit</u> (Cornell U)
11:00–11:20	<i>Gramian-Based Analysis of Parametric Uncertainties</i> <u>Olga Slita</u> (Technion)	14:10–14:30	<i>Analysis and Experiments of the Dissipative Twistcar—Direction Reversal and Asymptotic Approximations</i> <u>Rom Levy</u> , <u>Ari Dantus</u> and <u>Yizhar Or</u> (Technion)
11:20–11:40	<i>Utilization of Noise for the Control of a Class of Non-Linear Systems</i> <u>Adrian-Mihail Stoica</u> (Politehnica U Bucharest), <u>Isaac Yaesh</u> (Elbit Systems)	14:30–14:50	<i>Methods for Line-of-Sight Control of a Spherical Parallel Manipulator</i> <u>Aviram Yanover</u> , <u>Daniel Choukroun</u> (BGU)
11:40–12:00	<i>Extremum Seeking of Static Maps in the Presence of Delays</i> <u>Adam Jbara</u> , <u>Emilia Fridman</u> (TAU)	14:50–15:10	<i>Autonomous Vehicle Digital Twin Based on Fuzzy Unscented Transform</i> <u>Anna Clarke</u> (Mobileye)
12:00–12:20	<i>A Novel Approach for Analysing the Stability of Shear Flows and Boundary Layers via Concepts from the Fields of Robust Control Theory</i> <u>Ofek Frank-Shafir</u> , <u>Igal Gluzman</u> (Technion)	<b>15:55–17:15</b>	<b>Multi-Agent and System Interaction</b>
12:20–12:40	<i>QFT-Based Controller Design Tools: Properties, Capabilities, and Examples</i> <u>Oded Yaniv</u> (BugProof Ltd)	15:55–16:15	<i>A Passivity Analysis for Nonlinear Consensus</i> <u>Fengyu Yue</u> , <u>Daniel Želazo</u> (Technion)
<b>11:00–12:40</b>	<b>Machine Learning in Applications</b>	16:15–16:35	<i>Leader Identification in Semi-Autonomous Consensus Protocols</i> <u>Evyatar Matmon</u> , <u>Daniel Želazo</u> (Technion)
11:00–11:20	<i>Revealing Principles of Autonomous Thermal Soaring in Windy Conditions Using Vulture-Inspired Deep Reinforcement-Learning</i> <u>Yoav Flato</u> , <u>Ro'i Harel</u> , <u>Aviv Tamar</u> , <u>Ran Nathan</u> , <u>Tsevi Beatus</u> (HUJI)	16:35–16:55	<i>On Filtered Consensus Protocols</i> <u>Gal Barkai</u> , <u>Leonid Mirkin</u> , <u>Daniel Želazo</u> (Technion)
11:20–11:40	<i>Cooperative Dynamic Weapon-Target Assignment in a Multiagent Engagement</i> <u>Gleb Merkulov</u> , <u>Eran Iceland</u> , <u>Shay Michaeli</u> , <u>Oren Gal</u> , <u>Ariel Barel</u> , <u>Tal Shima</u> (Technion)	16:55–17:15	<i>Enhancing Human-Robot Synchronization and Interaction through Integrated Control Systems</i> <u>Ben Navon</u> , <u>Anna Clarke</u> , <u>Avi Parush</u> (Technion)
11:40–12:00	<i>Deep Learning Approach to Flapping Wing Flight Control: Leveraging Reinforcement and Imitation Learning from Fruit Flies</i> <u>Sagiv Yaari</u> , <u>Roni Maya</u> , <u>Noam Lerner</u> , <u>Tzevi Beatus</u> (HUJI)	<b>15:55–17:15</b>	<b>Applied Practices in Control</b>
12:00–12:20	<i>New Optimal Control Method for Machine Learning Estimators</i> <u>Elinor Ginzburg-Ganz</u> , <u>Sarah Keren</u> , <u>Yoash Levron</u> (Technion)	15:55–16:15	<i>A DC-Motor Drive Without Integrators in the Current Loops for a Laboratory Two-Mass System Model—An Experimental Study</i> <u>David Yehuda</u> , <u>Per-Olof Gutman</u> (Applied Materials Israel)
12:20–12:40	<i>From Semantic Understanding to Geometric Features: Using Foundation Models for Novel Robotic Tasks</i> <u>Nizan Mashall</u> , <u>Erez Karpas</u> , <u>Miriam Zacksenhouse</u> (Technion)	16:15–16:35	<i>Adaptive Current Control Method by Online Estimation the Motor Coil's Resistance Using EKF and UKF</i> <u>Yaron Zimmerman</u> (Spectrum engineering Ltd)
<b>13:50–15:10</b>	<b>Stability, Identification, Optimization</b>	16:35–16:55	<i>A Parallel Analog and Digital Adaptive Feedforward Active Noise Controller</i> <u>Yoav Vered</u> (ZenAcoustics Solutions)
13:50–14:10	<i>Tracking Error Reduction using Model-Based Recursive Input Shaping</i> <u>Lichtsinder Arkady</u> (RAFAEL)	16:55–17:15	<i>A Simple Stabilization Approach for Rockets in Boost Phase</i> <u>Joseph Z. Ben-Asher</u> (Technion)

## Presentations in interactive sessions

Booth #1	<i>Reduced-Order Envelope Model of Resonant Inverter Feeding a Time-Varying Series RLC Load for Pulsed Power Applications</i> <u>Ohad Akler</u> , Alon Kuperman (BGU)
Booth #2	<i>RAM-Air Parachute Real Time Piloting Simulator</i> <u>Tamar Alperin</u> and Anna Clarke (Technion)
Booth #3	<i>Enhancing Battery Management in AEV</i> <u>Lapid Bar David</u> (Technion)
Booth #4	<i>Shape-Underactuated Systems Modeling and Control</i> <u>Zvi Chapnik</u> , Yizhar Or (Technion), Shai Revzen (U Michigan)
Booth #5	<i>MARVEL: Modern AI Research Vessel for Experimental Learning</i> <u>Samuel Cohen-Salmon</u> , Itzik Klein (Haifa U)

## מושבֵי מצגות אינטראקטיביות

Booth #6	<i>Interpolating Control of Motion Affected by Pre-Sliding Friction</i> <u>Per-Olof Gutman</u> , David Yehuda (Applied Materials Israel)
Booth #7	<i>Semantic Segmentation as the Detector for Search Problems: Modeling and Analysis</i> <u>Barak Pinkovich</u> , Ehud Rivlin, Héctor P. Rotstein (Technion)
Booth #8	<i>Automated Optical Bench Static Balancing Procedure Using the Discrete Linear Programming Algorithm</i> <u>Iliia Rapaport</u> (Elbit Systems)
Booth #9	<i>Coupled Oscillator Models for Multilegged Robots</i> <u>Chen Reichsbouscher</u> (Technion), Shai Revzen (U Michigan) and Yizhar Or (Technion)
Booth #10	<i>Advanced Control Strategies for Modern Systems</i> <u>Amit Weinreb</u> (Systematics)