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Registration rates

Regular:
early (until October 18, 2026) ILS 350
late (after October 18, 2026) ILS 390
Student (full-time graduate students only):
early (until October 18, 2026) ILS 200
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Filled registration forms are to be e-mailed to

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טופס הרשמה

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

דמי הרשמה

רישום מלא:
מוקדם (עד 18 באוקטובר 2026) ₪ 350
מאוחר (לאחר 18 באוקטובר 2026) ₪ 390
רישום סטודנט (סטו' לתארים מתקדמים בזמן מלא בלבד):
מוקדם (עד 18 באוקטובר 2026) ₪ 200
מאוחר (לאחר 18 באוקטובר 2026) ₪ 250

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



National Member Organization of IFAC and IAIN

Invitation to IAAC guest workshop

Network Dynamics in Socio-Technical Systems: From Resilient Control to Incentives and Information Design

to be held in TBD, Tel-Aviv (part of Mind-IL)
on Monday, October 26, 2026 (Heshvan 15, 5787)

Speaker: **Giacomo Como** (Politecnico di Torino & Lund U)

Organizer: **Christian Grußler** (Technion)

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Foreword

פתח דבר

With great pleasure, we welcome you to this workshop on Network Dynamics in Socio-Technical Systems. As modern societies become increasingly interconnected through social, economic, financial, transportation, and energy networks, as well as the Internet of Things, understanding the dynamics that emerge from these complex interactions has become a scientific challenge and practical necessity.

The growing scale and interdependence of contemporary systems have fundamentally transformed the way we need think about control, today. On the one hand, networked systems are rarely governed by a single centralized authority. Instead, they involve multiple decision-makers with diverse objectives, strategic behaviors, and asymmetric information, creating additional layers of complexity for analysis, prediction, and design. On the other hand, while increased connectivity can significantly improve efficiency, coordination, and performance, it can also amplify vulnerabilities, allowing local disruptions to propagate through the network with far-reaching consequences. Addressing these challenges requires new theoretical frameworks that draw on insights from control theory, network science, game theory, economics, and data-driven approaches.

The workshop will be presented by **Giacomo Como** from the Department of Mathematical Sciences, Politecnico di Torino, Italy, and the Automatic Control Department of Lund University, Sweden. Giacomo received his B.Sc., M.S., and Ph.D. degrees in Applied Mathematics from Politecnico di Torino, in 2002, 2004, and 2008, respectively, and have held visiting positions at Yale (2006–07), MIT (2008–11), IMA & IPAM (2016), Institut Henri Poincaré (2017), and Oxford (2026). He is currently a Senior Editor for the *IEEE Transactions on Control of Network Systems* and an Associate Editor for *Automatica* and the *IEEE Transactions on Automatic Control*. Giacomo was the chair of the IEEE-CSS TC on Networks and Communications. He was a semi-plenary speaker at MTNS’16 and is a recipient of the 2015 George S. Axelby Outstanding Paper Award. His research interests are in dynamics, information, and control in network systems, with applications to socio-technical and cyber-physical-human systems.

Christian Grußler (Technion), Workshop Organizer

Program

תכנית

08:15–09:00	Registration
09:00–09:05	Opening
09:05–10:35	<i>Introduction to Network Dynamics and Interventions</i> – basic concepts: centrality and connectivity – examples: opinion dynamics and epidemic systems – volatility reduction in network systems
10:35–11:00	Coffee / tea break
11:00–12:30	<i>Resilient Control of Dynamical Flow Networks</i> – dynamic network flows – distributed routing and flow control – margin of resilience – monotone and non-expansive systems
12:50–14:00	Lunch
14:00–15:30	<i>Designing Incentive and Information Mechanisms</i> – population games and evolutionary dynamics – dynamic pricing in transportation systems – optimality of private information in transportation systems
15:30–15:45	Coffee / tea break
15:45–17:15	<i>Network Games and Interventions</i> – basic concepts and tractable examples: potential, quadratic, and supermodular games – linear threshold dynamics and intervention design in supermodular network games – networked cournot games and electricity markets
17:15–17:30	Discussion & Closing

Description

תיאור

As socio-technical systems have grown more interconnected and optimized, network dynamics have become a central topic of interest in control systems. Fundamental questions include understanding how network structure and local interaction mechanisms determine the emerging global behavior, as well as how to design scalable and robust intervention, control, and information policies that steer these systems toward socially desirable goals.

Key challenges arise from the scale of these systems, which makes the classical centralized control paradigm unsuitable, as well as from their inherent potential fragility: the very same linkages introduced to improve system efficiency may often become channels through which disruptions propagate across the network, causing cascading failures and systemic risk. An additional challenge is that socio-technical systems typically include multiple decision makers with possibly conflicting objectives, strategic behaviors, and heterogeneous information.

In this workshop, we will cover recent trends and results in this research area, illustrating how concepts such as network centrality, connectivity, and resilience can be effectively applied to the analysis and control of socio-technical systems. We will also discuss several applications to social and economic networks, as well as to financial, transportation, and energy systems.