

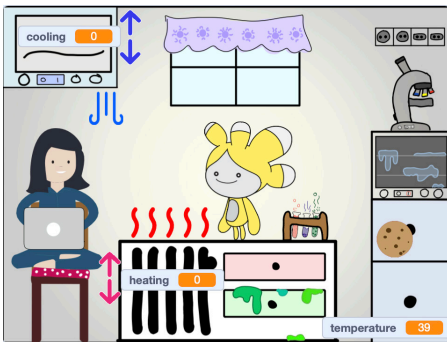
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[www.ifac-control.org](http://www.ifac-control.org)

## IFAC Girls in Control Update

For almost three years now numerous volunteers have contributed to *Girls in Control* workshops. Thanks to many hours of work and dedication, there is now material available in 21 languages: Bangla, Chinese, English, French, German, Hindi, Indonesian, Italian, Japanese, Korean, Malay, Norwegian, Portuguese, Romanian, Spanish, Swedish, Russian, Turkish, Thai, Urdu, and Zulu.

Apart from adding more languages, we also developed material for an advanced workshop where participants dive deeper into the world of control. In the workshop, the girls are challenged with a more difficult problem: an alien who has crashed on earth and needs their help to control its body temperature and blood sugar level in order to stay happy and healthy. Here, more advanced control principles like integral control, event-triggered control and optimal control are touched upon.



Scratch screenshot showing the alien in the lab, as well as the engineer trying to fix the control problem.

During the bulk of the workshops, the girls, again, use Scratch to implement their control solution to save the alien, which requires a suitable temperature control despite the sun heating up the room (a low frequency disturbance, requiring for instance integral actions), deciding when to serve cookies to maintain a desired blood sugar level (event-triggered control), dealing with a loss of information as blood sugar readings are not always available because the alien does not like to be touched too much (leading to an observer design), and reducing the overall costs for heating, air-conditioning and cookies as much as possible (touching upon optimal control).

Of course, as the workshop targets girls attending high school, no prior knowledge or specific control solutions are required or expected. Instead, participants are free to ponder over the challenge and implement any solution that they think might bring the desired effect. The encountered challenges are then used during a short talk to relate them to the specific areas of control and where those are used by experts in science and industry.

A website, reachable under <https://control.academy> or <https://ifac-control.academy>, was then created to summarise and present the material, give some background about the workshop, show contact details, and describe terms and conditions.

The initiative is still welcoming new volunteers from the entire control community to join the initiative. There are many ways to contribute: translate the material into additional languages (especially languages spoken by large parts of the world's population, but also smaller languages are highly appreciated), run workshops, develop new material, or improve the existing material.

Submitted by: Steffi Knorn (DE), Girls in Control

All material proposed for publication in the IFAC Newsletter should be sent to [NEWSLETTER@IFAC-CONTROL.ORG](mailto:NEWSLETTER@IFAC-CONTROL.ORG).

The latest edition of the IFAC Newsletter is available on the IFAC homepage, as well as an online archive dating back to the early 2000s.

### The IFAC Conference App is available!

The App is paid for by IFAC and can be used free of charge by IFAC conference organizers and attendees.

How to download:  
App Store [apple.co/3mpaER7](https://apple.co/3mpaER7)  
Google Play [bit.ly/3lazFjx](https://bit.ly/3lazFjx)  
Web version [ifac.floq.live](http://ifac.floq.live)

You can also search for 'IFAC' in the Apple App Store or in the Google Play Store.

## No.2

April 2023

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### The IFAC Journals

#### Automatica

[journals.elsevier.com/automatica](http://journals.elsevier.com/automatica)

#### Control Engineering Practice

[journals.elsevier.com/control-engineering-practice](http://journals.elsevier.com/control-engineering-practice)

#### Engineering Applications of Artificial Intelligence

[journals.elsevier.com/engineering-applications-of-artificial-intelligence](http://journals.elsevier.com/engineering-applications-of-artificial-intelligence)

#### Journal of Process Control

[journals.elsevier.com/journal-of-process-control](http://journals.elsevier.com/journal-of-process-control)

#### Annual Reviews in Control

[journals.elsevier.com/annual-reviews-in-control](http://journals.elsevier.com/annual-reviews-in-control)

#### Journal on Mechatronics

[journals.elsevier.com/mechatronics](http://journals.elsevier.com/mechatronics)

#### Nonlinear Analysis: Hybrid Systems

[journals.elsevier.com/nonlinear-analysis-hybrid-systems](http://journals.elsevier.com/nonlinear-analysis-hybrid-systems)

#### IFAC Journal of Systems & Control

[journals.elsevier.com/ifac-journal-of-systems-and-control](http://journals.elsevier.com/ifac-journal-of-systems-and-control)

#### IFAC-PapersOnLine

[journals.elsevier.com/ifac-papersonline](http://journals.elsevier.com/ifac-papersonline)

## IFAC World Congress 2023 Update

The 22<sup>nd</sup> IFAC World Congress will be held from 9-14 July 2023 in Yokohama, JP. As the dates are approaching, the organizing committee is doing its best to prepare for the congress. We are very pleased to be able to host a face-to-face congress after the difficult years under COVID-19 influences.

All submission deadlines have now passed. We have received many active paper submissions and proposals from colleagues around the world. We express our deepest gratitude to all who contributed to the congress, including the reviewers for their help in ensuring a high-standard peer review process.



This memorable week will be full of exciting events: technical programs, receptions and ceremonies, technical and social tours, exhibitions, competitions, workshops, tutorials, public lectures, and much more. It is worth mentioning that many events, such as forums and competitions, are organized through the energetic activities of the IFAC2023 Industry Group (in cooperation with IFAC Industry Committee), which consists of members from both academia and industry including more than 60 companies. Please take a look at the congress program available on our website.

[ifac2023.org/program/](https://ifac2023.org/program/)

Below are the event highlights and important announcements (as of March 2023).

### Plenary and Semi-plenary Talks:

We are very honored to welcome the following outstanding plenary speakers.

Plenary I: Anuradha Annaswamy (Monday, 10 July) *"Resilience and Distributed Decision-making in a Renewable-rich Power Grid"*

Plenary II: Kazuyuki Aihara (Tuesday, 11 July) *"Dynamical Network Biomarkers: Data Analysis on Early Warning Signals in Complex Systems and its Application to Early Precision Medicine"*

Plenary III: Erik Hollnagel (Wednesday, 12 July) *"Is Resilience A Quality Or A Quantity?"*

Plenary IV: Tamer Basar (Thursday, 13 July) *"Multi-Agent Dynamical Systems: Misaligned Objectives, Equilibria, Learning, and Asymptotics"*

Plenary V: Sandra Hirche (Friday, 14 July) *"Trustworthy Data-driven Control"*

In addition, eight fascinating semi-plenary talks are planned to be given throughout the week. Please check the webpage for the latest list of talks.

[ifac2023.org/program/plenary-talks/](https://ifac2023.org/program/plenary-talks/)

### Competitions

Five exciting competitions will be held associated with the world congress.

- Mathworks Minidrone Competition (from 10 to 11 July)
- World Drone Competition (from 11 to 13 July)
- Aerospace Industrial Benchmark for Fault Tolerant control (presented at a special invited session in the World Congress)
- WRS Future Convenience Store Challenge (from 9 to 14 July, including setup and practice day)
- ECCV Control Benchmark for Sustainable Transport (presented at a special invited session in the World Congress)

### Panels and Forums

Special panel discussions and forums will be held throughout the week. IFAC supports the newly published report *"Control for Societal-Scale Challenges Roadmap 2030"* by the IEEE Control Systems Society and will host a panel session. Three industry-related panels will be organized by the IFAC Industry Committee and eight by the IFAC 2023 Industry Group. Other forums and activities include those on control education, diversity and inclusion, research funding.

### Workshops and Tutorials

15 workshops and four tutorials will be held on 8 and 9 July, prior to the main congress schedule. The list of tutorials is as follows:

- Estimation of Noise Parameters in State Space Models (8 July)
- Mechanics and robotics for manipulation: design and control (9 July)
- Control Systems in Synthetic Biology (9 July)
- Ecologically-Inspired Multi-Robot Systems (9 July)

For the list of workshops please see:

[ifac2023.org/program/workshop-tutorial/](https://ifac2023.org/program/workshop-tutorial/)

### Registration:

For the details about the registration categories and their benefits, please refer to the website:

[ifac2023.org/registration](https://ifac2023.org/registration)

IFAC 2023 is best structured for on-site attendance to enjoy the full benefits of the events such as workshops, tutorials, competitions, forums, poster sessions, and a variety of social activities. Considering the worldwide Covid-19 situation, on-line attendance is also possible, but please note that the benefits are unavoidably limited compared to on-site attendance.

### From the IFAC President

Dear IFAC Friends and Colleagues,

IFAC's primary objective is to serve all those concerned with the theory and application of automatic control and systems engineering, wherever situated. To provide an improved framework for collaboration between colleagues in the field, IFAC launched a "database" taskforce in 2020, led by Derik Le Roux, whose conclusions lead IFAC to dedicate an appropriate budget for establishing a new Web Portal able to provide improved services to IFAC affiliates. Build and maintained by the professional company *Totally* in the UK, this portal is now progressively deployed.

The IFAC Affiliates Portal is accessible at [affiliates.ifac-control.org](https://affiliates.ifac-control.org). It allows any professor, researcher, engineer, student, in any country or region, to register freely and at no cost, to the IFAC network of affiliates. The provided affiliation data will help IFAC to have a better knowledge of the activities in the field (thanks to the information about scientific fields of interest) and about how well IFAC is doing in terms of international coverage, diversity and inclusion. The affiliates shall keep full control of their data with the possibility to update at any time the data themselves and with the three privacy options: fully private (accessible only to the IFAC Secretariat for statistical purpose), IFAC public (shared only with registered IFAC affiliates), Web public (for open dissemination).

I am convinced that the Affiliates Portal will provide very soon valuable services such as contacting colleagues throughout the world depending on their fields of interest, being acknowledge for his/her involvement in IFAC activities, having access to reduced registration fees at IFAC conferences, be considered for IFAC awards, and more to come. The portal is planned to be expanded with new services in the future. All of you are most welcome to provide feedback to [secretariat@ifac-control.org](mailto:secretariat@ifac-control.org) about its usage, the bugs, the improvements to be made but also about new features that you would like to be included.

My thanks go to Frank Allgöwer who strongly supported in 2019 the proposal by the Policy Committee (Lucy Pao, chair) to launch a Database Task Force (Derik le Roux, chair) that came up with this project and designed the functionalities, and to the Secretariat (Dimitri Peaucelle, IFAC Vice President for Operations) who supervised the realization. The new Affiliates Portal is now off the ground and in the hands of the IFAC community. More than a database, it will I hope become instrumental for many more contacts between people in the field of Automatic Control.

Best regards,

Hajime Asama  
IFAC President 2020- 2023

### Travel Information

The congress venue, Pacifico Yokohama, is easily accessible from major international airports, Narita (NRT) and Haneda (HND), via express train and limousine bus. You will also find many suitable accommodations in the vicinity of the venue.

[ifac2023.org/travel-tours/transportation-accommodation/](http://ifac2023.org/travel-tours/transportation-accommodation/)

In relation to COVID-19, the conditions for entry into Japan have now been significantly relaxed from before, however, please keep yourself updated on the latest quarantine measures and travel regulations.

[ifac2023.org/travel-tours/visa-and-documents/](http://ifac2023.org/travel-tours/visa-and-documents/)

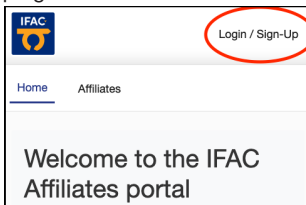
The IFAC 2023 Organizing Committee looks forward to welcoming you all to Yokohama!

Submitted by Masato Ishikawa and Noriaki Ando (JP), IFAC 2023 Publicity Chairs

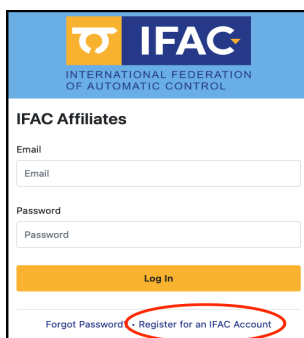
## New IFAC Affiliate Portal: Now Available

**Instructions for affiliates.ifac-control.org**  
For your first connection here are the steps to follow:

- Go to: [affiliates.ifac-control.org/](http://affiliates.ifac-control.org/)
- Press the "Login / Sign-Up" button at the top right corner



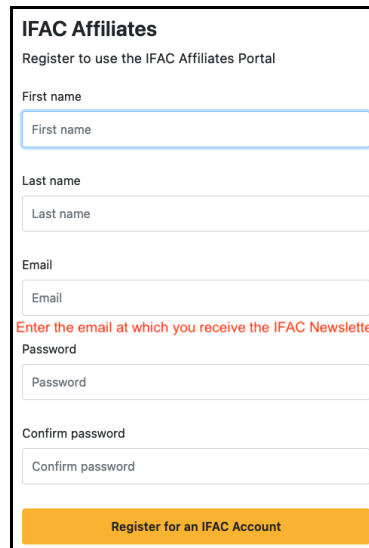
- Press "Register for an IFAC Account"



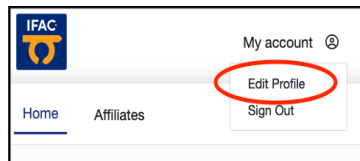
The system will automatically make the link to your existing IFAC data. You will receive an email with a link that will activate and access your account in the Portal.

- Enter your first name, last/family name, email (the one we are using currently to contact you/where you receive this Newsletter) and a password

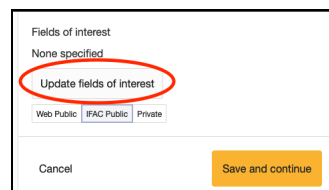
### Important: If you are already an IFAC Affiliate please enter the email address at which you receive the IFAC Newsletter!



- You will then receive an email with a link that will activate your account in the Portal
- Go to "My Account->Edit Profile" (top right corner)

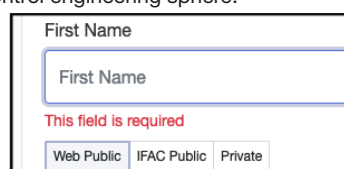


Please review your personal information and use the "Update fields of interest" button to specify your keywords and add any new information you wish to share with IFAC. Note that your profile needs a manual validation by the IFAC Secretariat. This can take a couple of days but is usually faster.



### Important: For each data item you have 3 sharing options (privacy levels)

- \* Web public: the information is available to anyone who visits the portal, even non IFAC-affiliated visitors. It can be useful to show you belong to the IFAC community and to show your expertise outside of the control engineering sphere.

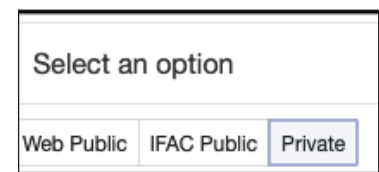


- \* IFAC restricted: The information is available to IFAC Affiliates only (once they are logged in to the portal). It can be useful to connect with colleagues in your field/s of

interest, to be contacted to join Technical Committees, or other IFAC Activities.



- \* Private: The information shall not be disclosed to anyone and only used by the IFAC Secretariat for internal IFAC purpose. This can be useful for personal reasons, information that you wish to keep secret for a time and reveal afterwards, etc. An example might be the name and contact info for a personal assistant.



- For example if
- your name is Web public,
- your fields of interest are IFAC public
- and your phone number is private

- This means that
- anyone is able to know that you belong to the IFAC community
- only IFAC affiliates can know the topics you are interested in
- only the IFAC Secretariat can contact you by telephone (based on the IFAC database).

Your name will not appear in the list of IFAC affiliates as long as it is set to 'Private' which is the by default option. As soon as many of you make your profiles visible you will be able to search for colleagues. Filters are pre-defined to help you to find specialists based on the data they provided.

The top banner saying "Some information that may be useful for the IFAC Secretariat is missing" will disappear once you have entered data in all three folders.

- \* General details - all non-optional fields are requested
- \* Contact details - at least one phone number would be useful for the IFAC Secretariat (can be kept 'Private')
- \* Addresses - At least one address (press the 'Add Address' button) would be useful for the Secretariat (can be kept 'Private')

It should not take too much time of your time to log in and use the portal and, if it does, please do report all the difficulties you encountered to the IFAC Secretariat at [secretariat@ifac-control.org](mailto:secretariat@ifac-control.org).

## IFAC is on social media!

### Facebook

[facebook.com/groups/632582025190533](https://facebook.com/groups/632582025190533)

### LinkedIn

[linkedin.com/groups/13400016/](https://linkedin.com/groups/13400016/)

### Twitter

[twitter.com/IFAC\\_Control](https://twitter.com/IFAC_Control)

### YouTube

[youtube.com/channel/UCLcWogbVNxo9rVSS9NKQDeA](https://youtube.com/channel/UCLcWogbVNxo9rVSS9NKQDeA)

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We encourage electronic distribution of this Newsletter, as well as reprinting in national and local automatic control periodicals.

Acknowledgement to IFAC would be appreciated.

## Introducing the 2020-2023 IFAC Fellows

This is the fourth in a series in which Newsletter readers can learn more about the 25 new 2020-2023 IFAC Fellows.

### Maurice Heemels



Maurice Heemels received M.Sc. (mathematics) and Ph.D. (control theory) degrees (summa cum laude) from the Eindhoven University of Technology (TU/e, NL) in 1995 and 1999, respectively. From 2000 to 2004, he was with the Electrical Engineering Department, TU/e, as an assistant professor, and from 2004 to 2006 with the Embedded Systems Institute (ESI) as a research fellow. Since 2006, he has been with the Department of Mechanical Engineering, TU/e, where he is currently a Full Professor and Vice-Dean. Heemels held visiting professor positions at Swiss Federal Institute of Technology (ETH, CH) in 2001), University of California at Santa Barbara (CA, US) in 2008 and University of Lorraine (FR) in 2020.

His current research includes hybrid and cyber-physical systems, networked and event-triggered control systems and model predictive control. Dr. Heemels served/s on the editorial boards of *Automatica*, *Nonlinear Analysis: Hybrid Systems* (Editor-in-chief since January 2023), *Annual Reviews in Control*, and *IEEE Transactions on Automatic Control*.

Heemels was a recipient of a personal VICI grant awarded by NWO (Dutch Research Council) and recently obtained an ERC Advanced Grant. He is a Fellow of the IEEE and IFAC. He is currently chair of the IFAC Technical Committee on Networked Systems (2017-2023). He was the recipient of the 2019 IEEE L-CSS Outstanding Paper Award and was elected for the IEEE-CSS Board of Governors (2021-2023).

### Antonella Ferrara



Antonella Ferrara received the M.Sc. degree (Cum Laude and printing honors) in electronic engineering and the Ph.D. degree in computer science and electronics from the University of Genova, Italy, in 1987 and 1992, respectively. Since 2005 she has been Full Professor of automatic control at the University of Pavia, Italy, where she is the Head of the Intelligent Robotics Laboratory, as well as the President of the Research Standing Committee of the Department of Electrical, Computer and Biomedical Engineering.

Her research activities are mainly in the area of nonlinear control, with a special emphasis on sliding mode control, with application to road traffic, automotive systems, robotics and power systems. She is author and co-author of more than 450 publications including more than 150 journal papers, two monographs and one edited book.

Ferrara was Visiting Professor at Graz University of Technology, visiting scholar at the University of Minnesota, as well as Invited Lecturer at Harvard University, University of California at Los Angeles, University of Stuttgart, Technical University of Delft, INRIA Grenoble, King Abdullah University of Science and Technology (KAUST), Hanyang University in Seoul, Universidade Federal do Rio de Janeiro, Dalian Maritime University, National Institute of Technology Silchar, IIIT Kharagpur, Murdoch University, École Polytechnique Fédérale de Lausanne, Nanjing University of Science and Technology, Imperial College, University of Cambridge, and University of Exeter, among others.

She was/is Principal Investigator in several European, international and national projects and was one of the eleven experts appointed by the Italian Ministry of Research to write the National Research Plan for the period 2021-2027 for the research area "Sustainable Mobility".

She was Associate Editor of the *IEEE Transactions on Control Systems*, of the *IEEE Transactions on Automatic Control*, and of the *IEEE Control Systems Magazine*. She was Subject Editor of the *International Journal of Robust and Nonlinear Control*. She was Associate Edi-

tor and Senior Editor of the *IEEE Transactions on Intelligent Vehicles*. Since 2018 she has been Associated Editor of *Automatica*, and, since January 2022, Senior Editor of *IEEE Open Journal of Intelligent Transportation Systems*.

Ferrara served as a member of the EUCA Council and, since ECC 2019, she has been the EUCA Conference Editorial Board Chair. She will serve as one of the IPC Chairs (together with Maurice Heemels) for the 24th IFAC World Congress to be held in Amsterdam, The Netherlands, in 2029. She was "appointed member" of the Board of Governors of the IEEE Control Systems Society in 2012. She was Chair of the Women in Control Committee of the IEEE Control Systems Society (July 2013-December 2016) and, at present, she is a member of the Advisory Board of that committee.

Ferrara was "elected member" of the Board of Governors of the IEEE Control Systems Society for the triennium 2016-2018. She was member of the IEEE Control System Society Outreach Task Force (2017-2019) and was the Chair of the Task Force in 2020. She is incoming member of the ExCom of the IEEE Control System Society with the role of Director of Operations (2023-2026 term). In 2015-2019, she was a Member of the European Control Association (EUCA) Council.

Ferrara is a member of the IFAC Technical Committee (TC) on Nonlinear Control Systems, IFAC TC on Transportation Systems, IFAC TC on Intelligent Autonomous Vehicles, IEEE TC on Automotive Control, IEEE TC on Smart Cities, and IEEE TC on Variable Structure Systems. Among several awards, she was a co-recipient of the 2020 IEEE Transactions on Control Systems Technology Outstanding Paper Award. She is both an IEEE Fellow and an IFAC Fellow.

### Malcolm C. Smith



Malcolm C. Smith received the B.A. (M.A.) degree in mathematics, the M.Phil. degree in control engineering and operational research, and the Ph.D. degree in control engineering, from the University of Cambridge, Cambridge, U.K., in 1978, 1979, and 1982, respectively. He was subsequently a Research Fellow at the German Aerospace Centre, Oberpfaffenhofen, Germany, a Visiting Assistant Professor and Research Fellow with the Department of Electrical Engineering at McGill University, Montreal, Canada, and an Assistant Professor with the Department of Electrical Engineering, Ohio State University, Columbus.

In 1990, Smith joined the Engineering Department, University of Cambridge, where he is

currently a Professor and Head of the Control Group. He is a Fellow of Gonville and Caius College. His research interests are in the areas of robust control, nonlinear systems, electrical and mechanical networks, and automotive applications.

Smith received the 1992 and 1999 George Axelby Best Paper Awards, in the IEEE Transactions on Automatic Control, both times for joint work with T.T. Georgiou. He is a winner of the 2020 IEEE Control Systems Technology Award (with W. Houtl and P. Brezas) and the 2009 Sir Harold Hartley Medal of the Institute of Measurement and Control for “outstanding contribution to the technology of measurement and control”. He is a Fellow of the IEEE and a Fellow of the Royal Academy of Engineering.

### Marija Ilic



Marija Ilic is a Professor Emerita at Carnegie Mellon University (CMU). She currently has a joint appointment of an Adjunct Professor in EECS Department and Senior Research Scientist at the MIT Laboratory for Information and Decision Systems (LIDS) at the Massachusetts Institute of Technology (MIT). She is an IEEE Life Fellow and an elected member of the US National Academy of Engineering, and the Academia Europaea.

She was the first recipient of the NSF Presidential Young Investigator Award for Power Systems in the US. She has co-authored several books on the subject of large-scale electric power systems, and has co-organized an annual multidisciplinary Electricity Industry conference series at Carnegie Mellon (<http://www.ece.cmu.edu/~electricconf>) with participants from academia, government, and industry.

Ilic was the founder and co-director of the Electric Energy Systems Group (EESG) at Carnegie Mellon University (<http://www.eesg.ece.cmu.edu>). Currently she is building EESG@MIT <https://eesg.mit.edu/>, in the same spirit as EESG@CMU. Most recently she has offered an open EdX course at MIT entitled “Principles of Modeling, Simulations and Control in Electric Energy Systems”. She is founder and chief scientist at SmartGridz (DBA New Electricity Transmission Solutions (NETSS), Inc.) <https://smartgridz.com/>.

The IFAC Story E-book  
is available!  
ISBN 978-3-902823-73-1

<https://www.ifac-control.org/about/the-ifac-story>

### Bart De Schutter



Bart De Schutter is full professor and head of department at the Delft Center for Systems and Control of TU Delft. He received the PhD degree in Applied Sciences (summa cum laude with congratulations of the examination jury) in 1996 at K.U.Leuven, Belgium. After obtaining his PhD degree, he was a postdoctoral researcher at K.U.Leuven, and in 1998 he transferred to the Control Systems Engineering group of TU Delft.

De Schutter is an IEEE Fellow. He has been chair and vice-chair of the IFAC Technical Committee on Transportation Systems. He is one of the chairs of the NOC of the IFAC World Congress 2029 in Amsterdam.

Since 2020 De Schutter is a member of the IFAC Conference Board. He has been awarded an NWO VIDI grant in 2003 and an ERC Advanced Grant in 2021. He has been coordinator of the European projects HD-MPC, SeaClear, and SeaClear 2.0. Currently, he is senior editor of the *IEEE Transactions on Intelligent Transportation Systems* and associate editor of *IEEE Transactions on Automatic Control*.

His research interests include multi-level and multi-agent control, learning-based control, control of hybrid systems with applications in intelligent transportation systems and smart energy systems.

### Giovanni Cherubini



Giovanni Cherubini received the Laurea degree “summa cum laude” from the University of Padova, Italy, and the M.S. and Ph.D. degrees from the University of California, San Diego, USA, all in electrical engineering. He joined IBM Research – Zurich, Switzerland, in 1987. His research interests include advanced control methods for data-storage systems and non-von Neumann computing for AI applications.

Cherubini serves as Senior Editor of the *IEEE Control Systems Letters*, and was Guest Editor of the special issue of the *Letters on “Learning and Control”* in 2020. He received the 2021 IEEE Control Systems Society Transition to Practice Award for inventing and developing

advanced control technologies for magnetic tape data storage products, and an IBM Corporate Award for “Tape Technology Leadership” in 2013.

He was a co-recipient of the 2020 IFAC Mechatronics Paper Prize Award, the 2014 IFAC Industrial Achievement Award for the application of advanced control technologies in the nano-domain to magnetic tape data storage, the 2009 IEEE Control Systems Technology Award for contributions to nanopositioning for MEMS-based storage and other applications, the 2009 IEEE Transactions on Control Systems Technology Outstanding Paper Award, and the 2003 IEEE Communications Society Leonard G. Abraham Prize Paper Award.

Cherubini is a Fellow of the IEEE and an IBM Master Inventor. He published more than 130 refereed articles and holds over 240 patents in the areas of signal processing, communication systems, automatic control, data storage, and AI.

### Domitilla Del Vecchio



Domitilla Del Vecchio received the Ph. D. degree in Control and Dynamical Systems from the California Institute of Technology, Pasadena, and the Laurea degree in Electrical Engineering (Automation) from the University of Rome at Tor Vergata in 2005 and 1999, respectively. From 2006 to 2010, she was an Assistant Professor in the Department of Electrical Engineering and Computer Science and in the Center for Computational Medicine and Bioinformatics at the University of Michigan, Ann Arbor. In 2010, she joined the Department of Mechanical Engineering at the Massachusetts Institute of Technology (MIT), where she is currently Professor and member of the Synthetic Biology Center.

She is a IEEE Fellow and a recipient of the Newton Award for Transformative Ideas during the COVID-19 Pandemic (2020), the 2016 Bose Research Award (MIT), the Donald P. Eckman Award from the American Automatic Control Council (2010), the NSF Career Award (2007), the American Control Conference Best Student Paper Award (2004), and the Bank of Italy Fellowship (2000).

Del Vecchio’s research focuses on developing techniques to make synthetic genetic circuits robust to context and on applying these to biosensing and cell fate control for regenerative medicine applications.

Allen Robert Tannenbaum



Allen Robert Tannenbaum is an American/Israeli applied mathematician and presently Distinguished Professor of Computer Science and Applied Mathematics & Statistics at the State University of New York at Stony Brook. He is also an Affiliate Attending Computer Scientist in Medical Physics at Memorial Sloan Kettering Cancer Center in New York City. He has held a number of other positions in the United States, Israel, and Canada. He received his Ph.D. with thesis advisor Heisuke Hironaka at Harvard University in 1976.

Tannenbaum has done research in numerous areas including robust control, computer vision, and biomedical imaging, having almost 600 publications. He pioneered the field of robust control with the solution of the gain margin and phase margin problems using techniques from Nevanlinna–Pick interpolation theory, which was the first H-infinity type control problem solved. Tannenbaum used techniques from elliptic curves to show that the reachability does not imply pole assignability for systems defined over polynomial rings in two or more variables over an arbitrary field. He pioneered the use of partial differential equations in computer vision and biomedical imaging co-inventing with Guillermo Sapiro an affine-invariant heat equation for image enhancement.

Tannenbaum further formulated a new approach to optimal mass transport (Monge-Kantorovich) theory in joint work with Steven Haker and Sigurd Angenent. In recent work, he has developed techniques using graph curvature ideas for analyzing the robustness of complex networks.

His work has won several awards including IEEE Fellow, O. Hugo Schuck Award of the American Automatic Control Council (shared with S. Dambreville and Y. Rathi), and the George Taylor Award for Distinguished Research from the University of Minnesota. He has given numerous plenary talks at major conferences including the Society for Industrial and Applied Mathematics (SIAM) Conference on Control, IEEE Conference on Decision and Control of the IEEE Control Systems Society, and the International Symposium on the Mathematical Theory of Networks and Systems (MTNS). He is also well known as one of the authors of the textbook *Feedback Control Theory* (with John Doyle and Bruce Francis), which is currently a standard introduction to robust control at the graduate level.

Kumpati S. Narendra



Kumpati S. Narendra is currently the Harold W. Cheel Professor (Emeritus) of Electrical Engineering and the Director of the Center for Systems Science at Yale University. He received his Ph.D. degree from Harvard University and was an Assistant Professor there until 1965, when he came to Yale. He was made Professor in 1968. He was the Chairman of the Electrical Engineering Department from 1984 to 1987 and Director of the Neuroengineering and Neuroscience Center during 1995-96. He received an Honorary Doctorate from his alma mater, the University of Madras (now Anna University) in 1995, and the University of Ireland, Maynooth in 2007.

Narendra is the author of over 250 papers and three books and the editor of four books in the fields of Adaptive Control, Learning Theory, Stability Theory and Neural Networks. He has delivered over 150 lectures in 45 countries and has mentored 50 PhD students and 45 postdoctoral and visiting fellows in the past 40 years. During the same period he was a consultant for over 20 industrial research laboratories, including General Motors, AT&T, Sikorsky Aircraft and Sandia National Laboratories. He is a Fellow of IEEE (1979), IEE (1981), and AAS (1987).

Narendra was the recipient of the Franklin V. Taylor Memorial Award of the Systems, Man, and Cybernetics Society of the IEEE (1972), the George Axelby Best Paper Award of the Institute of Electrical and Electronics Engineering (IEEE) Control Systems Society (1987), the John R. Ragazzini Education Award (1990), the IEEE Neural Networks Society Best Paper Award (1991), the Bode Prize (1995), the Walton Fellowship in Ireland (2007) and the Neural Networks Pioneer Award (2008).

In 2003, he received the Richard E. Bellman Control Heritage Award, the highest award of the American Automatic Control Council (AACC) for "*Pioneering Contributions to Stability Theory, and Adaptive and Learning Theory*".

Editor's Note: This concludes the series of 2020-2023 IFAC Fellow Bios. The full list of fellows, including past winners, can be found at:

<https://www.ifac-control.org/awards/ifac-fellows>

## 10<sup>th</sup> IFAC Conference on Manufacturing, Management & Control (MIM 2022) 22-24 June 2022

The 10<sup>th</sup> IFAC triennial Conference MIM (Manufacturing Modelling, Management and Control) took place from 22-24 June 2022 in Nantes, FR ([hub.imt-atlantique.fr/mim2022](http://hub.imt-atlantique.fr/mim2022)) with as an objective to discuss new challenges for management and control in the Industrie 4.0 era. IFAC MIM'2022 was focused on the most innovative methods proposed in the last few years in the context of applications of artificial intelligence, taking into account the role of new technologies (e.g., blockchains, IoT, edge computing) and emerging scientific domains (e.g., big data, analytics, risk management) in the production management and control.

Several outstanding panels were organized at MIM 2022 including the panel of editors: Prof. Alexandre Dolgui (IJPR); Prof. David Simchi-Levi (Management Science); Prof. Michael Pinedo (Journal of Scheduling); Prof. Tang Ou (IJPE); Prof. Alain Bernard (IJPLM). The edition 2022 of MIM was specific because of the 60<sup>th</sup> anniversary of the *International Journal of Production Research* (Taylor & Francis). Prof. Alexandre Dolgui presented the history and current policy of the journal.

Exceptional Keynote talks were presented by (in the order of presentation):

David Simchi-Levi, Professor of Engineering Systems & Director of the Data Science Lab MIT, USA: *From Data to Science and Back*.

Volodymyr Babich, Professor of Operations and Information Management at the McDonough School of Business, Georgetown University, USA: *Playing with DISASTER: a Behavioral Simulation Platform of Supply Shortages, Competition for Supplier Capacity, Blockchain-enabled Strategic Information Sharing, and Markets for Capacity-Token Trading*.

Dimitris Mourtzis, Professor of Manufacturing Systems and Director of the Laboratory of Manufacturing Systems and Automation, University of Patras, Greece: *Artificial Intelligence for Production Management and Control towards Mass Personalization in Industry 4.0*.

Michael Pinedo, Professor of Operations Management in the Department of Information, Operations and Management Sciences Stern School of Business, New York University, USA: *Scheduling Applications in Industry – Steel-making and Micro-electronics*.

Gisela Lanza, Professor. DR.-ING. Director of Production Systems at the Karlsruhe Institute of Technology (KIT), Germany: *Enabling changeable production by utilizing digital twin*.

Alain Bensoussan, Professor of Risk and Decision Analysis Lars Magnus Ericsson Chair,

Hong Kong, CN: *Major challenges of Risk Management in industry.*

MIM 2022 in numbers:

- 806 submissions from more than 70 countries (including Track and Session proposals);
- 78 Track and Session proposals;
- 125 sessions in the final program;
- 545 accepted papers;
- 1908 authors from 68 countries in the program;
- 837 reviewers;
- 767 registered participants from 59 countries.

Submitted by: Alexandre Dolgui (FR), General Chair, Dmitry Ivanov (DE), IPC Chair, and David Lemoine (FR), NOC Chair

## IFAC Executive Officers' Meeting 20-22 April 2023 Vienna, AT

The IFAC Executive Officers met in Vienna, AT from 20-22 April 2023 for their annual „Spring“ meeting. Among other factors this is always an opportunity to refresh IFAC's relationship with Austria, the host country of the IFAC Secretariat since 1978, and its control community. IFAC gratefully receives a yearly association support subsidy from the Austrian government through its BMK ministry, which is notated in the imprint of each issue of this Newsletter. The tradition of the annual in-person meeting of Executive Officers in Austria was started during the IFAC presidency of Yoshikazu Sawaragi (1978-1981) and was only paused shortly due to the pandemic. Despite the improvements in international communication over the years it has been found to be beneficial and fulfilling to gather the officers together in-person.

The Executive Officers who were in attendance in Vienna were IFAC President Hajime Asama (JP) with his IFAC Affairs assistant Angela Faragasso (JP), IFAC President-Elect Dong-II „Dan“ Cho (KR), IFAC VP, Operations and IFAC Secretary Dimitri Peaucelle (FR), IFAC VP, Finances John Lygeros (CH), IFAC VP, Conferences Maria Prandini (IT), IFAC VP, Publications Sarah Spurgeon (UK), and IFAC Immediate Past-President Frank Allgöwer (DE). Carlos Eduardo Pereira (BR, IFAC VP, Technical Activities, attended remotely. In addition to all but one of the current IFAC Executive Officers, two upcoming member of the 2023-2026 team were also in attendance. Richard Braatz (US)

will serve as Vice-President, Conferences, and Silvia Mastellone (CH) will serve as Vice-President, Finances.

Per tradition a technical lecture was held, which was open to the in-person public in Austria and streamed via Zoom worldwide. This year's lecture was „Addressing complexity in contemporary control applications via data-driven and distributed optimization“, given by IFAC Vice-President for Conferences Prof. Maria Prandini (IT), and took place at the TU Wien/Vienna Technical University. The lecture was well-attended in-person by members of the Austrian control community, as well as by viewers worldwide via streaming. It is planned that the lecture recording will be made available on the IFAC YouTube channel.



IFAC President-Elect 23-26/VP, Conferences Maria Prandini (IT) presented the annual technical lecture at the TU Wien in Vienna, AT on 20 April 2023

The President's Dinner was held in Vienna's central First District, located near sites such as the Pestsäule and the Peterkirche. It was an honor to have Secretary Rumi Onishi from the Japanese Embassy in Austria attend on behalf of the ambassador in acknowledgement of the IFAC presidency of Hajime Asama (JP), as well as the upcoming IFAC World Congress in Yokohama.

In addition to the current and upcoming IFAC Executive Officers two IFAC Advisors, IFAC President 2002-2005 Vladimir Kucera (CZ) and IFAC President 2008-2011 Alberto Isidori (IT) made the trip to Vienna to attend. The dinner was also attended by David Berl, mayor of Laxenburg (the town where the Secretariat is located), IFIP Secretary Anatolii Marushchak (the IFIP Secretariat is also located in Laxenburg, just around the corner from the IFAC Secretariat), as well as other members and friends of IFAC, both from Austria and abroad. IFAC is proud of its connections with Austria and

the town of Laxenburg, where IFAC has had its Secretariat since 1978, upon invitation of the Austrian government.



### IFAC Executive Officers' Meeting 2022

Left to right: Silvia Mastellone (CH), Angela Faragasso (JP), Katharina Willhofer (IFAC Secretariat, AT), Frank Allgöwer (DE), Hajime Asama (JP), Dong-II „Dan“ Cho (KR), Maria Prandini (IT), Dimitri Peaucelle (FR), Harald Albrecht (IFAC Secretariat, AT), Sarah Spurgeon (UK), Elske Haberl (IFAC Secretariat, AT).

Not pictured: John Lygeros (CH), Carlos Eduardo Pereira (BR), Richard Braatz (US)

The meetings, which were held at the TU Wien, began on Friday morning and went well into Saturday. IFAC extends its thanks to CC4 chair and friend of IFAC Andreas Kugi (AT), who hosted the meetings and the technical lecture at the TU Wien. Due to the earlier Covid-19 pandemic this was the first time that the current IFAC President and President-Elect were able to attend this annual meeting in-person. With the upcoming IFAC Council and Related Meetings, as well as the General Assembly (all which are scheduled to take place in July 2023 at the IFAC World Congress) there was much to prepare and discuss. Topics included triennial activity updates, progress reports of upcoming IFAC World Congresses, preparation of the triennial General Assembly, as well as the upcoming IFAC Council & Related Meetings which will take place in Yokohama in conjunction with IFAC 2023, and many other important matters.

Some of the contingent attended a performance at Vienna's State Opera on Friday evening. In this way they were able to experience some of the Austrian capital's rich and diverse cultural offerings and the beauty of the opera building.

Plans are underway for the next „Spring“ Executive Officers' meeting, which is planned for April 2024.


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Das Sekretariat der IFAC befindet sich seit 1978 aufgrund eines Übereinkommens mit der Österreichischen Bundesregierung und mit der Österreichischen Akademie der Wissenschaften in Laxenburg und wird derzeit aus Mitteln des Bundesministeriums für Klimaschutz, Umwelt, Energie, Mobilität, Innovation und Technologie „BMK“ gefördert.

 **Bundesministerium**  
Klimaschutz, Umwelt,  
Energie, Mobilität,  
Innovation und Technologie

## Calendar of IFAC Conferences

Title	2023	Place	Further Information
Conference on American Control Conference (in cooperation with IFAC) ACC 2023	May/June 31 – 02	San Diego, CA USA	<a href="http://acc2023.a2c2.org/">acc2023.a2c2.org/</a>
9th International Conference on Control, Decision and Information Technologies CoDIT 2023	July 03 – 06	Rome Italy	<a href="http://codit2023.com/">codit2023.com/</a>
22 <sup>nd</sup> IFAC World Congress 2023 WC 2023	July 09 – 14	Yokohama Japan	<a href="http://ifac2023.org/">ifac2023.org/</a> <a href="mailto:ifac2023@congre.co.jp">ifac2023@congre.co.jp</a>
Conference on European Control Conference (in cooperation with IFAC) ECC 2023	July 13 – 16	Bucharest Romania	<a href="http://ecc23.euca-ecc.org/">ecc23.euca-ecc.org/</a> <a href="mailto:ecc2023@euca-ecc.org">ecc2023@euca-ecc.org</a>
3 <sup>rd</sup> AACC Conference on Modeling, Estimation and Control Conference MECC 2023	October 02 – 05	Lake Tahoe, NV USA	<a href="http://mecc2023.a2c2.org/">mecc2023.a2c2.org/</a>
Title	2024	Place	Further Information
Conference on Australian & New Zealand Control Conference (in cooperation with IFAC) ANZCC 2024	February 01 – 02	Gold Coast Australia	<a href="http://anzcc.org.au/ANZCC2024/">anzcc.org.au/ANZCC2024/</a> <a href="mailto:i.vlacic@griffith.edu.au">i.vlacic@griffith.edu.au</a>
8 <sup>th</sup> ACDOS Conference on Advances in Control and Optimization of Dynamical Systems ACODS 2024	March 12 – 15	Delhi NCR India	<a href="http://acods-conference.org/">acods-conference.org/</a> <a href="mailto:naveen.babu@snu.edu.in">naveen.babu@snu.edu.in</a>
12 <sup>th</sup> IFAC Symposium on Fault Detection, Supervision and Safety for Technical Processes SAFEPROCESS 2024	June 04 – 07	Ferrara Italy	
7 <sup>th</sup> IFAC Conference on Analysis and Control of Nonlinear Dynamics and Chaos ACNDC 2024	June 05 – 07	London United Kingdom	<a href="http://acndc2024.org/">acndc2024.org/</a>
Conference on American Control Conference (in cooperation with IFAC) ACC 2024	July 08 – 12	Toronto Canada	
12 <sup>th</sup> IFAC Symposium on Control of Power and Energy Systems CPES 2024	July 10 – 12	Rabat Morocco	
12 <sup>th</sup> IFAC Symposium on Advanced Control of Chemical Processes ADCHEM 2024	July 14 – 17	Toronto Canada	
20 <sup>th</sup> IFAC Symposium on System Identification SYSID 2024	July 17 – 19	Boston, MA USA	
8 <sup>th</sup> IFAC Conference on Nonlinear Model Predictive Control NMPC 2024	August 27 – 30	Kyoto Japan	<a href="http://nmmpc2024.org/">nmmpc2024.org/</a> <a href="mailto:secretariat@nmmpc2024.org">secretariat@nmmpc2024.org</a>
18 <sup>th</sup> IFAC Symposium on Information Control Problems in Manufacturing INCOM 2024	August 28 – 30	Vienna Austria	
4 <sup>th</sup> IFAC Conference on Modelling, Identification and Control of Nonlinear Systems MICNON 2024	September 04 – 06	Lyon France	

The IFAC Calendar of Conferences is constantly updated as additional IFAC Conferences (Workshops, Symposia, and Conferences) are approved. Please check back often for the current status. The complete version of the IFAC Calendar of Conferences is available online at: <https://www.ifac-control.org/events/>