



10th-2024 International Conference on Control, Decision and Information Technologies

CoDiT 2024
July 01-04, 2024 - Valletta, Malta



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Welcome Message

It is with great pleasure that we welcome all the participants of the 10th Conference on Control, Decision and Information Technologies (CoDIT 2024) at the University of Malta (UM), Valletta Campus, July 1-4, 2024.

CoDIT is now an affirmed conference in the field of Control, Optimization, Decision, Computer Science and Information Technologies. From its first edition in 2013 in Tunisia, CoDIT has gained an increasing international importance and recognition. This year CoDIT received over 800 submissions, which yield to the organization of 76 technical sessions. The conference is enriched by three plenary talks from internationally recognized researchers on emerging research topics. This year the conference features also a cultural event with agala dinner, which will be held on Wednesday 3 July 2024. The attendees are together at 18:00, at the ground floor lobby of the University of Malta Valletta Campus.

The conference is organized under the technical sponsorship of the IEEE Control Systems Society, the IEEE Systems, Man, and Cybernetics Society, the IEEE Robotics and Automation Society, and the International Federation of Automatic Control (IFAC) with the great support of the University of Malta.

Finally, an event of this size and importance could not be organized without the strong commitment of all the members of the organizing committee together with support and help of many volunteers. Special thanks go to the UM Conferences and Events Unit for the sterling service provided for the organisation and hosting of this event.

On behalf of the Organizing Committee

General co-chairs

Owen Casha, University of Malta, Malta

Bozena Pasik-Duncan, University of Kansas, USA

Achraf Jabeur Telmoudi, University of Tunis, Tunisia

CoDIT 2024 Committees

General co-Chairs

Owen Casha, University of Malta, Malta
Bozenna Pasik-Duncan, University of Kansas, USA
Achraf Jabeur Telmoudi, University of Tunis, Tunisia

Advisory committee co-Chairs

Giancarlo Fortino, University of Calabria, Italy
Dimos Dimarogonas, KTH Royal Institute of Technology, Sweden
James H. Lambert, University of Virginia, USA
Bahram Shafai, ECE Northeastern University, USA
Enrique Herrera Viedma, University of Granada, Spain

Publication Chair

Claudia Califano, Italy

Program co-Chairs

Marvin Bugeja, Malta
Maria Pia Fanti, , Italy
Alain Quilliot, France
Zhiwu Li, China

"Work in Progress" program co-chairs

Meyer Dagmar, Germany
Feiqi Deng, *China*
Giuseppe Franzè, *Italy*
Nhan-Quy Nguyen, France

Special Sessions co-Chairs

Naoufel Cheikhrouhou, Switzerland
Yassine Ouazene, France
Fumio Mizuno, Japan

Industry co-Chairs

Sébastien Martin, France
Nassim Rizoug, France

Steering Committee

Nizar Bouguila, Canada	Zhiwu Li, China
Owen Casha, Malta	Belkacem Ould-Bouamama, France
Lale Canan Dulger, Turkey	Bozenna Pasik-Duncan, USA
Maria Pia Fanti, Italy	Alain Quilliot, France
Alessandro Giua, Italy	Achraf Jabeur Telmoudi, Tunisia
Nicholas Karampetakis, Greece	Enrique H. Viedma, Spain

Venue and Practical Information

CONFERENCE LOCATION

The Conference will be held at the University of Malta Valletta Campus, on Triq San Pawl (St Paul Street) in Valletta. The venue has two entrances: one on Triq il-Merkanti (Merchants Street), accessible only to pedestrians, and the other on Triq San Pawl. If you're arriving by taxi, please use the entrance on Triq San Pawl. Further details on how to reach the venue can be found here:

<https://www.um.edu.mt/campuses/valletta>



CONFERENCE REGISTRATION AND SCHEDULE DETAILS

Registration will open on 1st July at 07:30, with sessions starting at 08:00. Coffee breaks and lunches will be provided at the conference venue. A detailed program schedule is available here:

<https://www.codit2024.com/CoDIT2024-Program.pdf>

SOCIAL EVENT & GALA DINNER



The gala dinner will be held on Wednesday 3rd July.

Evening Event Plan:

- **18:00** - The group meets at the Valletta Campus and we walk to the buses.
- **19:00** - Walking tour of Mdina.
- **20:00/20:15** - Seated at the Xara Lodge.
- **22:30/23:00** - Event concludes.

The Xara Lodge address: Sqaq Tac-Cawla, Triq It-Tigrija, Ir-Rabat RBT 5320, Malte

PRESENTATION SETUP INSTRUCTIONS

Each room is equipped with a PC, so please bring your presentations on a pen drive and load them onto the PC/laptop in the respective rooms. Additionally, all rooms are equipped with screens for displaying your presentations. The main hall is outfitted with a projector for larger presentations.

Kindly note that the electricity supply in Malta is 220/240 volts, single phase, 50 cycle. The square fitting standard three-pin plugs and sockets are used.



TRANSPORT INFORMATION

Malta International Airport: There is a **Taxi Stand at the airport**. Taxi service from the Airport is available 24 hours a day to any destination in Malta, including Valletta. Fixed rates are applicable and pre-paid tickets can be purchased from the ticket booth at Arrivals. For rates and more details click here:

<https://www.maltairport.com/passenger/getting-here/taxi-service>



Public Transport: Public transport is available from the airport via X routes. Updated information regarding timings and routes can be accessed here:

<https://www.publictransport.com.mt/en/airport-services>

As for getting to the conference venue and exploring Malta, it is very easy to reach practically all areas by using the public transport buses. Routes and timings may be accessed on the official public transport website:

<https://www.publictransport.com.mt>



Ferry Service: A ferry service operates from Valletta to Sliema and to the Three Cities. Apart from being a pleasant way to travel from one side to the other of the harbour, it is also often quicker than land transport, especially during rush hours. Timetables and ticket prices may be found [here](#):

<https://www.vallettaferryservices.com>



CoDIT 2024 Program

Monday - July 01, 2024					Tuesday - July 02, 2024					Wednesday - July 03, 2024				Thursday - July 04, 2024								
Registration (7:30 - 16:30)	(8:00 - 10:00) T-Sessions 1					(8:00 - 10:00) T-Sessions 5					(8:00 - 10:00) T-Sessions 9				(8:00 - 10:00) T-Sessions 14							
	S-01	S-02	S-03	S-04	S-05	S-21	S-22	S-23	S-24	S-25	S-41	S-42	S-43	S-44	S-47	S-48	S-49	S-50				
	(10:00 - 10:20) Coffee break					(10:00 - 10:20) Coffee break					(10:00 - 10:20) Coffee break				(10:00 - 10:20) Coffee break							
	(10:20- 11:20)					(10:20- 11:10)					(10:20 - 12:20) HT-Sessions 10				(10:20 - 12:20) VT-Sessions 15							
	Opening Ceremony & Keynote 1					Keynote 3					S-45	S-46	V-1	V-2	V-21	V-22	V-23	V-24	V-25	V-26		
	(11:20 - 13:00) T-Sessions 2					(11:10 - 12:50) T-Sessions 6					(12:20 -14:20) VT-Sessions 11				<div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #d9e1f2; margin-right: 5px;"></div> On-Site Sessions (S) </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #fce4d6; margin-right: 5px;"></div> Online Sessions (V) </div> <p>The schedule follows Central European Summer Time (CEST) - GMT + 2 hours.</p> </div>							
	S-06	S-07	S-08	S-09	S-10	S-26	S-27	S-28	S-29	S-30	V-3	V-4	V-5	V-6							V-7	V-8
	(13:00 - 14:20) Lunch					(12:50 - 14:10) Lunch					(14:20 -16:40) VT-Sessions 12											
	(14:20- 15:10)					(14:10 - 16:10) T-Sessions 7					V-9	V-10	V-11	V-12							V-13	V-14
	Keynote 2					S-31					(16:40 - 19:00) VT-Sessions 13				Free time							
(15:10 - 16:50) T- Sessions 3					V-15						V-16	V-17	V-18	V-19							V-20	
S-11	S-12	S-13	S-14	S-15	(16:10 - 16:30) Coffee break					Social Event & Gala dinner												
(16:50- 17:10) Coffee break																						
(17:10 - 19:10) T-Sessions 4					(16:30 - 18:30) T-Sessions 8					(18:00 - 22:30)												
S-16	S-17	S-18	S-19	S-20	S-36	S-37	S-38	S-39	S-40													

IMPORTANT

PRESENTATIONS - DURATION

- **Keynote:** The duration of each presentation is of 40 minutes plus 10 minutes for questions.
- **Oral presentation (Regular):** The max duration of each presentation is of 13 minutes plus 4 minutes for questions.

Accepted file formats for all presentations are PDF and PPT.

Keynotes

KEYNOTE 1

(July 01, 2024 / 10:30-11:20)

Decision and control for smart energy communities

Prof. Mariagrazia Dotoli (IEEE Fellow)

Politecnico di Bari, Italy

Chair: Prof. Bozena Pasik-Duncan, University of Kansas, USA

Room: Aula Magna

Abstract

A powerful solution contributing to the green transformation of modern power systems is represented by the so-called energy community. The term ‘energy community’ denotes a community of users (private, public, or mixed) located in a specific reference area, where all stakeholders – such as end-users (e.g., citizens, companies, etc.), market players (e.g., utilities, service providers), practitioners, planners and policy-makers – actively cooperate to develop a ‘smart’ energy system. Independently from the implemented architecture, the success of energy communities relies on the deployment of suitable decision and control mechanisms that efficiently and widely exploit renewable sources and distributed storage, while enabling the application of measures oriented to cost-effectiveness, sustainability, and reliability. In this context, the talk presents innovative decision and control frameworks, such as game-theoretic methodologies, for energy communities composed of heterogeneous actors equipped with trading and sharing service oriented energy systems. The effectiveness of the presented approaches is shown through numerical simulations on realistic scenarios.

Biography of Prof. Mariagrazia Dotoli



Dr. Mariagrazia Dotoli (<http://dclab.poliba.it/people/mariagrazia-dotoli/>) holds a PhD in Electrical Engineering and is a Full Professor in Automatic Control at Politecnico di Bari, Italy, where she is also the Founder and Coordinator of the Italian National PhD Program on Autonomous Systems (DAUSY, <http://dausy.poliba.it/phd/>), an interuniversity PhD Program with 25 Universities all over Italy. Prof. Dotoli was the Vice Rector for research of Politecnico di Bari and a member elect of the Academic Senate.

She is the founder and director (2012-) of the Decision and Control Laboratory of Politecnico di Bari, Italy <http://dclab.poliba.it/> and was the founder and coordinator (2020-2022) of PhD Program on Industry 4.0, Politecnico di Bari, Italy <http://phdindustria40.poliba.it/ind/>. She is the founder (2012) of Politecnico di Bari spin-off company Innolab S.r.l. (<https://www.innolabsrl.it/>) She is member of the Executive Board of the Italian MEDITECH competence center for Industry 4.0 <https://meditech4.com/> funded by the Italian Ministry for Economic Development.

Her research interests include decision and control approaches for energy systems, smart manufacturing, intelligent logistics, transportation systems and smart cities. She is author of 200+ international publications in these fields, including 1 textbook (in Italian) and 80+ international journal papers. Her h-index in Google Scholar equals 45, with 7000+ citations.

Prof. Dotoli is listed in the world top 2% scientists list for career-long impact and single-year categories in the “Industrial Engineering & Automation” and “Artificial Intelligence & Image Processing” fields in accordance with the well-known standardized citation metrics author database developed by Ioannidis et al., 2022 and released by Stanford University and Elsevier BV.

KEYNOTE 2

(July 01, 2024 / 14:20-15:10)

Data-Driven Production, Innovation: Industry X.0

Prof. Farouk Yalaoui

*(UTT's Senior Director, Vice-President of Research,
Director and Founder of Connected Innovation Chair)*
Université de Technologie de Troyes, France

Chair: Prof. Carla Seatzu, University of Cagliari, Italy

Room: Aula Magna

Abstract

The proposed talk is a part of large work developed since many years with my team at UTT and different collaboration around the world. In France's Grand Est region, recognized for its evolving industry and innovative practices, a comprehensive, data-informed plenary speech on Industry X.0 is delivered. This speech investigates how data shapes today's production and innovation. It also highlights the challenges introduced by the evolving data-centric Industry X.0. Transitioning from theoretical insights to real-world applications, the speech delves into modern factory trends, spotlighting the flexible production systems influenced by Industry 4.0. It further examines real-time decision-making techniques, detailing approaches such as offline, online, and semi-online scheduling. Additionally, the Network of Supply Systems (NSS) and its role in shaping digital and sustainable business practices are discussed, emphasizing the alignment of products and strategies with user demands. The interplay between Data, Information, and Knowledge in production settings is emphasized. The speech examines the traditional 'Big Data' approach and presents the 'Smart Data' perspective as an avenue for enhanced efficiency. In illustrating this, the value and impact of different types of information, especially in task scheduling, are explored. The topic of quality control in Industry X.0 is also broached, focusing on state-of-the-art systems that integrate with cyber-physical production systems (CPPS). The innovative "Meta" quality control concept, leveraging digital twin models, is introduced and contextualized using a case example. Concluding, the speech underscores the importance of innovation in Industry X.0, of new ideas and cross-disciplinary collaboration. There's also a call to reimagine educational approaches in line with Society 5.0 and Industry 5.0 principles. The plenary speech wraps up by envisioning the future trajectory of Industry X.0, championing the intelligent utilization of technology in sync with human skills and evolving societal needs.

Biography of Prof. Farouk Yalaoui



Professor Farouk YALAOUI (<https://www.faroukyalaoui.com>) is currently a full Professor at Troyes University of Technology (UTT), France, where he is the Senior Director for Research of UTT. He is also scientific director of Industrial Chair "Connected Innovation" of UTT since 2016. He is the former director of LOSI Lab. (Logistiques et Optimisation des systèmes Industriels) of UTT and former director of Services and Industries of The future of Troyes Institute (SIFT). He obtained his Engineering degree in Industrial Engineering from the Polytechnics School of Algiers (Algeria) in 1995, his master's degree in Industrial

System Engineering from Polytechnics Institute of Lorraine (Nancy, France) in 1997, his Ph.D. degree in Production Management from the Troyes University of Technology (UTT) in 2000 and followed by a Habilitation à diriger les recherches (Dr. Hab) from Compiègne University of Technology (UTC) in 2006. His research topic focuses on the scheduling problems, system design, operations research, modeling, analysis and optimization of logistic and production systems, reliability and maintenance optimization and on optimization problems in general. He supervised or co-supervised 29 Ph.D thesis and more than 82 projects since 2001.

KEYNOTE 3

(July 02, 2024 / 10:20-11:10)

Autoencoder-embedded Evolutionary Algorithms for High-dimensional Expensive Optimization Problems

Prof. MengChu Zhou

(Fellow of IEEE, IFAC, AAAS, CAA and NAI)

New Jersey Institute of Technology, USA

Chair: Prof. Maria Pia Fanti, Polytechnic University of Bari, Italy

Room: Aula Magna

Abstract

A High-dimensional computationally Expensive Problems (HEPs) in which a single fitness evaluation consumes hours or even days have attracted much attention from both academia and industry. Exponentially expanding search space and complex landscape brought by numerous decision variables make HEPs extremely challenging to be solved by traditional algorithms with limited physical/computational resources. Therefore, an Autoencoder-embedded Evolutionary Optimization (AEO) framework is invented to deal with them. To be specific, high-dimensional search space can be compressed to informative low-dimensional space by using an autoencoder as an effective dimension reduction tool. The search operation conducted in this low-dimensional space facilitates the population in convergence towards the optima. To balance the exploration and exploitation ability during optimization, two sub-populations are adopted to coevolve in a distributed/parallel fashion, wherein one is assisted by an autoencoder and the other undergoes a regular evolutionary process. Dynamic information exchange is conducted between them after each cycle to promote population diversity. Moreover, surrogate models can be incorporated into AEO (SAEO) to further boost its performance by reducing unnecessary fitness evaluation. Compared with the state-of-the-art algorithms for HEPs, AEO shows extraordinarily high efficiency for these challenging problems while SAEO can greatly improve the performance of AEO in most cases, thus opening new directions for various swarm optimization and evolutionary algorithms under both AEO and SAEO to tackle HEPs and greatly advancing the field of high-dimensional computationally expensive optimization. Their recent applications to mobile edge-computing systems, human-cyber-physical systems, and production scheduling are also illustrated.

Biography of Prof. MengChu Zhou



MengChu Zhou received his B.S. degree in Control Engineering from Nanjing University of Science and Technology, Nanjing, China in 1983, M.S. degree in Automatic Control from Beijing Institute of Technology, Beijing, China in 1986, and Ph. D. degree in Computer and Systems Engineering from Rensselaer Polytechnic Institute, Troy, NY in 1990. He joined New Jersey Institute of Technology (NJIT), Newark, NJ in 1990, and has been Distinguished Professor in Electrical and Computer Engineering since 2013. His research interests are in Petri nets, intelligent automation, AI, Cloud/edge Computing, Internet of Things, big data, web services, and intelligent transportation. He has over 1200 publications including 17 books, 850+ journal papers (650+ in IEEE transactions), 31 patents and 32 book-chapters. He is the founding Editor of IEEE Press Book Series on Systems Science and Engineering, and Associate Editor of IEEE Internet of Things Journal, IEEE Transactions on Intelligent Transportation Systems, and IEEE Transactions on Systems, Man, and Cybernetics: Systems. He was Editor-in-Chief of IEEE/CAA Journal of Automatica Sinica (2018-2022). His present Google citation count is well over 67000 with h-index being 132. He was ranked #99 in the world among the 2023 Top 1000 Scientists in Computer Science in the World by Research.com. He is a life member of Chinese Association for Science and Technology-USA and served as its President in 1999. He is a Fellow of IEEE, International Federation of Automatic Control (IFAC), American Association for the Advancement of Science (AAAS), Chinese Association of Automation (CAA), and National Academy of Inventors (NAI).

Sessions Titles - Papers ID/Session

Day / Time		Code	Title	Papers ID/Sessions	Rooms	
Monday - July 01, 2024	T-Sessions 1	8:00 - 10:00	S-01	Process Control	611 - 458 - 77 - 430 - 372 - 759	Aula Magna
			S-02	Control Applications	450 -586 - 265 - 605 - 156 -189	M.Room 102
			S-03	Sensors and Instrumentation	420 - 173 - 394 - 573 - 186 - 198	M.Room 103
			S-04	Computer in Engineering	286 - 192 - 518 - 648 - 678 - 216 - 417	M.Room 2
			S-05	System Identification	282 - 532 - 143 - 674 - 366 - 752 - 673	M.Room 3
	T-Sessions 2	11:20 - 13:00	S-06	Advanced Control Solutions for Nonlinear Systems	592 - 259 - 102 - 131 - 264 - 285	Aula Magna
			S-07	Applied Artificial Intelligence	305 - 195 - 428 - 431 - 587 - 704	M.ROOM 102
			S-08	Special Session - Enterprise Resilience and Control Systems	135 - 137- 339 - 171 - 411 - 423 - 212	M.ROOM 103
			S-09	Graphs and Networks	407 - 331 - 231 - 711 - 369 - 254 - 182	M.ROOM 2
			S-10	Predictive and Optimal Control	340 - 677 - 412 - 151 - 128 - 245	M.ROOM 3
	T-Sessions 3	15:10 - 16:50	S-11	Energy Control and Optimization	229 - 494 - 162 - 619 - 246 - 248	Aula Magna
			S-12	Special Session: Recent Advances in Multi-Robot Systems: Modeling, Optimization and Applications	287 - 338 - 507 - 279 - 661 - 749	M.ROOM 102
			S-13	Special Session - Stochastic Systems and Control with Emerging Applications	207 - 241 - 452 - 628 - 290 - 414	M.ROOM 103
			S-14	Scheduling and Supply Chain Management Problems	770 - 725 - 220 - 311 - 760 - 485 - 126	M.ROOM 2
			S-15	Fault Detection	446 - 274 - 111 - 196 - 581 - 556	M.ROOM 3
	T-Sessions 4	17:10 - 18:50	S-16	Discrete Event Systems	609 - 356 - 351 - 205 - 639 - 508 - 272	Aula Magna
			S-17	Transport Optimization	87 - 96 - 88 - 389 - 396 - 621 - 318	M.ROOM 102
			S-18	Intelligent Control	416 - 695 - 163 - 328 - 688 - 629	M.ROOM 103
			S-19	Artificial Intelligence	190 - 252 - 404 - 625 - 132 - 213 - 544	M.ROOM 2
			S-20	Control Design Methods (Part 1)	308 - 142 - 558 - 438 - 676 - 500 - 570	M.ROOM 3

Sessions / Time		Code	Title	Papers ID/Sessions	Rooms	
Tuesday - July 02, 2024	T-Sessions 5	8:00 - 10:00	S-21	Multi-Objective Optimization	538 - 422 - 761 - 295 - 312 - 613 - 719	Aula Magna
			S-22	Control of Nonlinear Systems	243 - 354 - 555 - 69 - 667 - 724 - 633	M.ROOM 102
			S-23	Modeling and Simulation with applications	576 - 690 - 262 - 337 - 193 - 717 - 223	M.ROOM 103
			S-24	Learning Systems	653 - 659 - 230 - 530 - 666	M.ROOM 2
			S-25	Control Design Methods (Part 2)	715 - 509 - 564 - 94 - 110 - 638 - 146	M.ROOM 3
	T-Sessions 6	11:20 - 12:50	S-26	Special Session - Data driven approach for modelling, control and optimization of cyber-physical systems	319 - 361 - 397 - 590 - 731 - 758	Aula Magna
			S-27	Applied Optimization	355 - 474 - 317 - 71 - 348 - 127 - 425	M.ROOM 102
			S-28	Linear Systems	199 - 255 - 218 - 145 - 138 - 712	M.ROOM 103
			S-29	Operational Research	281 - 324 - 336 - 139 - 762 - 121 - 398	M.ROOM 2
			S-30	Optimal Control	505 - 120 - 539 - 405 - 657 - 600 - 537	M.ROOM 3
	T-Sessions 7	12:10 - 16:10	S-31	Robotics with Applications (Part 1)	504 - 595 - 641 - 329 - 680 - 560 - 519	Aula Magna
			S-32	Engineering with Applied Neural Networks	95 - 85 - 745 - 154 - 275 - 334	M.ROOM 102
			S-33	Special Session - Advances in robotic navigation in cluttered and hostile environments	381 - 454 - 540 - 542 - 686	M.ROOM 103
			S-34	Software based Artificial Intelligence	188 - 211 - 206 - 671 - 292 - 14	M.ROOM 2
			S-35	Special Session - Recent Advances for Resource Allocation Problems	125 - 185 - 607 - 310 - 434 - 577 - 370	M.ROOM 3
	T-Sessions 8	16:30 - 18:30	S-36	Robotics with Applications (Part 2)	603 - 54 - 598 - 506 - 720 - 104 - 503	Aula Magna
			S-37	Learning Systems	309 - 174 - 117 - 631 - 689 - 464	M.ROOM 102
			S-38	Control Theory	493 - 432 - 672 - 444 - 647 - 566	M.ROOM 103
			S-39	Internet and Cloud Computing	166 - 496 - 627 - 187 - 637 - 393	M.ROOM 2
			S-40	Diagnosis Techniques	314 - 343 - 122 - 118 - 238 - 708	M.ROOM 3

Sessions / Time		Code	Title	Papers ID/Sessions	Rooms
Wednesday - July 03, 2024	T-Sessions 9 8:00 - 10:00	S-41	Image Processing	20 - 364 - 235 - 421 - 486 - 392	M.ROOM 102
		S-42	Special Session - Optimization and control for fusion plasmas	130 - 129 - 133 - 158 - 73 - 236	M.ROOM 103
		S-43	Combinatorial and Applied Optimization	601 - 697 - 591 - 344 - 302 - 455 - 502	M.ROOM 2
		S-44	Intelligent Systems	177 - 665 - 655 - 341 - 76 - 225	M.ROOM 3
	H-Sessions 10 10:20 - 12:20	S-45	Special Session: Intelligent systems and methods for human monitoring	261 - 263 - 270 - 634 - 375	M.ROOM 102
		S-46	Special Session: Artificial Intelligence trends for healthcare optimization: Metaheuristics, Machine learning and IOT	578 - 599 - 601 - 617 - 698 - 729 - 734	M.ROOM 133
		V-01	Applications based Neural Networks	568 - 433 - 511 - 222 - 750 - 701 - 435	Virtual Platform
		V-02	Applied Optimization	681 - 181 - 567 - 747 - 296 - 602 - 636	
	V-Sessions 11 12:20 - 14:20	V-03	Control Applications	436 - 510 - 557 - 227 - 48 - 533 - 616 - 664	
		V-04	Multi-Objective and Intelligent Optimization	447 - 490 - 99 - 108 - 606 - 604 - 520	
		V-05	Computer Assisted Optimization	234 - 705 - 387 - 460 - 732 - 479 - 159	
		V-06	Applied Transport Optimization	699 - 651 - 373 - 106 - 440 - 401	
		V-07	Scheduling and Optimization Strategies	365 - 754 - 646 - 439 - 565 - 180 - 169	
	V-Sessions 12 14:20 - 16:40	V-08	Diagnosis and Systems Security	771 - 763 - 764 - 766 - 765 - 232 - 291	
		V-09	Cloud Computing and Wireless Systems	593 - 594 - 726 - 685 - 247 - 202 - 702	
		V-10	Fault Detection	735 - 748 - 93 - 736 - 484 - 769 - 721	
		V-11	Monitoring and Supervision	257 - 620 - 345 - 663 - 654 - 32 - 572 - 183	
		V-12	System Identification	466 - 149 - 642 - 529 - 167 - 640 - 656	
		V-13	IoT and AI for Smart Systems	379 - 453 - 554 - 757 - 152 - 203 - 517 - 583	
		V-14	Robotics	297 - 543 - 495 - 534 - 635 - 516 - 144	
V-Sessions 13 16:40 - 19:00	V-15	Image Processing	427 - 342 - 563 - 473 - 596 - 51 - 551 - 751		
	V-16	Applied Control Techniques	707 - 456 - 552 - 622 - 134 - 140 - 696 - 668		
	V-17	Nonlinear Systems	515 - 301 - 402 - 200 - 178 - 153 - 614 - 753		
	V-18	Artificial Intelligence and Data Mining	147 - 357 - 410 - 184 - 624 - 382 - 68 - 571		
	V-19	Integrated Energy Control	298 - 501 - 161 - 141 - 419 - 692 - 575 - 773		
	V-20	Intelligent Control	278 - 559 - 597 - 113 - 561 - 346 - 589 - 97		

Sessions / Time		Code	Title	Papers ID/Sessions	Rooms
Thursday - July 04, 2024	T-Sessions 14 8:00 - 10:00	S-47	Special Session - Efficient Training Paradigms for Edge Devices: Balancing Memory and Time Constraints	160 - 321 - 323 - 743 - 271 - 541 - 426 - 289	MR 102
		S-48	Mobile, Wireless Communications, and Telecommunication Applications	524 - 100 - 478 - 56 - 313 - 358	MR 103
		S-49	Monitoring and Supervision	63 - 526 - 487 - 482 - 64 - 170	MR 2
		S-50	Data Mining	244 - 580 - 109 - 214 - 315	MR 3
	V-Sessions 15 10:20 - 12:20	V-21	Smart Engineering Innovations	706 - 535 - 687 - 1 - 424 - 363 - 448 - 352	Virtual Platform
		V-22	Innovative Control Design	584 - 258 - 521 - 693 - 325 - 409 - 536 - 718	
		V-23	Systems Engineering	549 - 273 - 303 - 716 - 746 - 197 - 306 - 242	
		V-24	Control Theory	528 - 376 - 280 - 2 - 294 - 288 - 267 - 233	
		V-25	Special Session: Emergent Methods, Techniques and Tools for Cybersecurity	429 - 457 - 461 - 194 - 465 - 475 - 492 - 755	
		V-26	Control Systems	256 - 703 - 585 - 694 - 359 - 574 - 626	

Papers / Session & Sessions chairs

Session S-01: Process Control

Session chair(s): Ixbalank Torres & Mohit Makkar

Paper ID	Title	Authors
611	Advanced MIMO Control for Offshore Produced Water Treatment–A Comparative Study	Mahsa Kashani*, Stefan Jespersen, Alessandro Astolfi, Zhenyu Yang (Denmark)
458	A Dedicated Acceptance Sampling Plan for Quality Inspection in Textile Industry	CHAKIB MECHERI*, Nhan Quy Nguyen, Yassine Ouazene, Farouk Yalaoui, Thierry Scaglia (France)
77	FPGA-Embedded Online Optimization of a Microbial Electrolysis Cell	Ixbalank Torres Zúñiga*, José de Jesús Colín Robles, Glenda Cea, Fernando Lopez-Caamal, Victor Alcaraz-Gonzalez (Mexico)
430	On the Shifted Passivity of Continuous Bioreactors	Jean-Yves Dieulot, Mohit Makkar* (India)
372	Case-Based Reasoning Recommender System for Dynamic Quality Control Plan	Fadwa Oukhay*, Taieb Ben Romdhane, Asma Ben Ahmed, Afef Gueidi (Tunisia)
759	Joint Optimization of a Production/maintenance Plan for Serial Machines with Variable Quality Rate	Ayoub TIGHAZOUI*, Zakaria Chekoubi, Zied Hajej (France)

Session S-02: Control Applications

Session chair(s): Palumbo Pasquale & Rainer Nitsche

Paper ID	Title	Authors
450	An improved side-slip estimation algorithm based on ultra-local model technique for autonomous vehicles	Daniel Fenyes*, Tamas Hegedus, Balazs Nemeth, Peter Gaspar (Hungary)
586	Non-Linear AIMD with Time-Varying Resource and Saturation Constraints	Sravya Chakravartula, Arunkumar Mahindrakar* (India)
265	Outlet Pressure Regulation in a High-Viscosity Two-Phase Flow Horizontal Pipeline Using Inverse ANN and PSO	Wassila Ajbar*, Lizeth Torres, Enrique Guzmán, Marisol Cervantes-Bobadilla (Mexico)
605	An Investigation into the Safety of Autonomous Vehicles on Highways with Reduced Lane Widths	Joshua D'Souza, Keith Burnham, James Pickering* (United Kingdom)
156	Observer-Based Output Feedback Control with Application to PEMFC	Valerio Cusimano, Alfredo Germani, Pasquale Palumbo* (Italy)
189	Set-Based Trajectory Planning for a Car-Like Vehicle	Vito Antonio Nardi* (Italy)

Session S-03: Sensors and Instrumentation

Session chair(s): Antonio Ramos & Buket Barkana

Paper ID	Title	Authors
420	Estimation of Strawberry Weight Using Smart Glasses	Koki Fukushige, Naoki Uchiyama* (Japan)
173	A Cost-Effective Automatic Calibration Platform for Inertial Measurement Units	Salvatore Rosario Bassolillo*, Egidio D'Amato, Immacolata Notaro (Italy)
394	Multi-Spectral Stereo-Imaging for Autonomous Farming Using Low-Cost Sensors	Hanno Homann*, Fedi Boukhris, Frank Stollmeier, Manuel Ufheil, Jens Christian Will (Germany)
573	Parameter Estimation of Multisensor State Space Models with Outlier Contamination	JAAFAR ALMUTAWA* (Kuwait)
186	Exploiting Reverberation Fingerprint for a Neural Network-Based Acoustic Emitter Localization	José Antonio Apolinário Jr., Antonio L. L. Ramos*, Rigel Procópio Fernandes, Julio Cesar Duarte, Marcelo Nogueira de Sousa (Norway)
198	Surface Roughness Characterization of Small-Bore Fittings using the Confocal Chromatic Measurement System	Buket Barkana*, Erin Keller, Nariman Mahabadi (USA)

Session S-04: Computer in Engineering**Session chair(s): Brida Peter & Vito Nardi**

Paper ID	Title	Authors
286	Optimizing Hyperparameters of a Multi-Scale Convolutional Neural Model Tailored to Describe Amorphous Materials Behavior	Marek Pakosta* (Czech Republic)
192	Integrating Solar-Powered Electric Vehicles into V2G-Capable Smart Parking Infrastructure for Enhanced Energy Efficiency	Saba Askari Noghani, Paolo Scarabaggio*, Raffaele Carli, Mariagrazia Dotoli (Italy)
518	Design, Development and Maintenance of a Digital Twin of Vitrification Process: A Methodological Contribution	Guilhem GALAND*, Souad RABAH, Vincent Chapurlat, caroline chabal, Alain Ledoux (France)
648	Enhancing public transport systems through scalable real-time forecasting solutions for the case study of Rennes	Mohammadmahdi Rahimiasl*, Ynte Vanderhoydonc, Siegfried Mercelis (Belgium)
678	A Visual Tracking System for UAV Landing on Ships	Bruno Damas*, Nuno Pessanha Santos, Matilde Vieira (Portugal)
216	Application of the Convolutional Neural Network to Recognition of the Two-Phase Water-Air Flow Regime in a Pipeline Using Histograms of Radiometric Signals	Robert Hanus*, Marcin Zych, Piotr Ochał, Rafał Chorzępa (Poland)
417	Data Mesh: Guiding Principles and Patterns, and Data Catalog Architectural Concept	Soňa Karkošková* (Czech Republic)

Session S-05: System Identification**Session chair(s): Antonio Fazzi & Tamara Nestorovic**

Paper ID	Title	Authors
282	Towards Empirical Transfer Function Estimation for Frequency Domain Closed-Loop System Identification	Amirreza Zaman*, Dina Shona Laila, Wolfgang Birk (Sweden)
532	Black Box Hygrothermal Models for MPC Applications in Historical Buildings	Marcel Zehner*, Alessio Cavaterra, Steven Lambeck (Germany)
143	Processor-In-The-Loop for the Interlaced Estimation of States and Parameters in a LiFePO4 Battery Model	Elisa Mostacciolo*, Silvio Baccari, Luigi Iannelli, Francesco Vasca (Italy)
674	Physical-Inspired State Space Structure for Nonlinear Gray-Box Modeling	Hermann Klein*, Max Schüssler, Oliver Nelles (Germany)
366	Identification of Linear Data-Driven Models for Large-Scale Power Systems	Elia Zuccaro, Riccardo Bacci di Capaci*, Gabriele Pannocchia, Ara Panosyan (Italy)
752	Adaptive State Observer for PMSM with Fixed Time Convergence	Dmitry Bazylev, Dmitrii Dobribors* (Germany)
673	Real-Time Identification of a Servo System Via a Robust Least Squares Algorithm	Abraham Rivera*, Rubén Garrido (Mexico)

Session S-06: Advanced Control Solutions for Nonlinear Systems**Session chair(s): Dagmar Meyer & Adriano Mele**

Paper ID	Title	Authors
592	Verhulst-Based Estimator for Quadrotor Navigation on Piecewise Affine Trajectories with Range Measurements	Mahmood Rezaee Qotb Abadi, Luis Rodrigues* (Canada)
259	Optimal Investment in a Market with Borrowing and the Heston Volatility Model	Nuha Alasmi*, Bujar Gashi (United Kingdom)
102	The Gaussian Mixture Optimal Transport Ensemble Kalman Filter and its application to predict the capacity fade of lithium-ion batteries	Yi Li, Xue Luo* (China)
131	Stabilization of Nonlinear Systems by Neural Lyapunov Approximators and Sontag's Formula	Adriano Mele*, Alfredo Pironti (Switzerland)
264	Iterative Learning Control of a Pneumatically Driven Robot Joint	Rainer Nitsche*, Timo Heubach (Germany)

285	Fast and Adaptive Ground Target Tracking for Fixed Wing-UAV Based on Visual Servo Control	Yu Zhou, Yang Lingjie, Jie Li*, Xiangke Wang (China)
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Session S-07: Applied Artificial Intelligence

Session chair(s): Mujde Erol Genevois & Manabu Kano

Paper ID	Title	Authors
305	An XAI-Infused Multiclass MRI Brain Tumor Classification Using Deep Transfert Learning (DTL)	Hana Charaabi*, Amal Sayari, Ridha Hamdi, Mohamed Njah, Mohamed Ben SLima (Tunisia)
195	Fuzzy Q-Table Reinforcement Learning to Control Large State Spaces: A Case Study on Bitcoin Futures Trading	Zahra Ghorrati*, Kourosh Shahnazari, Ahmad Esmaeili, Eric T. Matson (USA)
428	Simulation Modeling for AI Rack Landing in Large Scale Datacenters	Richa Mishra*, Sarah Hanna, Richard Kaufmann, Sukwoo Kang (USA)
431	FPGA Implementation of Approximate Gaussian Mixture Model for Open-Set Recognition in Interface Control	Ryota Kashiwagi*, Takayuki Mukaeda, Keisuke Shima (Japan)
587	Classification of Degree of Degradation Around Scribe for Coil-Coated Metallic Samples Using Convolutional Neural Models	Pavel Rozsival, Petr Dolezel*, Bruno Baruque Zanon, Dominik Stursa (Czech Republic)
704	Reliability Assessment of Solder Ball Joints Using Finite Element Analysis and Machine Learning Techniques	Hakima Reddad*, M. Zemzami, N. El Hami, N. Hmina, N-Q. Nguyen (Morocco)

Session S-08: Special Session - Enterprise Resilience and Control Systems

Session chair(s): James H. Lambert, Davis C. Loose & Cody A. Pennetti

Paper ID	Title	Authors
135	Enterprise Resilience of a Maritime Container Port with Reinforcement Learning	Davis Loose*, Daniel C. Hendrickson, Thomas L. Polmateer, James H. Lambert (USA)
137	Security Audit Methodology for Embedded Hardware Devices of Enterprise Systems	Zachary Collier, Elvie Sellers, Davis Loose*, Igor Linkov, James H. Lambert (USA)
339	Performance Analysis of Supply Chains Using Discrete Event Systems Formalisms	Maroua Soumatia*, Jihan Rajeh, Saïd Amari (France)
171	Environmental Security and Resilience of Transportation System and Supply Chains of an Arid Region	DeAndre DeAndre, Johnson*, Benjamin D. Trump Benjamin, Trump, Megan C. Marcellin, Gigi Pavur, Davis Loose, Saddam Q. Waheed Saddam, Waheed, Thomas L. Polmateer, Igor Linkov, Venkataraman Lakshmi, John Cardenas, James H. Lambert (USA)
411	Connected Vehicle Data in Systems Modeling and Evaluation of Investments in Pedestrian Safety	DeAndre DeAndre, Johnson, Megan C. Marcellin*, Cody A. Pennetti, Rayshaun L. Wheeler, Collyn Clark, Jungwook Jun, James H. Lambert (USA)
423	Modeling Resilience of System Order for Investments in Environmental Justice and Social Vulnerability	Gigi Pavur*, Benjamin D. Trump Benjamin, Trump, Igor Linkov, Thomas L. Polmateer, James H. Lambert, Venkataraman Lakshmi (USA)
212	Logistics Humanitarian Culture and Information Systems: Key Variables for building Resilient Humanitarian Supply Chains – A Case Study approach exploring a European major NGO facing Covid crisis	Sylvie Michel*, Sylvie GERBAIX, MARC BIDAN (France)

Session S-09: Graphs and Networks

Session chair(s): Bill Goodwine & Dina Mikhaylenko

Paper ID	Title	Authors
407	Finding Important Nodes in Chordal Graphs	Mohammed LALOU*, Hamamache KHEDDOUCI (France)
331	Alternative Paths Computation for Congestion Mitigation in Segment-Routing Networks	Sébastien Martin, Youcef Magnouche*, Paolo Medagliani, Jérémie Leguay (France)
231	Robust Mirror Attacks on Cyber-Physical Systems	Dina Mikhaylenko*, Ping Zhang (Germany)
711	Using a Neural Network Trained Only on Integer Order Systems to Identify Fractional Order Dynamics in Networked Systems	Bill Goodwine*, Tan Chen (USA)

369	Assessing the Impact of Relocation on the Optimal Design of Electric Vehicle Sharing Systems	Christian Clavijo Lopez*, Mouna Kchaou Boujelben, Celine Gicquel, Khedaoudj Halimi (United Arab Emirates)
254	Connecting VRP Solutions to Homology Group Generators and Community Modularity of Morphologically Deformed Point Cloud	Guillaume Bouleux*, Lorraine Trilling, Kirill Sidorets (France)
182	A Direct Method for the Estimation of the Sparse and Latent Variable Components of a Gaussian Graphical Model	Ivor Cribben* (Canada)

Session S-10: Predictive and Optimal Control

Session chair(s): Ahmad Hably & Salvatore Rosario Bassolillo

Paper ID	Title	Authors
340	A Comparative Study of NMPC Strategies for Prioritized Multi-UAV Trajectory Tracking with Collision Avoidance in Agricultural Field Mapping Missions	Dora Novak*, Sihem Tebbani (France)
677	Validation of Adaptive Cruise Control Based on Model Predictive Control for Autonomous Vehicles in Real-Time System	Duc Tien Bui*, Duy Hung Nguyen, Zhengguo Gu, arno eichberger (Austria)
412	Reactive Planning MPC of Pusher-Sliders with Obstacle Avoidance and Imposed Velocity Profiles	Sander De Witte, Thomas Neve*, Tom Lefebvre, Guillaume Crevecoeur (Belgium)
151	Formation Control of Fixed-Wing UAVs Using MPC: Effect of Vehicle Speed	ÖZGE KARTAL ÖZÇELİK*, Halit Ergezer (Turkey)
128	Proposal of an Algorithm for Predicting the Potential of a Photovoltaic System	Ivana Bridova, Peter Brida*, Marek Moravcik, Ondrej Krejcar (Slovakia)
245	A Comparative Analysis of Meta-Heuristic Algorithms for Energy Management in Smart Grids	ASMA ACHNIB*, Altaf Badar (France)

Session S-11: Energy Control and Optimization

Session chair(s): Stefano Leonori & Mohit Makkar

Paper ID	Title	Authors
229	A Multi-Armed Bandit Approach for Electricity Reward of Smart Homes in a Smart Power Grid	Evangelos Spyrou*, Vassilios kappatos, Afroditi Anagnostopoulou (Greece)
494	Model-Based Detection of Data-Injection Cyber-Attacks on Wind Turbine Controllers	Alvaro Martin Gomez*, Leon Navarro Hilfiker, Rafael Wisniewski (Denmark)
162	Longitudinal-Transverse Parameter Control in MV Closed Circuit Using a Thyristor Voltage and Power Regulator	Elena Sosnina*, Alexey Kralin, Rustam Bedretdinov, Evgeny Kryukov, Daniil Gusev (Russia)
619	Model Predictive Control for a Retrofitted Diesel Methanol Dual Fuel Engine	Vasileios Karystinos*, George Papalambrou (Greece)
246	Improvement for Fuel Cell Power Systems by Short Circuit Energy Recovering	Jorge Carrascal García*, Raúl Mario del Toro Matamoros, Leandro González Rodríguez, Rodolfo Haber (Spain)
248	A Model-Based Heuristic for Minimum Energy Scheduling of Flexible Job-Shop Programs	Oludolapo Akanni Olanrewaju*, Kanyinda Kabuya, Ramirez L, Mora-Camino Felix (South Africa)

Session S-12: Special Session: Recent Advances in Multi-Robot Systems: Modeling, Optimization and Applications

Session chair(s): Rabah Ammour, Said Amari & Dimitri Lefebvre

Paper ID	Title	Authors
287	Consensus Approach Based on Negotiation and 2-Opt Optimization for MRTA Problems in a Decentralized Setting	Dimitri Lefebvre, Isabel Demongodin, Rabah Ammour*, Sara Hsaini, Moulay El Hassan Charaf (France)
338	Manipulability Analysis to Improve the Performance of a 7-DoF Serial Manipulator	Ali Kanso, Marco Schneider*, Rainer Müller (Germany)
507	Multi-Robot Bearing-Only Tracking of an Underwater Target Taking into Account the Sound Propagation Delay	Paolo Di Lillo*, Stefano Chiaverini, Gianluca Antonelli (Italy)

279	Decentralised Bio-Inspired Task Allocation for Mobile Robots, Application to Industrial Logistics	Arnaud BELHOMME*, François Guerin, Nicolas Kerthe, Florian GERMAIN (France)
661	Energy Management for Industrial Robots Based on AutomationML	Gregor Thiele, Valentyn Petrichenko* (Germany)
749	Safety-Driven Deep Reinforcement Learning Framework for Cobots: A Sim2Real Approach	Ammar Abbas, Shakra Mehak, Georgios Chasparis, John Kelleher, Michael Guilfoyle, Leva Maria Chiara, Aswin Ramasubramanian* (Ireland)

Session S-13: Special Session - Stochastic Systems and Control with Emerging Applications

Session chair(s): George Yin & Bozenna Pasik-Duncan

Paper ID	Title	Authors
207	Almost Sure Stabilization of Markovian Switched Linear Systems with Uncontrollable Subsystems	Shuo Yuan, Le Yi Wang, George Yin*, Qing Zhang (USA)
241	Exponential Stability of Stochastic Functional Differential Equations with Delayed Impulses	George Yin*, KY TRAN (USA)
452	Optimal Regulator for Linear Stochastic Systems with State-Delay and Random Time-Horizon	Nuha Alasmi*, Bujar Gashi (United Kingdom)
628	Stochastic Gradient-Based Extremum Seeking Control under Multi-Input and Output System Delays	Paulo Paulo Cesar Souza Silva, Paulo C. Pellanda*, Tiago Roux Oliveira (Brazil)
290	Mean-Field-Type Games Driven by Rosenblatt Processes	Tyrone E. Duncan, Bozenna Pasik-Duncan, Tembine Hamidou* (USA)
414	Prediction and Related Topics for a Scalar Linear Stochastic Equation with a Rosenblatt Process Noise	Tyrone E. Duncan*, Bozenna Pasik-Duncan (USA)

Session S-14: Scheduling and Supply Chain Management Problems

Session chair(s): Michael Short & Matthieu Godichaud

Paper ID	Title	Authors
770	Exact Resolution for the Unrelated Parallel Machine Scheduling Problem with Flexible Maintenance and Human Operators Planning	Meriem Touat* (France)
725	Enhancing Neural Network Predictability through Simulation-Based Analysis of Memory Accesses for Time-Triggered Tensor Acceleration	Aniebiet Micheal Ezekiel*, Yosab Bebawy, Roman Obermaisser (Germany)
220	On Probabilistic Timing Analysis of Fault-Tolerant Real-Time Systems Experiencing Random Errors	Michael Short* (United Kingdom)
311	Mathematical Formulations for the Offshore Mobile Charging Vessel Location and Unmanned Surface Vehicle Scheduling Problem	Bo Ren, haiying Liu, Yantong Li* (China)
760	MILP and Metaheuristic Approaches for HHCRSP with Optional Starting Point: Enhancing Efficiency in Home Healthcare	Leo SCHWARTZ*, Olivier Grunder, Amir HAJJAM EL HASSANI (France)
485	Pre-Positioned Inventory Model for Supply Chain Disruption Mitigation	Matthieu Godichaud*, Hasan Murat Afsar, Yassine Ouazene (France)
126	Active and Reactive Power Scheduling Optimization of Battery Energy Storage System to Support the Distribution System Operation	John Jefferson Antunes Saldanha*, Ademir Nied, Rüdiger Kutzner, Rodrigo Trentini (Brazil)

Session S-15: Fault Detection

Session chair(s): Meziane Ait Ziane & Alvaro Martin Gomez

Paper ID	Title	Authors
446	Hybrid-Ensemble Learning Based Fault Detection and Diagnosis of Chillers	Ravi Kiran Badathala, Venkateswara Rao Vajapeyayajula*, Ramesh Kumar Junnuri (India)
274	Fault Isolation in Loops of Linear Dynamic Networks	Lorinc Marton*, Wijaya Kurniawan (Romania)
111	Symbolic Regression-Based Hybrid Models for a Manufacturing Process	Seulki Han, Debasish Mishra, Krishna Pattipati, George Bollas* (USA)
196	Switched Unknown Input Interval Observer-Based Fault-Tolerant Tracking Control: Application to Vehicle Lateral Dynamics	Duc To NGUYEN, Said Mammam*, Dalil Ichalal, Mohand SMAILLI (France)

581	Model-Free Active Fault Tolerant Control for Sensor Fault	Meziane Ait Ziane, Michel Zasadzinski*, Cédric Join, Marie-Cécile Péra (France)
556	Fatigue Detection for the Elderly Using Machine Learning Techniques	Wiem Ben Ghazzi*, Zahra Kodja, BEN AZZOUNA Nadia (Tunisia)

Session S-16: Discrete Event Systems

Session chair(s): Carla Seatzu & Dimitri Lefebvre

Paper ID	Title	Authors
609	Discrete Abstractions for Manufacturing Logistics Optimization for the Food Service Industry	Anatoli Tziola*, Savvas Loizou (Cyprus)
356	From Reinforcement Learning to Reality: Generating Structured Text Logic Controller	Dimitri Renard*, RAMLA Saddem Ramla, David ANNEBICQUE, Mathieu Roisin, Bernard RIERA (France)
351	Discrete-Event Based Patient Flow Simulation of an Emergency Surgery Department	Alvin Combrink*, Petr Erik Moldan, David Johnsson, Martin Fabian (Sweden)
205	AN Algebraic Formulation of K-Step Opacity Problem in Labeled Petri Net Models	Amira Chouchane*, Mohamed Ghazel (France)
639	Reactive Real-Time Scheduling Using Simulation-Optimization and Evolutionary Algorithms	Engelbert Pasiëka*, Sebastian Engell (Germany)
508	Constraint Programming for Logic Controller Synthesis	Mathieu Roisin, Pierre-Alain YVARS*, Bernard RIERA (France)
272	Bisimulation Non-Interference Analysis of Bounded Petri Nets	Ning Ran*, Jinyuan Hao, Zhou He, Mauro Franceschelli, Carla Seatzu (China)

Session S-17: Transport Optimization

Session chair(s): Sébastien Martin & Ivor Cribben

Paper ID	Title	Authors
87	Feasibility of Intelligent Models for Analysis of Number of Vehicles Involved in Rural Crashes	Sina Shaffiee Haghshenas*, Giuseppe Guido, Sami Shaffiee Haghshenas, vittorio astarita (Italy)
96	Trajectory Optimization for Adaptive Informative Path Planning with Multimodal Sensing	Joshua Ott*, Edward Balaban, Mykel Kochenderfer (USA)
88	Artificial Intelligence-Powered Driver Behavior Analysis for Fuel Consumption Optimization: A Pathway to Greener Roads	Sami Shaffiee Haghshenas*, vittorio astarita, Sina Shaffiee Haghshenas, Giuseppe Guido (Italy)
389	Dynamic Hard Shoulder Running Lane Control	Rodrigo Castelan Carlson, Eduardo Rosa de Lima, Eduardo Müller, Felipe de Souza, Konstantinos Ampountolas* (Greece)
396	A MIP for a generalized open vehicle routing problem with pickup and delivery considering optional cross-dock	Ryan BELBACHIR, Walid BEHIRI*, Sana Belmokhtar-Berraf, Veronica BELMEGA (France)
621	Exploiting Data Acquisition Approaches in an Electric Vehicle Charging Scheduling Module	Henry Chen, Lambros Lambrinos*, Ryan Grammenos, Konstantinos Karagiannis, Elie Kfoury (Cyprus)
318	A Two Level Structure for Efficient Logistics in the Urban Airspace	Bruno Lamiscarre, Oludolapo Akanni Olanrewaju*, Alexandre Carlos Brandão Ramos, Mora-Camino Felix (South Africa)

Session S-18: Intelligent Control

Session chair(s): Buket Barkana & Aurelie A. Arntzen Bechina

Paper ID	Title	Authors
416	Safe Deep Reinforcement Learning Control with Self-Learned Neural Lyapunov Functions and State Constraints	Périclès Cocaul*, Sylvain Bertrand, Hélène Piet-Lahanier (France)
695	A Survey of AI-Based Models for UAVs' Intelligent Control for Deconfliction	Xuan-Phuc Phan Nguyen, Neno Ruseno, Fabio Suim Chagas, Aurilla Aurelie Arntzen Bechina* (Norway)
163	Reinforcement Learning for Autonomous Control of Articulated Vehicles in Roundabout Intersections	Daniel Attard*, Josef Bajada (Malta)
328	A Distributed Control Architecture for Sustainable Routing Decisions of Autonomous Vehicle Platoons Subject to Cyber Attacks	Domenico Famularo, Francesco Giannini, Giancarlo Fortino*, Giuseppe Franze' (Italy)

688	Modeling and Control of the Vitrover Robot for Weed Management in Precision Agriculture	Jorand Gallou, Martina Lippi*, Mathieu Galle, Alessandro Marino, Andrea Gasparri (Italy)
629	Robust Non-Singular Terminal Sliding Mode Control for Tendon-Driven Hand Exoskeleton: A Numerical Study	SUBHASH PRATAP*, Jyotindra Narayan, Yoshiyuki Hatta, Kazuaki Ito, Shyamanta Hazarika (India)

Session S-19: Artificial Intelligence

Session chair(s): Andreas Novak & Andreas Schwung

Paper ID	Title	Authors
190	Analysis of Clinical, Genetic, and Demographic Data for Prediction of Alzheimer's Disease with Machine Learning	Anita Petreska*, Saso Nikolovski, Gabriela Novotni, Blagoj Risteovski (Macedonia)
252	Estimation of Traffic Delay Due to Traffic Control Elements Using Bayesian Optimized Predictive Model for Heterogeneous Traffic Conditions	Pranjal Ranpura, Rajesh Gujar*, Vipin Shukla (India)
404	Diabetic Disease Detection using Machine Learning Techniques	Vincenzo Dambra, Michele Roccotelli*, Maria Pia Fanti (Italy)
625	Explainable AI for Retinal Pathology Detection in OCT Images	Zainab HADDAD*, Zgolli Hsouna, Sidibé Désiré, Tabia Hedi, Khelifa Nawres (Tunisia)
132	Deep Reinforcement Learning for Hyper-Parameter Optimization in the Context of Capacity Management of SAP Enterprise Applications	Maria Chernigovskaya*, Andrey Kharitonov, Abdulrahman Nahhas, Klaus Turowski (Germany)
213	Streamlined Video Object Detection with YOLOX YOLOV5 YOLOV7 and YOLOV8	Mohajeran Seena*, Ke Hannah, Li Michelle, Yu Bai (USA)
544	AI-Driven Strategies for Precision and Efficiency in Optimising Medical Latrogeny Detection	Sarah Ben Othman*, Faiza Ajmi, Bertrand Decaudin, Pascal Odou, Chloé Rousselière, Etienne Cousein, Slim Hammadi (France)

Session S-20: Control Design Methods (Part 1)

Session chair(s): Shinji Hokamoto & Bahram Shafai

Paper ID	Title	Authors
308	Memory-Based Global Iterative Linear Quadratic Control	Daniel Nikovski*, Junmin Zhong, William Yerazunis (USA)
142	Chattering-Free Sliding Mode Control for Position and Attitude Tracking of a Quadrotor	Sara Gomiero*, Karl von Ellenrieder (Italy)
558	Quadrotor Control Using a Multilayer MPC-MHE Scheme Based on LPV and Feedback Linearization Approaches	Mohamed Achraf Senoussi, Vicenç Puig*, Mohamed Boumechraz (Spain)
438	Safe Human Robot-Interaction Using Switched Model Reference Admittance Control	Chayan Kumar Paul*, Bhabani Shankar Dey, Indra Narayan Kar (India)
676	Spacecraft Formation Flying Control with Almost Global Exponential Convergence	Eduardo Espindola Lopez, Yu Tang* (China)
500	Finite-Horizon Optimal Feedback Control Design Illustrated by Point Mass and Gravity Pendulum Cases	Viktor Dodonov* (Finland)
570	Stabilization in Finite Time for a Thermal System Described by a Parabolic Partial Differential Equation in a 2D Geometry	Sara fakih, Laetitia PEREZ, Laurent AUTRIQUE* (France)

Session S-21: Multi-Objective Optimization

Session chair(s): Antonio Ramos & Naoki Uchiyama

Paper ID	Title	Authors
538	Enhancing Decision-Making and Production Monitoring in Assembly Lines: Visualizing Performance Evolution Using KPI Trajectories	Camélia Bellepeau*, Victor Romero, Guillaume Martin, Frédérick Benaben, Benoît Montreuil, Coralie Courrèges (France)
422	The Impact of Equipment Specifications on the Efficiency of Visual Inspection Using Unmanned Aerial Vehicles	Weitong Wu*, Yuki Funabora, Shinji Doki, Kae Doki (Japan)
761	Optimization of Schedule of Unmanned Minibus Connected Metro Considering Changes in Arrival Distribution and Passenger Flows	Shuai Shao, baiyu ma*, tong wang, QianLi Ma (China)
295	Bi-Objective Unrelated Parallel Machine Scheduling	Meriem TOUAT*, Karima BENATCHBA,

	Problem under Availability and Energy Constraints	SAHNOUNE_ANNIS HANED, Mohammadmohsen Aghelinejad (France)
312	Mathematical Models for the Bi-Objective Integrated Delivery and Installation Routing Problem	Shanshan Zhou, Zheng Wang, Yantong Li* (China)
613	Walking Optimization Algorithm for Humanoid Robots Using Genetic Algorithm	Fabio Suim Chagas, Luis Luis David Peregrino de Farias, Aurilla Aurelie Arntzen, Antonio L. L. Ramos*, Paulo Fernando Ferreira Rosa ferreira rosa (Norway)
719	Production Planning and Control Methodology for a Flexible Workshop Problem Subject to Sustainability Constraints	Lingxin Wang, ABBOU Rosa*, Catherine Da Cunha (France)

Session S-22: Control of Nonlinear Systems

Session chair(s): Antonio Fazzi & Luigi Emanuel di Grazia

Paper ID	Title	Authors
243	Modeling Simulation and Control of an Automatic Solid Material Feeding System	Shiv Prakash Dadhich, Mohit Makkar*, Kamal Kishore Khatri (India)
354	Radial Basis Function Neural Network-Based Super-Twisting Blade Pitch Controller for the Floating Offshore Wind Turbine	Flavie Didier*, Yong-Chao Liu, Salah Laghrouche, Daniel Depernet (France)
555	Simulation of Nonlinear Systems Trajectories: Between Models and Behaviors	Antonio Fazzi*, Alessandro Chiuso (Italy)
69	Explaining Data-Driven Control in Autonomous Systems: A Reinforcement Learning Case Study	Mengbang Zou, Adolfo Perrusquía*, Weisi Guo (United Kingdom)
667	Hybrid Implicit Multilinear Simulation Using Difference Algebraic Equations Reordering by Sparsity Patterns	Torben Warnecke*, Gerwald Lichtenberg (Germany)
724	A dynamic optimization approach to steady-state input allocation for nonlinear redundant systems	Roberto Masocco*, Lorenzo Tarantino, Sergio Galeani, Mario Sassano (Italy)
633	Lateral Control of Hybrid Drones: Near-Optimal Power Disturbance Aware Policy	Miroslav Kosanic*, Marija Ilic (USA)

Session S-23: Modeling and Simulation with applications

Session chair(s): Elisa Mostacciolo & Davis Loose

Paper ID	Title	Authors
576	Modeling the Influence of the Navigation Depths Increase Upon Riverbeds, Banks, Fairways, and Dikes. a Case Study in the Black Sea	Maria Cheveresan, Mihai Valentin Stancu, Daniela Sarbu, Adrian Maizel, Romeo Soare, Alina Barbulescu* (Romania)
690	Modeling, Analysis and Optimization of Multicopter Power Consumption	Finn Matras*, Frida Xiang Nordås Årsandøy, Morten Dinhoff Pedersen (Norway)
262	Convolutional Neural Network to Forecast Complex Systems: The Nitrogen Oxides Concentration Case	Sara Raccagni, Lucia Sangiorgi*, claudio carnevale, Sabrina De Nardi (Italy)
337	SVAIR: An Approach to Model COVID-19 with Vaccination	Siddhartha Upadhyay, Soudeep Chowdhury, Krishanu Nath*, Manas Bera (India)
193	Novel Virtual Sample Generation Approach Using Cubic Spline Interpolation Based Autoencoder for Industrial Soft Sensing under the Condition of Limited Samples	Peng-Fei Wang, Yuan XU, Qunxiong ZHU, Yan-Lin He* (China)
717	Safeguarding Adaptive Methods: Global Convergence of Barzilai-Borwein and Other Stepsize Choices	Hongjia Ou*, Andreas Themelis (Japan)
223	Probability of the Share Price Going Beyond the Established Corridor	Sergei Semakov* (Russia)

Session S-24: Learning Systems

Session chair(s): Bozenna Pasik-Duncan & Rasha Al Jassim

Paper ID	Title	Authors
653	IoT Sensor Selection in Cyber-Physical Systems: Leveraging LargeLanguage Models As Recommender Systems	Mohammad Choib*, Moncef Garouani, Mourad Bouneffa, Yasser Mohanna (France)

659	Machine Learning for Crowd-Sourcing a Social Media Data Source to Improve Response and Recovery after the Earthquake Disaster	Busra Yesilbas*, Burak Parlak, Tankut Acarman (Turkey)
230	Optimizing Patient Triage in Emergency Department Reception a Hybrid Algorithm Approach	Amjad EL KHATIB*, Ahmed Nait Sidi Moh (France)
530	XAI Based Feature Selection for Gestational Diabetes Mellitus Prediction	Alia MAALOUL*, Meriam JEMEL, BEN AZZOUNA Nadia (Tunisia)
666	Composite Deep Learning Model with Augmented Features for Accurate Animal Sound Detection and Classification	Dilip Singh Sisodia*, Mihir Kumar Singh, Ishaan Singhal (India)

Session S-25: Control Design Methods (Part 2)

Session chair(s): Edward Boje & Fadwa Oukhay

Paper ID	Title	Authors
715	Enhancing Robustness: Delay-Based Control and Observer Strategies for Tilt-Rotor Quadrotors	David Nieto-Hernandez*, Julián-Alejandro Hernández-Gallardo, Liliana Felix, César Fernando Méndez-Barrios (Mexico)
509	Stabilizing Second-Order Non-Minimum Phase Systems Via PDI Controller	Julián-Alejandro Hernández-Gallardo*, César Fernando Méndez-Barrios, Jesús-Enrique Escalante-Martínez (Mexico)
564	Subdivision of Nonlinear Systems into LPV and Uncertain Linear Subsystems for Robust Control	Zoltán Tézely*, Bálint Kiss (Hungary)
94	Quantitative Feedback Design of W-Domain Digital Controllers	Edward Boje* (South Africa)
110	Event-Triggered Fault-Tolerant Tracking Control for Uncertain Nonlinear Time-Delay Systems with Abrupt Non-Affine Faults	zeyang li, ZhiWen Zhao, Xifeng Gao*, He Chuan Sun (China)
638	A Novel Method to Design Preform Shape for Robo-Forming	Srivardhan Reddy Palwai*, Sahil Bharti, Anuj Tiwari, Hariharan Krishnaswamy (India)
146	Adaptive Control of Melt Pressure in Polymer Extrusion Processes Using Extremum-Seeking Control	Yasith Sanura Perera, Jie Li, Chamil Abeykoon* (United Kingdom)

Session S-26: Special Session - Data driven approach for modelling, control and optimization of cyber-physical systems

Session chair(s): Carla Seatzu & Taurai Hungwe

Paper ID	Title	Authors
319	Least-Cost Firing Sequences Estimation in P-Time Labeled Petri Nets Systems	Clément Lecomte*, Patrice Bonhomme (France)
361	Safe and Secure Cyber-Physical-Human Systems: State of the Art on Threats and Countermeasures	Laura Filardo, Graziana Cavone*, Federica Pascucci (Italy)
397	Enhancing Predictive Analytics in Semiconductor Manufacturing: A Deep Learning Approach for Overall Equipment Efficiency Estimation	Filippo Boni, Riccardo De Monte, Yao Yang, Natalie Gentner, Joon Khim Low, Gian Antonio Susto* (Italy)
590	Data-Driven Safety Controller Synthesis for Unknown Systems with Wireless Communication Networks	Omid Akbarzadeh*, Ameneh Nejati, Abolfazl Lavaei (United Kingdom)
731	Integrating Deep Neural Network and Optimization Algorithm for Superior User Comfort and Energy Efficiency in Smart Home	Junaid Khan, Umar zaman, Eunkyoo Lee, Kyungsup Kim* (Korea, South)
758	Grey-Box Recursive Parameter Identification of a Nonlinear Dynamic Model for Mineral Flotation	Rodrigo A. González*, Paulina Quintanilla (Netherlands)

Session S-27: Applied Optimization

Session chair(s): Richa Mishra & Yassine Ouazene

Paper ID	Title	Authors
355	High-Dimensional State Estimation Using a Combinatorial Approach: Application to Finance	Jérémy Bellina*, Didier Georges, Isabelle GIRERD-POTIN (France)

474	Research on Electronic Map Registration Method Based on Minimum Offset of Corner Points	Xiaofan Wang*, Junjie Zhu, Zheng Liu, Dong Ming Sun, Jie Yao (China)
317	Bernstein Least Squares Modeling of Convergent Affine Bounds for Optimizing Control Functions	Tareq Hamadneh*, Ibraheem Abu Falahah, Mohammad D Hamadneh (Jordan)
71	Optimizing dynamic pricing problem under multinomial demand models using a convex nonlinear programming approach	Mourad Terzi*, Yassine Ouazene, Alice Yalaoui, Farouk Yalaoui (France)
348	A Novel Superstructure-Based Approach to Batch Process Scheduling Problems	Aadil Bharucha, SHAMIK MISRA, Ravindra D. Gudi* (India)
127	Optimization of Quantum Systems Emulation via a Variant of the Bandwidth Minimization Problem	M. Yassine Naghmouchi*, Joseph Vovrosh, Wesley da Silva Coelho, Alexandre Dauphin (France)
425	To grow or fluctuate: Optimal paths to demographic equilibria	Stefan Wrzaczek, Gustav Feichtinger, Thomas Fent, Andreas NOVAK* (Austria)

Session S-28: Linear Systems

Session chair(s): Ixbalnak Torres & Davis Loose

Paper ID	Title	Authors
199	Stabilization of Input Derivative Positive Systems and Its Utilization in Positive Singular Systems	Bahram Shafai*, Fatemeh Zarei, Anahita Moradmand (USA)
255	Practical Aspects of Homomorphic Encryption Schemes for Dynamic Feedback Controllers	Moritz Fauser, Ping Zhang* (Germany)
218	Secure State Estimator for Uncertain Discrete-Time Linear Systems Based on Set-Valued Consistency Techniques	Nacim MESLEM*, Ahmad Hably, Nacim RAMDANI (France)
145	Integral Linear Quadratic Regulator for Inverted Pendulum System Actuated by a Step Motor	Hiep Dai Le, Tamara Nestorovic* (Germany)
138	Equivalent Circuit Model of a Real Agrirobot Cable-Way Control System	Stefano Mattei, Stefano Leonori*, Fabio Massimo Frattale Mascioli (Italy)
712	Research of the Possibility of Using a Neural Network in the Signal Filtering Instead of Adaptive Filters	Kirill Shabanov, Sergey Vlasov, Dmitrii Dobribors* (Germany)

Session S-29: Operational Research

Session chair(s): Sina Shaffiee Haghshenas & Nhan-Quy Nguyen

Paper ID	Title	Authors
281	Integer Linear Programming for Automated Guided Vehicles Path Planning in Container Terminals	Karim Terfasse, Ghassen CHERIF*, Marie-José Huguet (France)
324	Supplier Selection Considering Flexibility, Order Splitting, and Uncertainty of Lead-Times	Oussama Ben-Ammar*, Belgacem Bettayeb, Ilhem slama, Alexandre Dolgui (France)
336	The Multi-Commodity Flow Problem: Double Dantzig-Wolfe Decomposition	Fan Zhang, Wang Jiazheng, Mathieu Lacroix, Roberto Wolfler Calvo, Youcef Magnouche, Sébastien Martin* (France)
139	Implicit Attitudes towards Risk: Influences on Newsvendor Inventory Decisions	Yvonne Badulescu*, Felicia Soulikhan, Naoufel Cheikhrouhou (Switzerland)
762	Seafood closed-loop supply chain network design	Hamza Chokri*, Issam NOUAOURI, H. Allaoui (France)
121	Enhancing Emergency Department Efficiency: A Particle Swarm Optimization Approach	Khalil Bouramtane*, Said Kharraja, Jamal Riffi, OMAR EL BEQQALI (France)
398	Quantum Solution for Solving the Bin Packing Problem	Samuel DELEPLANQUE, Amina EL YAAGOUBI*, Amélia Durbec (France)

Session S-30: Optimal Control

Session chair(s): Dmitrii Dobriborsci & Marwa Ben Ali

Paper ID	Title	Authors
505	Model-Based Reinforcement Learning Experimental Study for Mobile Robot Navigation	Dmitrii Dobriborsci*, Ilia Chichkanov, Roman Zashchitin, Pavel Osinenko (Germany)
120	Integrated Design of Optimisation and Inverse Dynamics Control for Home Heating Systems	Cameron Philip Draycott Downing*, John Counsell (United Kingdom)
539	Artificial Neural Network-Based Wake Steering Control under the Time-Varying Inflow	Yizhi Miao*, Mohsen Soltani, Amin Hajizadeh, Silvio Simani (Denmark)
405	Data-Driven Adaptive Dynamic Programming for Nonlinear Systems with State and Input Constraints	Jianfeng Wang, Ping Zhang*, Yan Wang, Zhicheng Ji (Germany)

657	On Linear-Quadratic Optimal Control Problems for Descriptor Systems with a Time Delay	Galina Kurina* (Russia)
600	A First-Order Approach for Optimal Control of Nonlinear Dynamical Systems	Yun-Jung Kim, Jin Choi, Jiwoo Choi, Jong-Han Kim* (Korea, South)
537	Optimal Energy Management Strategy for a Solid Oxide Fuel Cell in a H2 Hybrid Vehicle	Marin POUJOL*, Guillaume Colin, Alain Charlet (France)

Session S-31: Robotics with Applications (Part 1)

Session chair(s): Ozan Kaya & Dagmar Meyer

Paper ID	Title	Authors
504	Programming Mobile Robots in an Educational Context: A Hardware-In-The-Loop Approach	Laiany Brancalião, Mariano Alvarez, João Alexandre Coelho, Miguel Conde, Paulo Costa, José A. Gonçalves* (Portugal)
595	System Requirements and Review for the Operation of a Tethered Drone with an Autonomous Vehicle	James Pickering* (United Kingdom)
641	Robot-Based Incremental Forming: Springback Effect Compensation Model for Various Materials	Walid Shaker*, Alexandr Klimchik (United Kingdom)
329	Predictive Intention Recognition Using Deep Learning for Collaborative Assembly	Khansa Rezik*, Nishant Gajjar, José Grimaldo da Silva Filho, Rainer Müller (Germany)
680	A Comparison of RRT, APF, and PSO-Based RRT-APF (PS-RRT-APF) for Collision-Free Trajectory Planning in Robotic Welding	Ozan Kaya*, Lars Tingelstad (Norway)
560	Pursuit-Evasion Game in a Bounded Game Area Using Deep Reinforcement Learning and Self-Play	Ahmad Hably*, Hassene Seddik, Chiraz Ben Jabeur (France)
519	Enhanced Computational Technique for Stiffness Matrix Identification of Robotic Manipulator Components	Alexandr Klimchik*, Paul Eldho, Hariharan Krishnaswamy, Anatol Pashkevich (United Kingdom)

Session S-32: Engineering with Applied Neural Networks

Session chair(s): Merve Gurbuz Caldag & Müjde Erol Genevois

Paper ID	Title	Authors
95	Machine Learning Approach of MHD Stokes Flow in a Lid-Driven Cavity	Merve Gurbuz-Caldag*, Bengisen Pekmen Geridonmez (Turkey)
85	Cash Demand Prediction Problem Using Econometric and Computational Intelligence Forecasting Models	Michele Cedolin, Müjde Erol Genevois* (Turkey)
745	Tailored Transformations for Constraint Satisfaction in Learning of Parametric Controllers for Nonlinear Systems	Lukas Markolf*, Olaf Stursberg (Germany)
154	Efficient Calibration of Pneumatic Multi-Hole Probes Using Artificial Neural Networks: A Time and Cost-Effective Approach	Mohsen Assadi*, Reyhaneh Banihabib, Herwart Hoenen (Norway)
275	Least Squares Solution for Training of Two-Layer Quadratic Neural Networks with Applications to System Identification	Luis Rodrigues* (Canada)
334	Design of Neuro-Controllers for Nonlinear Continuous-Time Systems Using Evolutionary Algorithm	Ivan Sekaj, Ivan Kenicky, Filip Zubek, Jaromír Skirkanič* (Slovakia)

Session S-33: Special Session - Advances in robotic navigation in cluttered and hostile environments

Session chair(s): Valerio Scordamaglia & Giuseppe Franzè

Paper ID	Title	Authors
381	Optimal Trajectory Planning for UAV Formation Using Theta* and Optimal Control	Gennaro Raspaolo*, Immacolata Notaro, Egidio D'Amato, Luciano Blasi (Italy)
454	Terrain Topology-Informed Motion Planning for Tactical UGVs	Jyotirmoy Mukherjee, Giri Kumar, Hannah White, Andrea L'Afflitto*, Corina Sandu (USA)
540	Towards Avalanche Victims Detection: Integrating Kalman Filter and Consensus Methods in Aircraft Formations for Post-Avalanche Scenarios	Salvatore Rosario Bassolillo* (Italy)

542	Set-Theoretic Approach for Autonomous Tracked Vehicles Involved in Post-Disaster First Relief Operations	Valerio Scordamaglia*, Alessia Ferraro, Francesco Tedesco, Giuseppe Franze' (Italy)
686	A Facilitated Construction Robot Programming Approach Using Building Information Modelling	Michael Terzer*, Flatscher Tobit, Marco Magri, Simone Garbin, Julius Emig, Andrea Giusti (Italy)

Session S-34: Engineering with Applied Neural Networks

Session chair(s): Nurcan Alkis Bayhana & Afef Gueidi

Paper ID	Title	Authors
188	AI Pair Programming Acceptance: A Value-Based Approach with AHP Analysis	Murat Tahir Caldag* (Turkey)
211	A Proposal for a Conceptual Framework Challenging the Complexity of Ethical and Responsibility Issues in Algorithms Systems	Sylvie Michel*, Marc Bidan, Sylvie Gerbaix (France)
206	Real-Time Ventilation Detection for Feedback and Guidance During Newborn Resuscitation	Øyvind Meinich-Bache*, Hannah Håland, Anita Yeconia, Rafal Paprocki, Solveig Haukås Haaland, Øystein Gomo, Thomas Haukland, Siren Irene Rettedal, Sara Brunner, Esto Mduma, Hege Ersdal (Norway)
671	Combining Dense and Sparse Rewards to Improve Deep Reinforcement Learning Policies in Reach-Avoid Games with Faster Evaders in Two vs. One Scenarios	Jefferson Silveira, Kalena McCloskey, Camille Alain Rabbath, Craig Williams, Sidney Givigi* (Canada)
292	Comparing Software Development Life Cycle Models with Multi-Criteria Decision Making Approach	Nurcan ALKIS BAYHAN*, Esra OZMEN, Ersin Karaman (Turkey)
14	Research on Path Planning by a Tangent Point Search	Ge Tai, Chaoyi Dong*, Kang Zhang, Shuai Xiang, Tianyu Yuan, Haoda Yan, Xiaoyan Chen (China)

Session S-35: Special Session - Recent Advances for Resource Allocation Problems

Session chair(s): Saïd Amari & Dimitri Lefebvre

Paper ID	Title	Authors
125	TRustPN: Transforming Rust Source Code to Petri Nets for Checking Deadlocks	Kaiwen Zhang, GuanJun Liu* (China)
185 (v)	Optimization of Product Remanufacturing Process across Multifactories with Reinforcement Learning	Qiqi Zeng, Xiwang Guo, Jiacun Wang*, Shujin Qin, Jinrui Cao, Gina Tang (USA)
607	Spline-Based Input Allocation on an Overactuated Tilting and Twisting Unmanned Aerial Vehicle	Shima Akbari*, Giorgio Manca, Sergio Galeani, Mario Sassano (Italy)
310	An Initial Framework for the Less-Than-Truck-Load Problem: Order Allocation and Planning	Onur Ozturk*, Najat BARA (Canada)
434	A NoSQL-Based Approach for Data Resource Allocation Problems: Embedded Systems Use Case	Afef Gueidi*, Hamza Gharsellaoui, Samir BEN AHMED (Tunisia)
577	State Space Reduction for Automated Manufacturing Systems With Unreliable Resources Using Partial Order Technique	Zexi Huang, Lin Chen, Gaiyun Liu*, Kamel Barkaoui (China)
370	Linear Min-Plus System Control under Generalized Mutual Exclusion Constraints: Application to Managing the Replenishment Policy of a Supply Chain in the Presence of Disturbances	Syrine Bouazza*, Saïd Amari, Sid-Ali Addouche (France)

Session S-36: Robotics with Applications (Part 2)

Session chair(s): Andreas Schwung & Hideo Furuhashi

Paper ID	Title	Authors
603	A Multi-Stage Single-Point Incremental Sheet Forming for Enhanced Homogeneous Thickness Distribution	Ghadeer Issa*, Karam Almaghout, Alexandr Klimchik (Russia)
54	Model-Based Reinforcement Learning for Sim-To-Real Transfer in Robotics Using HTM Neural Networks	Mochammad Rizky Diprasetya, Ali Nafih Pullani, Dorothea Schwung, Andreas Schwung* (Germany)
598	Distributed Set-Based Localisation in Autonomous Vehicles	Marc Facerias, Vicenç Puig*, Alexandru Stancu (Spain)

506	Case Study: Autonomous Mobile Robot Exploration and Navigation in Unknown Maze Environment	Felix Gatti, Felipe Alberto Rojas Leon, Gil Ariane Therese Angeles, Ruben Andres Contreras Maestre*, Dmitrii Dobriborsci (Germany)
720	Enhancing Robotic Arm Trajectory Tracking Via Hybrid Weightless Swarm Algorithm and Iterative Learning Control (WSA-ILC)	Yu Dou*, Emmanuel Prempain (United Kingdom)
104	Development of a Multi-Finned Omni-Directional Mobile Underwater Robot	Masayuki Kuno, Tatsunari Tsujimoto, Takumi Asada, Takao Oki, Hideo Furuhashi* (Japan)
503	Prototyping and Control of an Educational Manipulator Robot	João Alexandre Coelho, Laiany Brancalião, Mariano Alvarez, Paulo Costa, José A. Gonçalves* (Portugal)

Session S-37: Learning Systems

Session chair(s): Jens Christian Will & Belkacem Chikhaoui

Paper ID	Title	Authors
309	Adaptive Velocity Estimators for Learning Control	Daniel Nikovski*, William Yerazunis (USA)
174	A New Sentiment Analysis-Based Approach for the Prediction of Users Beliefs	Rakif Pathan, Sadia Abdulhalim, Belkacem Chikhaoui* (Canada)
117	Adaptive Dispersion Network of Multiple Drones Based on Reinforcement Learning	Ryota Maikuma, Tenta Kawai, Mai Bando, shinji hokamoto* (Japan)
631	System-Oriented Learning: An Efficient DNN Learning Approach for Koopman Bilinear Representation with Control	Ketong Zheng*, Peng Huang, Andrés Villamil, Jonathan Casas, Gerhard Fettweis (Germany)
689	Transfer Learning Based on Generative Adversarial Networks: Application to Chemical Reaction Process	Ryoya Yoshida, Buyun Wang, Shota Kato, Manabu Kano* (Japan)
464	Transient Recovery of Energy Storage Balance in DC Microgrids with MARL-Based Power Control	Michael Short*, Mudhafar AL-SAAFI (United Kingdom)

Session S-38: Control Theory

Session chair(s): Claudia Califano & Andreas Novak

Paper ID	Title	Authors
493	Geometric Relationships in Constant Output Control	Adam Kastner*, Lutz Groell, Veit Hagenmeyer
432	Integral State Feedback Control Based Vertical Landing of Reusable Rockets	Harshit Dave, Shrestha Saxena, Joyjit Mukherjee*
672	Global Observability and Identifiability of Nonlinear Systems with Inputs Using Interval Arithmetic	Michelle Rosik*, Robert Dehnert, Laura Ackerschott, Regina Deisling, Bernd Tibken
444	Robust Controller Design for Quadrotor Using Model Predictive Control and Adaptive Super Twisting Sliding Mode Control	Shunsuke Komiyama*, Kenji Uchiyama, Kai Masuda
647	Missile Guidance on Stationary Target with Doppler Information Only	Liat Peled-Eitan, Ilan Rusnak*
566	The Extended Wahba's Problem in Dual and Multi-Dual Algebras	Daniel Condurache*, Mihail Cojocari

Session S-39: Internet and Cloud Computing

Session chair(s): Taurai Hungwe

Paper ID	Title	Authors
166	Semi-Optimal MicroService Placement in the Fog with Quality of Service (QoS) Awareness	Amira Rayane BENAMER* (France)
496	Cloud-based controller architecture for the testing of conventional and model predictive room heating controllers in a real-world environment	Philipp Althaus*, Sascha Johnen, André Xhonneux, Dirk Müller (Germany)
627	6D edge pose detection for powder-printed parts using Convolutional Neural Networks and point cloud processing	Chandra Yuvesh Aubeeluck*, Michael Schall, Dmitrii Dobriborsci, Matthias Hien (Germany)
187	Integration of Cloud Computing and Software as a Services for business management: A review of the literature	Alberto Oviedo* (El Salvador)
637	Modelling Autonomous Mobile Robot Interaction	Andrzej M.J. Skulimowski*, Wojciech Szulc

	with IIoT Environments	(Poland)
393	Application of Artificial Intelligence in Digital Forensic Readiness Using Intelligence Reports	Taurai Hungwe*, Hein Venter (South Africa)

Session S-40: Diagnosis Techniques

Session chair(s): Charles Vincent & Moussa Boukhniifer

Paper ID	Title	Authors
314	The Use of ChatGPT for Online Health Information Seeking in Hungary	Ádám Konstantin Rojkovich* (Hungary)
343	Sensorless Control of Synchronous Reluctance Machine for Electrical Vehicle Using Extended Kalman Filter	Moussa Boukhniifer*, Olaoluwa Demola ALADETOLA, Dehbia Ouamara, Kondo Hloindo Adjallah (France)
122	A Novel PIML Architecture with Innovative Learning Paradigm Applied in Battery Prognostics	Weikun Deng*, T. P. Nguyen Khanh, Christian Gogu, Kamal Medjaher, Jérôme Morio, Dazhong Wu, Le Hung (France)
118	Fault Simulation and Identification of an Electrohydraulic System by Using Fault Emulation	HAKAN GUNER*, Seniz Ertugrul, Gökhan Tansel Tayyar (Turkey)
238	New Qualitative and Informative Approach to Evaluate Process Plant Operation Stability with Clustering Analysis	Tetsuya Wada*, Yoshiyuki Yamashita (Japan)
708	DFIG Imbalance Rotor Fault Diagnosis Using Signal Processing Tools	Med Salah Channouf*, Walid Touti, Khmais Bacha (Tunisia)

Session S-41: Image Processing

Session chair(s): Nizar Bouguila

Paper ID	Title	Authors
20	Hyperspectral Data Volume Restoration Using Nonlinear Vector-Valued Reaction-Diffusion Based Filtering Scheme	Tudor Barbu* (Romania)
364	Skin Color-Based Frontal Face Detection and Gender Classification	Daghan Dogan, Tankut Acarman* (Turkey)
235	A Nonparametric Bayesian Framework for Multivariate Libby-Novick Beta Mixture Models	Niloufar Samiee, Narges Manouchehri*, Nizar Bouguila (Canada)
421	Area-Wise Augmentation for Segmentation Datasets from 3D Scanned Data Used in Visual Navigation	Marin Wada, Yuriko Ueda, Miho Adachi, Ryusuke Miyamoto* (Japan)
486	One to Segment Them All: A Data-Based Domain Generalization Approach for Solar Module Segmentation Using Thermal UAV Images	Zoubir Barraz*, Imane Sebari, Kenza Ait El Kadi, Nassim Lamrini, Ibtihal Ait Abdelmoula (Morocco)
392	Recognize and Decode QR Codes from Images	József Udvaros, László Szabó* (Hungary)

Session S-42: Special Session - Optimization and control for fusion plasmas

Session chair(s): Adriano Mele & Luigi E. di Grazia

Paper ID	Title	Authors
130	Design of a Novel Plasma Shape Controller for the TCV Tokamak	Adriano Mele*, Alessandro Tenaglia, Daniele Carnevale, Stefano Coda, F. Felici, Cristian Galperti, Antoine Merle, Alfredo Pironti, Olivier Sauter (Switzerland)
129	Dynamic Steady-State Coil Current Allocation for Plasma Shape Control: A Study on the TCV Tokamak	Alessandro Tenaglia*, Roberto Masocco, Adriano Mele, Daniele Carnevale, Stefano Coda, F. Felici, Sergio Galeani, Antoine Merle, Mario Sassano (Italy)
133	Iterative Learning Optimisation and Control of MAST-U Breakdown and Early Ramp-Up Scenarios	Luigi Emanuel di Grazia*, Charles Vincent, Massimiliano Mattei, Federico Felici, Lucy Kogan, Adriano Mele (Italy)
158	SPACE: A New Simulation Suite for EAST Plasma Control	Zhengping Luo* (China)
73	A Modular Approach Based on a Deep Reinforcement Learning Technique for the Plasma	Gaetano Tartaglione*, Marco Ariola, Luigi Emanuel di Grazia (Italy) 77145*, 11510, 106462

	Magnetic Control in DEMO	
236	Error Field Control at JET	lidia Piron* (Italy)

Session S-43: Combinatorial and Applied Optimization

Session chair(s): Sana Belmokhtar-Berraf & Meriem Touat

Paper ID	Title	Authors
697	Tackling the Generalized Max-Mean Dispersion Problem with a Hybrid Population Method	Hifi Mhand*, Juntao Zhao (France)
591	A Flow-Based Formulation for the Multi-Sink Clustered WSN	Thiago Giachetto de Araujo*, Rafael Castro Andrade, Andréa Cynthia Santos (France)
344	A Cooperative Method for Solving the Set-Union Knapsack Problem	Juntao Zhao, Hifi Mhand* (France)
302	An Adaptive Quantum-Based Genetic Algorithm Feature Selection for Outlier Detection	Tin Pham*, Bijan Raahemi (Canada)
455	Enhancing Tourism Performance in Oman a Case Study Using Correlation-Guided Linear Genetic Programming Decision Tree (C-LGPDT)	Rasha Abdulwahhab* (Oman)
502	Energy Efficiency of Single Stage Production-Inventory System	Hong Nguyen Nguyen*, Matthieu Godichaud, Lionel Amodeo (France)

Session S-44: Intelligent Systems

Session chair(s): Amira Rayane Benamer & Maria Pia Fanti

Paper ID	Title	Authors
177	Transparent Use-Case Management for AIoT Devices	Jens Christian Will, Hanno Homann* (Germany)
665	Driver Style Recognition Based on Vehicle Dynamic Data	Abdelmoudjib Benterki, choubeila maaoui*, Moussa Boukhniher, Vincent Judalet (France)
655	Modeling and Simulation of Mechatronics Equipment for a Digital Twin-Enabled Demonstrator	Chiara Nezzi*, Matteo De Marchi, Erwin Rauch, Renato Vidoni (Italy)
341	Rigorous Floating-Point to Fixed-Point Quantization of Deep Neural Networks on STM32 Micro-Controllers	Dorra Ben Khalifa*, Matthieu Martel (France)
76	Comparative Analysis of Indirect Adaptive Controller Tuning Strategies Using Surrogate and Model-Based Techniques Applied to the Omnidirectional Mobile Robot	Alam Gabriel Rojas-López*, Miguel Gabriel Villarreal-Cervantes, Alejandro Rodríguez-Molina, Jesús Aldo Paredes-Ballesteros (Mexico)
225	Enhancing Intersection Identification for Autonomous Vehicles: A Hash-Based Approach	Giuseppe Olivieri, Gaetano Volpe, Agostino Marcello Mangini, Maria Pia Fanti* (Italy)

Session S-45: Special Session: Intelligent systems and methods for human monitoring

Session chair(s): Laura Romeo, Grazia Cicirelli & Tiziana D'Orazio

Paper ID	Title	Authors
261	Multimodal Data Extraction and Analysis for the Implementation of Temporal Action Segmentation Models in Manufacturing	Laura Romeo*, Roberto Marani, Grazia Cicirelli, Tiziana D'Orazio (Italy)
263	A Dataset on Human-Cobot Collaboration for Action Recognition in Manufacturing Assembly	Laura Romeo*, Marco Vincenzo Maselli, Manuel García Domínguez, Roberto Marani, Matteo Lavit Nicora, Grazia Cicirelli, Matteo Malosio, Tiziana D'Orazio (Italy)
270	Evaluation of Different Models for Spanish Sign Language Recognition	Mayra Vanessa Alvear Gallón*, César Domínguez, Gadea Mata (Spain)
634	A Real-Time Approach for Recognizing German Sign Language	Faycal Nait Irahah*, Rana Belhaj Youssef, Dagmar Meyer (Germany)
375	Enhancing Cerebral Palsy Gait Analysis with 3D Computer Vision: A Dual-Camera Approach	Elli Valla*, Gert Kanter, Sven Nomm, Anton Osvald Kuusk, Peeter Maran, Karl Mihkel Seenmaa, Killu Mägi, Aaro Toomela (Estonia)

Session S-46: Special Session: Artificial Intelligence trends for healthcare optimization:

Metaheuristics, Machine learning and IOT**Session chair(s): Takwa Tlili, Kalthoum Rezgui, Zina Nakhla**

Paper ID	Title	Authors
578	Big Data Analytics for a Dynamic Healthcare Waste Collection Vehicle Routing Problem	Ines Sbai*, Issam NOUAOURI, Saoussen Krichen (Tunisia)
599	Towards an Efficient Hospital Allocation to Patients with Resource Constraints	Taieb Chaima, Takwa Tlili*, Issam NOUAOURI, Krichen Saoussen (Tunisia)
601	Solving the Multi-Objective Ambulance Routing Problem Using NSGA III	Haddad Anouar, Takwa Tlili*, Issam Nouaouri, Krichen Saoussen (Tunisia)
617	Large Language Models for Healthcare: Background, Applications, Models, Datasets and Challenges	Kalthoum Rezgui* (Tunisia)
698	A New Bi-Level Modeling for the Home Health Care Problem Considering Patients Preferences	Abir Chaabani*, Sarra Jeddi, Lamjed Ben Said (Tunisia)
729	Detecting COVID-19 by Analysing Blood Features Using SVM-RGS	Zina Nakhla*, Kaouther Nouira (Tunisia)
734	EHRIOT: Enhancing Patient Care through IoT-Enabled Electronic Health Records	Zina Nakhla*, Kaouther Nouira (Tunisia)

Session V-01: Applications based Neural Networks**Session chair(s): Vadim Azhmyakov & Razieh Abdollahipour**

Paper ID	Title	Authors
568	Enhanced Brain Tumor Detection Using Integrated CNN-ViT Framework: A Novel Approach for High-Precision Medical Imaging Analysis	Safa Jraba, Mohamed Mohamed Elleuch*, Hela Ltifi, Monji Kherallah (Tunisia)
433	Semantic Segmentation of Brain Tumors: A Performance Evaluation Using DeepLabV3+, UNet, and Intel's OpenVINO Toolkit	Medina Kapo*, Amila Akagic, Emir Buza (Bosnia and Herzegovina)
511	Comparison of RNN-Based Models for Sign Language Recognition and Translation	Marah El Askri*, Riadh Bchir, Hend BASLY Hend, sayadi Fatma (Tunisia)
222	Text-Independent Speaker Recognition: A Deep Learning Approach	Arman Shirzad, Razieh Abdollahipour*, Razieh Darshi, Ali Akbar Nasiri, Zohreh Safarpour (Germany)
750	On the Optimal Control Approach to the Hybrid Deep Learning	Vadim Azhmyakov*, Luz Adriana Guzman Trujillo, Ilya Shirokov (Colombia)
701	A Hybrid Spark-Genetic Algorithm for a Real Time Pollution Routing Problem	Ines Sbai*, Issam NOUAOURI, Saoussen Krichen (Tunisia)
435	On Securing Sensitive Data Using Deep Convolutional Autoencoders	Abib Sy* (Canada)

Session V-02: Applied Optimization**Session chair(s): Laurent Deroussi & Bassem Bhiri**

Paper ID	Title	Authors
681	Battery Management Optimization for an Energy-Aware UAV Mapping Mission Path Planning	Dora Novak*, Sihem Tebbani, Jurica Goricanec, Matko Orsag, Laurent Le Brusquet (France)
181	Improved Variation Genetic Algorithm for Travelling Salesman Problem	Elizaveta Shmalko*, Askhat Diveev (Russia)
567	Simultaneous Backward Reduction Algorithm for Disassembly Lot-Sizing under Random Ordering Lead Time	Ilhem slama*, Taha Arbaoui, Faicel hnaïen, Oussama Ben-Ammar, Belgacem Bettayeb, Alexandre Dolgui (France)
747	Circular Coffee Shops' Smart Approach in Montreal	Hanieh Zohourfazeli*, Ali Sabaghpour fard, Amin Chaabane, Armin Jabbarzadeh (Canada)
296	Comparative Analysis of Two Weighting Methods Accounting for Ordinal and Additional Information: CSR and FUCOM	Zhor CHERGUI, Antonio Jiménez-Martín* (Spain)
602	Multi-Surrogate Assisted Differential Evolution for Edge-Based Facility Location Problem	Muhammad Sulaman*, Mahmoud Golabi, Mokhtar ESSAID, Julien Lepagnet, Mathieu Brévilliers, Lhassane Idoumghar (France)
636	A New Numerical Solution of Differential Linear	Bassem BHIRI* (France)

Session V-03: Control Applications

Session chair(s): Valeri Kroumov & Alessandro Piloni

Paper ID	Title	Authors
436	Experimental Study of Trajectory Control Algorithms under Incomplete Information on Parameters and State Variables of a Nonlinear Model of Mobile Robot Motion	Zakharov Dmitrii*, Denis Kurovskii, Artem Kurovskii, Andrei Zhivitskii, Oleg Borisov, Fahro Kasem, Anton Pyrkin (Russia)
510	Advancements in Coverage Path Planning and Motion Stabilization for Control Object Motion Along Designed Paths	Sergey Konstantinov*, Askhat Diveev (Russia)
557	On the Study of Higher-Order State-Constrained Control Systems	Dmitry Karamzin* (Russia)
227	Sliding Mode Controller for Re-Entry Dynamics of Spacecraft Reusable Type Starship	Jose Luis Huayanay Villar* (Peru)
48	Optimizing Computational Complexity in MPC with Lagrange Polynomial-Based Data Reduction	Can Ulas Dogruer* (Turkey)
533	Nonlinear Control Based on Artificial Intelligence MPPT for Photovoltaic Systems	Belgacem Mbarki, Fethi Messaoudi, Jawher Chrouta*, Fethi Farhani, Abderrahmen Zaafouri (Tunisia)
616	Slow Inter-Area Electro-Mechanical Oscillations Revisited: Structural Property of Complex Multi-Area Electric Power Systems	Hiya Gada*, Marija Ilic (USA)
664	Multi-Classification Decision Fusion Based on Stacked Sparse Shrink AutoEncoder and GS-Tabnet for Network Intrusion Detection	Ziqi Wang, Ziyue Guan, Xiangxi Wu, Jing Bi*, Meng Chu Zhou (China)

Session V-04: Multi-Objective and Intelligent Optimization

Session chair(s): Lahmar Arij & Belgacem Bettayeb

Paper ID	Title	Authors
447	Classification Survey of Many-Objective Optimization Methods	Samia Chnini*, Nejah Nasri (Tunisia)
490	Preference-Free Exploration of Pareto-Efficient Solutions	Marek Makowski*, Janusz Granat, Andrii Shekhovtsov, Zbigniew Nahorski, Jinyang Zhao (Austria)
99	Formation Solution for Heterogeneous Swarm of UAVs and MAVs in Crowded Environment	Sotirios Spanogianopoulos*, KENAN AHISKA (Greece)
108	D-NPGA : A New Approach for Tasks Offloading in Fog/cloud Environment	Léo Bernard*, Yassa Sonia, Alouache Lylia (France)
606	Bi-Objective Multi-Period Multi-Sourcing Supply Planning with Stochastic Lead-Times, Degressive Pricing, and Carbon Footprint	Belgacem Bettayeb*, Oussama Ben-Ammar, Ilhem slama, Alexandre Dolgui (France)
604	Exploratory Analysis of CCR-DEA Application for Logistics Performance Management	Francielly Hedler Staudt*, Fabio Sartori Piran, Gülgün Alpan (Brazil)
520	A Mixed-Integer Linear Programming Approach to Optimize Return Strategies for Used Products in Remanufacturing System	HOURIA LAHMAR*, Mohammed Dahane, nadia kenza MOUSS, Mohammed Haoues (Algeria)

Session V-05: Computer Assisted Optimization

Session chair(s): Ramses Sala & Alexander Semenov

Paper ID	Title	Authors
234	A Parametric Design Approach for Affordable Customized 3D Socket for Transradial Upper Limb Prostheses	Alejandro M. Saldarriaga, Enzo Romero, Victoria E. Abarca*, Dante A. Elias (Peru)
705	Primitive Agentic First-Order Optimization	Ramses Sala* (Germany)
387	Function Search Automated by Evolutionary Machine Learning	Elizaveta Shmalko, Askhat Diveev, Ivan Gromov* (Russia)
460	MedShopp: An Online Pharmacy Solution for Crisis	Hemil Prajapati, Sampson Akwafuo* (USA)

	Management in Low-Resource Settings	
732	Model-Free Control for Dynamic Inventory Management in Supply Chain Planning	Danielle NYAKAM NYA*, Hassane Abouaissa (France)
479	A Method for Solving the Multi-Traveling Salesman Problem Based on Reducing the Size of the Solution Space	Firas Houssein*, Vladimir Kostyukov, Igor Evdokimov (Russia)
159	Hyperagent Smart Factories Based on Fractal Petri Nets: Ensuring Elasticity and Sustainability	Alexander Semenov* (Russia)

Session V-06: Applied Transport and Logistics Optimization

Session chair(s): Mohamed Ghazel & Elena Sofronova

Paper ID	Title	Authors
699	A Mathematical Model of a Traffic Controller Robot at the Intersection of Urban Roads	Anna Daryina*, Valentin Bereznev (Russia)
651	Developing IoT Applications for Improving and Selecting Sustainability Transport Routes	Yahya Kadhim Jawad, Mircea Nitulescu* (Romania)
373	Reinforcement Learning-Driven Evolutionary Optimization for the Traveling Salesman Problem	Imen Mejri*, Safa Bhar Layeb, Maryem Benslimane (Tunisia)
106	Intelligent Crossroads Testbed: Toward Autonomous Intersection Management Systems	Zahra Chamideh*, Oscar Sanner, William Tärneberg, Maria Kihl (Sweden)
440	Control Synthesis Problem of Traffic Flow in Urban Network	Askhat Diveev, Elena Sofronova* (Russia)
401	Min-Conflict Heuristic Approach for Elective Patient Bed Assignment Problem	Hela Jedidi*, Issam NOUAOURI, Hajer Ben Romdhane, Saoussen Krichen (Tunisia)

Session V-07: Scheduling and Optimization Strategies

Session chair(s): Fabio Fruggiero & Arij Lahmar

Paper ID	Title	Authors
365	Online Multi-Appointment Scheduling under Demand for Oncology Patient Treatment	SEBASTIAN DAVILA-GALVEZ*, Franco Quezada, Macarena Fredes (Chile)
754	Integrated Risk Management in Supply Chains: Applying AHP and QFD	Arij Lahmar* (United Arab Emirates)
646	A Hybrid Population-Based Method for Scheduling Multiprocessor Tasks on Two Dedicated Processors	Hifi Mhand*, Fatma zohra Baatout, Naby DOUMBOUYA (France)
439	Optimizing Standby System Configurations for Specified Reliability at Minimum Cost	Guanchen Li*, Dimitri Kagaris (USA)
565	Optimization-Based Pump Operation Scheduling for Optimal Energy Management and Pumping Costs	Rithyam Pathak, Shubham Kumar, Vinayak Das, P S Pravin* (Singapore)
180	Integrated Approach of Aggregate Production Planning and Disaggregate Production Planning in Pharmaceutical Industry	Imen Boujnah*, Mounira TLILI, Ouajdi Korbaa (Tunisia)
169	Energy Maximization for Electric Vehicle Charging Scheduling: Meta-Heuristic Approaches	Abdenour Azerine*, Ammar Oulamara, Imene Zaidi, Michel Basset, Lhassane Idoumghar (France)

Session V-08: Diagnosis and Systems Security

Session chair(s): Danko Brezak & Fatemeh Akbarian

Paper ID	Title	Authors
771	Multiscale Kernel PCA for Fault Detection in Autonomous Vehicule	Jamii Jannet*, Nasri Romdhane, Mansouri Majdi, Mimouni Faouzi, Affi Zohaier (Qatar)
763	Implementation of Genetic Algorithm Optimization Based Artificial Neural Network on Raspberry Pi for Fault Diagnosis	Amal Hichri, Saadaoui Wajdi, Mansour Hajji, Majdi Mansouri*, Mohamed Nounou, Kais Bouzrara (Qatar)
764	Raspberry Pi-Based Monitoring System for Grid-Connected PV Systems Using Deep Learning Technique	Zahra Yahyaoui*, Saadaoui Wajdi, Mansour Hajji, Majdi Mansouri, Mohamed Nounou, Kais Bouzrara (Qatar)
766	Real-Time Fault Detection Scheme for Industrial Chemical Tennessee Eastman Process	Attouri Khadija, Majdi M. Mansouri*, Mansour Hajji, Abdelmalek KOUADRI, Kais Bouzrara, Hazem Nounou (Qatar)
765	Real-Time Fault Detection and Diagnosis Method	Attouri khadija*, Majdi M. Mansouri, Mansour

	for Industrial Chemical Tennessee Eastman Process	Hajji, Abdelmalek KOUADRI, Kais Bouzrara, Hazem Nounou (Qatar)
232	Enhancing Autonomous Vehicles System Security: Advanced Attack Detection for Robust Safeguarding	Fatemeh Akbarian*, Dimitrios Papageorgiou, Zahra Chamideh, Jeppe Heini Mikkelsen, Peter Iwer Hoedt Karstensen, Maria Kihl (Sweden)
291	Cutting Forces and Current Signals in AI-Based Monitoring of Stone Drilling with Internally Cooled Drill Bit	Miho Klaić, Danko Brezak*, Kristijan Džamonja, Tomislav Staroveski (Croatia)

Session V-09: Cloud Computing and Wireless Systems

Session chair(s): Jinfeng Li & Zhor Chergui

Paper ID	Title	Authors
593	Development Anonymous Authentication Maria Et Al.'s Scheme of VANETs Using Blockchain and Fog Computing with QR Code Technique	Zahraa Sh. Alzaidi*, Ali A.Yassin, Zaid Abduljabbar, Vincent Omollo Nyangaresi (Iraq)
594	IoHT System Authentication through the Blockchain Technology: A Review	Muwafaq Al-Edani*, Ali A.Yassin, Hamid AL-Asadi, Zaid Abduljabbar, Vincent Omollo Nyangaresi (Iraq)
726	A Framework for Secure Internet of Things Applications	Francesco Buccafurri, Sara Lazzaro* (Italy)
685	A Blockchain-Based Approach for Secure IoT Measurement Systems	Laith Zubaydi, Lindolpho Oliveira de Araujo Junior*, Fabiano Bhering, Fábio Araujo Fabres (Brazil)
247	Roadmap of 6G Reconfigurable Intelligent Surfaces with Nematic Liquid Crystals: Fundamentals, State-Of-The-Art, and Challenges	Jinfeng Li* (China)
202	Improving the Spectral Efficiency of a Downlink 5G Heterogeneous Massive MIMO System Using Beamforming Technique	Obinna Oguejiofor*, Li X Zhang (Nigeria)
702	An Approach Based on IoT, MQTT and Docker to Distribute and Persist Data of an Automated AMBU Ventilator	Nerval de Jesus Santos Junior*, Hellen Dianne Pereira de Souza, Shigeaki Lima, P. Lopes Denivaldo (Brazil)

Session V-10: Fault Detection

Session chair(s): Dusan Krokavec & Aiordachioaie Dorel

Paper ID	Title	Authors
735	Recurrent Attentional Reinforcement Learning for Fault Diagnosis of Hydraulic System	Zhenhui Tang, Ru Liu, Kang Lou, ChaoJian Gao, Jing-Cheng Wang* (China)
748	Dynamic Interval-Valued PCA for Enhanced Fault Detection	L. Rouani, Mohamed-Faouzi HARKAT, Abdelmalek KOUADRI, Abderazak Bensmail, Majdi Mansouri* (Qatar)
93	A New Dubois Et Prade Transform Based Surface Defect Categorization	Jihen Frikha Elleuch, Mouna Zouari*, Dorra Sellami (Tunisia)
736	A Multimodal Fault Diagnosis Model Utilizing GAF Transformation for Controllable Pitch Propeller Hydraulic System	Huihuang Cai, Chen Wei, Huanglong Fu, hua wang, Jing-Cheng Wang* (China)
484	On Fault Detection for Discrete-Time Linear Systems with State-Multiplicative Faults	Dusan Krokavec*, Anna Filasova (Slovakia)
769	Uncertainty Quantification Kernel PCA: Enhancing Fault Detection in Interval-Valued Data	ABDELHALIM LOUIFI, Abdelmalek KOUADRI, Mohamed-Faouzi HARKAT, Abderazak Bensmail, Majdi Mansouri* (Qatar)
721	FDI Approach for INS with Fixed-Time Parameter Estimation of USV	Dmitry Bazylev*, Alexey Margun, Maxim Lyahovsky, Radda Iureva (Russia)

Session V-11: Monitoring and Supervision

Session chair(s): Jose Barata & Naby Doumbouya

Paper ID	Title	Authors
257	Knowledge-Based System for Poultry-Houses Management	Guilherme de Santana Weizenmann*, Jonny Silva (Brazil)
620	Cyber-Attack Detection and Isolation for a Fleet of Naval Vessels	Shadi Asgari, MohamadGhasem Kazemi, Khashayar Khorasani* (Canada)
345	Experts behind the wheel: Driver Interaction with	Husam Muslim*, Marko Medojevic, Genya Abe

	Level-3 Automated Overtaking in Undivided Roads	(Japan)
663	Concept and Six-Dimension Model of Digital Triplet	Chenhao Wu*, Zhexin Cui, Qian Xia, Jiguang Yue (China)
654	A Combined Approach to Estimate Labor Costs in the Development of Complex Technical Facilities	Saniya Galina, Rinat Galin* (Russia)
32	Identification of the Relationship between the Criteria and Results of ERP Application with Human Capital Management Module and Enterprises Features	Sebastian Kot* (Poland)
572	Exploration of Open Source SIEM Tools and Deployment of an Appropriate Wazuh-Based Solution for Strengthening Cyberdefense	Raghda Amami, Maha Charfeddine*, Salma Masmoudi (Tunisia)
183	Simulation Based Optimization of Sequential Vacuum Infusion with Controlled Post-Infusion Stage for Thin-Walled Composite Parts Forming	Sergey Shevtsov*, Igor Zhilyaev, Natalia Snezhina (Russia)

Session V-12: System Identification

Session chair(s): Smail Bachir & Ibrahim Aliskan

Paper ID	Title	Authors
466	Distributed State Variables Estimation Algorithm for Large Scale Power Systems	Mounira Hamdi* (Tunisia)
149	Optimizing Facial Detection Using Hybrid HOG-SVM Method	Nabila Daly*, Khemakhem Faten, Ltifi Hela (Tunisia)
642	One-Stage Adaptive Observer for Induction Motors	Alexey Ovcharov*, Alexey Vedyakov, Madina Sinetova (Russia)
529	Single Model Scheme-Based Smith Predictor for the Mitigation of the Effects of Network Imperfections in Consensus Control of Multi Agent Systems	Loaie Solyman*, Ayman El-Badawy, Ansgar Meroth (Egypt)
167	Parameter Estimation of PMDC Machine for Speed Control Application	Mohammed Abdullah Malik, Mohammad Ibrahim Malik, Atif Qayyum* (Pakistan)
640	Reduction in Computational Complexity of Recursive PI-MOESP Identification Algorithm Via SVD with Fixed Input-Output Data Size	Ryota Numata, Tsuyoshi KIYAMA* (Japan)
656	Lumped-Parameter Modeling: Enabling Real-Time Battery Management	Mehrdad Babazadeh*, Dhammika Widanage (United Kingdom)

Session V-13: IoT and AI for Smart Systems

Session chair(s): Iervolino Raffaele & Bijender Kumar

Paper ID	Title	Authors
379	Improving Yield Prediction at Field Scale by Exploring Temporal and Spectral Dependencies in High-Resolution Remotely Sensed Data Using At-LSTM and R-PCA	Khadija MEGHRAOUI*, Imane SEBARI, Kenza Ait El Kadi, Saloua BENSIALI (Morocco)
453	Olive Disease Classification Based on VGGNET and Fine-Tuning Process	Nabiha Dhaffouli*, Njah Nasri, Sami Hidouri (Tunisia)
554	A Comprehensive Review of Beekeeping Datasets for Precision Apiculture Research	Seloua Haddaoui*, Nawres Khelifa, Salim CHIKHI, Fouzia Adjailia (Algeria)
757	Improving Routing Efficiency in Vehicular AD Hoc Networks	Nouha Alyaoui, Nejah Nasri, Wafa Akermi*, Awatef Benfraj (Tunisia)
152	Context-based Collaborative Filtering: K-Means Clustering and Contextual Matrix Factorization	JIHENE LATRECH*, Zahra Kodia, BEN AZZOUNA Nadia (Tunisia)
203	Applying Regular Expressions in Text Mining to Extract Information from Medical Expert Reports	Rym ZWAWI*, Sonia Ayachi Ghannouchi, Slaheddine Ghannouchi (Tunisia)
517	A Comprehensive Overview of AI Based Methods for SoC Estimation of Li-Ion Batteries in EV	Ines Baccouche*, Najoua Essoukri Ben Amara (Tunisia)
583	Research on spatial aggregation patterns of urban population in Almaty City based on heat map	Gulnara Bektemyssova, Aiman Moldagulova*, Galymzhan Shaikemelev Galymzhan Timurovich, Sayan Omarov Sayan Serikovich, Saltanat Nuralykyzy Saltanat (Kazakhstan)

Session V-14: Robotics

Session chair(s): Pedro Batista & Ioan Doroftei		
Paper ID	Title	Authors
297	Simulator of the Spatial Location of the Knee Axis of Rotation During Flexion	Paco A. Castillo, Giancarlo Nieves, Sebastian Trujillo, Jhannelly Ricra, Victoria E. Abarca*, Dante A. Elias (Peru)
543	Risk-Aware Meta-Level Decision Making for Exploration under Uncertainty	Joshua Ott*, Sung-Kyun Kim, Amanda Bouman, Oriana Peltzer, Mamoru Sobue, Harrison Delecki, Mykel Kochenderfer, Joel W. Burdick, Ali-akbar Agha-mohammadi (USA)
495	Hybrid Consensus Control for Nonholonomic Multi-Robot Systems	Davide Aloisi*, Andrea Cristofaro (Italy)
534	A Soft E-Textile Sensor for Enhanced Deep Learning-Based Shape Sensing of Soft Continuum Robots	Eric Vincent Galeta, Ayman Ali Nada, Sabah Ahmed, Victor Parque, Haitham El-Hussieny* (Egypt)
635	Safety Classes Semantic Costmaps from RGBD Sensors for Risk-Aware Robot Navigation	Thomas Weber* (Germany)
516	An Automated Robotic Gripper Design Framework	Georgia Peleka*, Yiannis Mariolis, Dimitrios Giakoumis, Dimitrios Tzovaras (Greece)
144	Detection, Identification, and Resilient Control of Cyber-Attacks on Rudder Servo Systems in Marine Vessels	Mahdi Taheri, Mohammadreza Nematollahi, Khashayar Khorasani* (Canada)

Session V-15: Image Processing

Session chair(s): Aydin Akan & Lahcene Mitiche

Paper ID	Title	Authors
427	Preprocessing Digital Images for Enhanced Detection and Classification of Surface Defects in Cold-Rolled Sheet Metal	Oleg Evstafev*, Sergei Shavetov (Russia)
342	Exploring the Impact of Real and Synthetic Data in Image Classification: A Comprehensive Investigation Using CIFAKE Dataset	Amila Akagic*, Emir Buza, Medina Kapo, Mahdi Bohlouli (Bosnia and Herzegovina)
563	A 3D Deep CNN Network-Based Data Hiding Scheme for Images	Mounir Telli*, Mohamed Othmani, Hela Ltifi (Tunisia)
473	Improvement of Small Target Detection Algorithm for UAVs	Yonghang Su, Lirong Yan, Yibo Wu* (China)
596	A Novel Handcrafted Features and Deep BiLSTM Neural Network for Lymphoma Recognition	Radhia Ferjaoui*, Sana Boujnah, Anouar BEN KHALIFA (Tunisia)
51	Satellite Imagery-Based Mapping Solutions for Autonomous Navigation in Outdoor Settings	Can Ulas Dogruer*, Ahmet Bugra Koku, Melik Dolen (Turkey)
551	Deep Visual-Inertial Odometry Using Adaptive Visual Data Selection and External Memory Attention	Abdul rahman Samra*, Sergei Shavetov (Russia)
751	Enhancing Diabetic Retinopathy Classification: A Fusion of ResNet50 with Attention Mechanism	TOUATI mohamed* (France)

Session V-16: Applied Control Techniques

Session chair(s): Altuğ Erdinç & Ben Naceur Ferdaws

Paper ID	Title	Authors
707	Camera-Based Adaptive Line Formation and Dynamic Leader-Following Optimization (CALF-DLFO) for Drone Swarms in Real-Time Updated Digital Twins	Berk Cetinsaya*, Carsten Neumann, Gerd Bruder, Dirk Reiners, Carolina Cruz-Neira (USA)
456	Optimal Output Regulation of a Field-Controlled DC Motor Using an Extended High-Gain Observer	Arifa K.A. Qazi*, Attaullah Y. Memon, lubna moin (Pakistan)
552	On the design of stabilizing FIR controllers	Janis Adamek*, Nils Schlüter, Moritz Schulze Darup (Germany)
622	Knapsack algorithm for data communication description and energy management in IoT System: Smart Grid	Ben Naceur Ferdaws*, Achraf Jabeur Telmoudi, Mohamed Ali MAHJOUB (Tunisia)
134	Designing of Ellipsoidal Quality Estimates of	Roman Omorov, Akylai Akunova, Taalaibek

	Processes in Linear Multivariable Systems and SVD Planning of the Experiment	Akunov* (Kyrgyzstan)
140	Safety-Critical Control for a Coaxial Octorotor UAV Via High Order Control Barrier Function	Parvin Mahmoudabadi*, Karl von Ellenrieder, Matthias Moroder, Moritz Moroder (Italy)
696	DREM-Based Adaptive Observer for Induction Motor Model with Friction	Vladimir Bespalov*, Alexey Vedyakov, Anastasiia VEDIKOVA (Russia)
668	Bearing-only formation stabilization for three agents using elevation angles and area constraints	Chinmay Garanayak*, Dwaipayan Mukherjee (India)

Session V-17: Nonlinear Systems

Session chair(s): Safya Belghith & Triveno Vargas

Paper ID	Title	Authors
515	Analysis Method of Phase Sensitivities for Rhythm Phenomena	Yasuaki Kuroe*, Yoshihiro Mori (Japan)
301	An Hybrid Observer for a Two-Branch Supercapacitor Model : Voltages Estimation for SOH and SOC under NEDC and WLTP Cycles	Eric Magarotto*, Tarek Ahmed-Ali, MADJID HADDAD (France)
402	An LMI-Based Composite Nonlinear Controller Design for Robust Stabilization of a Knee Rehabilitation Exoskeleton Robot	Sahar Jenhani, Hassène Gritli*, Jyotindra Narayan (Tunisia)
200	Modeling, Control, Simulation and Prototyping of Tracked Mobile Robot	Triveno Vargas* (Brazil)
178	Adaptive Fuzzy Control for a Quadrotor UAV Attitude with Actuator and Sensor Failure: The Practical Fixed-Time Stability	Aymene Bacha*, Chelihi Abdelghani, Hossam Eddine Glida, Chouki Sentouh (Algeria)
153	Optimal Control: White Flies and Their Predators in Two and Three Species	Nacima Moussouni*, Mohamed Aliane, Dehbi Louiza (Algeria)
614	Stabilization of Driving Velocity Constraints for Self-Balanced Robot	Ibrahim Abdel-Hadi Ibrahim, Mona Bayoumi, Nader A. Mansour, Ayman Ali Nada* (Egypt)
753	Nonlinear PMP Approach for Stabilization and Tracking Control of Wheeled Inverted Pendulum (WIP)	Anil B*, Sneha Gajbhiye (India)

Session V-18: Artificial Intelligence and Data Mining

Session chair(s): Akagic Amila & Nerval Junior

Paper ID	Title	Authors
147	Harnessing Machine Learning for Predictive Analytics: A Case Study of Lassa Fever Outbreaks in Nigeria	Daniel Quezada*, Sampson Akwafuo, Samarth Halyal (USA)
357	Exploring Convolutional Autoencoder Efficacy in Noise Removal for Image Processing and Computer Vision: A Study Using the MNIST Dataset	Elma Kandic, Amila Akagic*, Mahdi Bohlouli (Bosnia and Herzegovina)
410	Alzheimer's Disease and Frontotemporal Dementia Prediction Using Variational Mode Decomposition and Machine Learning	Samayan Bhattacharya*, Kseniia Kriukova, Alexis Bennett, Celina Alba, Dominique Duncan (India)
184	Comparative Analysis of Multilingual Text Classification Techniques: A Review of Current Approaches and Emerging Trends	Kawther Dridi*, Wahiba Ben Abdesslem Karâa (Tunisia)
624	Mixed Reinforcement Learning and Sliding Mode Controller Design for Robot Application	Amine Mebarki, Mohamed ZERROUGUI* (France)
382	Enabling Efficient and Flexible Interpretability of Data-Driven Anomaly Detection in Industrial Processes with AcME-AD	Valentina Zaccaria, Chiara Masiero, David Dandolo, Gian Antonio Susto*, Riccardo De Monte (Italy)
68	Pred-IFDSS: An Intelligent Financial Decision Support System Based on Machine Learning Models	Zouaghia ZOUAGHIA*, Zahra Kodia, Lamjed Ben Said (Tunisia)
571	Privacy-preserving gradient-based fair federated learning	Janis Adamek*, Moritz Schulze Darup (Germany)

Session V-19: Integrated Energy Control

Session chair(s): Juan Onofre Orozco López & Riley Lawson

Paper ID	Title	Authors
298	Analysis and Implementation of Sensorless PMSM Drive with Reduced DC-Link Capacitance under Parameter Variations	Reha Ozgur Simsek, Ramazan Calik, Fikri Serkan Yavuz, Omer Cihan Kivanc* (Turkey)
501	State Feedback Power Control of Boost Converter Aimed at Power System Stability	Yuri Ferreira, Rodrigo Trentini*, Diego Santos Greff (Germany)
161	Field Oriented Control Strategy of DFIG-DC System with Harmonic Study	Yosra Smal*, Hechmi Ben Azza (Tunisia)
141	Improving the Distribution Network's Power Quality Using PV-STATCOM in Compliance with Moroccan Grid Code Regulations	SAAD SARIH*, Zakaria Boulghasoul, samira chabaa, Abdelouahed TAJER, Abdelhadi ELBACHA (Morocco)
419	Dynamics of a Vertical Axis Micro Wind Turbine with an Adjustable Geometric Parameter for Energy Harvesting	Adan Rincón Silva, Diego Almeida-Galárraga, Juan Onofre Orozco López* (Mexico)
692	Optimality Conditions for Distributed Primary Control in Energy State Space	Dan Wu, Rupamathi Jaddivada, Riley Lawson*, Marija Ilic (USA)
575	Optimal Scheduling for Dual-ESS Considering Life-Cycle Degradation	Jaemin Park, Tae Kyeong Jeong, Min Kyu Sim* (Korea, South)
773	Wireless energy transfer for powering smart sensors	Amira HADDOUK*, Hfaiedh Mechergui (Tunisia)

Session V-20: Intelligent Control**Session chair(s): Rui Azevedo Antunes & Yulia Litvinenko**

Paper ID	Title	Authors
278	Adaptive Control of a Pediatric Gait Exoskeleton: Integrating RBF Neural Network with Non-Singular Fast Terminal Sliding Mode Scheme	Jyotindra Narayan*, Santosha K. Dwivedy (United Kingdom)
559	A Note on the Simplest Mamdani Fuzzy Two-Term (PI/PD) Controllers	Sadhna Malik*, Murali Mohan Bosukonda (India)
597	Deep Reinforcement Learning-Based Neighbor Selection of a Cucker-Smale Flocking Algorithm	Jongyun Kim*, Minjae Jung, Hyo-Sang Shin, Hyondong Oh, Antonios Tsourdos (United Kingdom)
113	Decision-Making Model for Determining the Intensity of a Processing Center under Conditions of Uncertainty	Valeh Mustafayev, Malahat Salmanova*, Sadaqat Ismet Budagov (Azerbaijan)
561	On the Stability of Formation Control for Heterogenous Systems under Network Imperfections	Ali Tarek*, Ayman El-Badawy, Ansgar Meroth (Egypt)
346	A Machine Learning Classifier for Detection of Performance Issues in Industrial Closed-Loop PID Controllers	Mehmet Yagci*, Krister Forsman, Jari M Böling (Finland)
589	Safe and Efficient Multi-System Neural Controllers Via Reinforcement Learning-Based Scheduling	Joshua Adamek*, Sergio Lucia (Germany)
97	Zero-Shot DDPG Controller Design for Liquid Level Control of a Benchmark Quadruple-Tank Process	Javier Machacuay*, William Ipanaque Alama (Peru)

Session S-47: Special Session: Efficient Training Paradigms for Edge Devices: Balancing Memory and Time Constraints**Session chair(s): Jinen Daghrrir & Bisma Guesmi & Imen Jegham**

Paper ID	Title	Authors
160	YOLO Detectors for Real-Time Object Detection Based on Drones in Intelligent Transportation Systems: Comparative Study	Ines BEN ROUGH, Hajer Chtioui, Imen Jegham*, Anouar BEN KHALIFA (Tunisia)
321	EoFNets: EyeonFlare Networks to predict solar flare using Temporal Convolutional Network (TCN)	Bisma Guesmi*, Jinen Daghrrir, David Moloney, Carlos Urbina Ortega, Furano Gianluca, Giuseppe Mandorlo, Elena Hervas-Martin, Jose Luis Espinosa-Aranda (Ireland)
323	Hardware-aware, deep-learning approaches for	Bisma Guesmi*, David Moloney (Ireland)

	image denoising and star detection for star tracker sensor	
743	Enhancing Face Recognition in Degraded Conditions Via Vision Transformer	Laila Ouannas*, Anouar BEN KHALIFA, Najoua Essoukri Ben Amara (Tunisia)
271	A Deep CNN-BiGRU Network for Multi-Stream Hand Gesture Recognition Framework	Nahla MAJDOUB BHIRI, Safa AMEUR, Imen Jegham*, Ihsen Alouani, Anouar BEN KHALIFA (Tunisia)
541	Adversarial Network Augmentation and Tabular Data for a New Covid-19 Diagnostics Approach	Eman Al-Bwana*, Ikbel Sayahi, Mohamed Ali MAHJOUR, Alauthman Mohammad (Tunisia)
426	PGFLP 1.0: Benchmark Suite and Dataset for Automatic License Plate Recognition in the Wild	Amir Ismail*, Maroua Mehri, Anis Sahbani, Najoua Essoukri Ben Amara (Tunisia)
289	Hard Attention Based EfficientNet for Person Re-Identification	Emna Ben Baoues, Imen Jegham*, Safa AMEUR, Anouar BEN KHALIFA (Tunisia)

Session S-48: Mobile, Wireless Communications, and Telecommunication Applications

Session chair(s): Owen Casha

Paper ID	Title	Authors
524	Mixed-Reality VANET Testing Supported by Simulation of Mesoscopic V2X Communication	Tamás Ormándi*, Zsombor Pethő, Balazs Varga (Hungary)
100	How Does Distributed Denial of Service Affect the Connected Cars Environment?	Ayoub WEHBY*, Sherali Zeadally, Rida KHATOUN, Mohammed Lamine Bouchouia, ahmad Fadlallah (France)
478	Database Creation for WiFi Positioning Using Reference Location Information Acquired Based on PDR	Seong Yun Cho*, Jae Uk Kwon (Korea, South)
56	Design and Implementation of a SNMP RF Power Monitoring System for an ATC High Power AM Transmitter	Owen Casha*, Joseph Cutajar, Clayton Sciberras, Joe Deguara, Gareth Gellel, Luke Catania, Dale Grixti, Leslie Zammit (Malta)
313	A Fair Detection Strategy of an Adversary	ANDREY GARNAEV*, Wade Trappe (USA)
358	Comparative Analysis of Deep Neural Networks for GaN HEMT Load Pull Data Reconstruction	Julien ALLEMAN*, Michel PRIGENT, Fabien Courrèges (France)

Session S-49: Monitoring and Supervision

Session chair(s): Nikolay Stoimenov & Yan-Lin He

Paper ID	Title	Authors
63	Development of an IoT-Enabled Energy Monitoring and Energy Flow Analysis Model for SMEs	Fekadu Fucci, Marwa Ben Ali*, Erwin Rauch (Italy)
526	Analysis of Trajectory Tracking for the Development of Strategies in Robotic Metal Additive Manufacturing	Ela MVOLO* (France)
487	Advancing Water Resource Management in Romania through National-Level Decision Support Systems	Maria Cheveresan, Monica Mainerici, Alina Barbulescu* (Romania)
482	Autonomous Mapping and Monitoring of Rumex with Mobile Robot	Ngoc Thinh Nguyen*, Niklas Fin Kompe, Nicolas Mandel, Neele Kohle, Floris Ernst (Germany)
64	Exploring the Synergy of Digitalization and IoT: A Literature Review on Energy Monitoring for SMEs	Marwa Ben Ali*, Erwin Rauch, Dominik T. Matt (Italy)
170	Wear at Boundary Friction of 3D Printed Polymers and Composites	Gabriela Kotseva, Mara Kandeve, Nikolay Stoimenov*, Mihail Zagorski (Bulgaria)

Session S-50: Data Mining

Session chair(s): Belkacem Chikhaoui

Paper ID	Title	Authors
244	Strategic Insights from Customer Feedback: A Study of Hotel Reviews Using Logistic Regression	Rasha Abdulwahhab*, Zaid Said Al-Dhuhouri Ghadeer (Oman)
580	Exploiting Related Sensor Measurements for Effective Unsupervised Learning-Based Detection of Equipment Anomalies	Chieh-Yu Chen, Shi-Chung Chang* (Taiwan)
109	Novel Virtual Sample Generation Using Score Based Generative Model for Addressing Small Data in Soft Sensing	Hai Lin Wang, Qunxiong ZHU, Yan-Lin He, Yuan XU* (China)

214	A New Approach for Community Dynamics and Influence in Social Networks: Case of Wexit Movement	Olfa Gassara, Jean Marie Tshimula, Belkacem Chikhaoui* (Canada)
315	PedSaF: Pedestrian Safety First a dataset for unveiling pedestrian safety behavior dynamics through data analysis and machine learning	Maissa Chaibi, Dorra Zorgui, Jinen Daghbir* (Tunisia)

Session V-21: Smart Engineering Innovations

Session chair(s): Elías Neftalí Escobar-Gómez & Samia Chnini

Paper ID	Title	Authors
706	Analysis of Physiological Parameters for Assessing the Risk Level of Cardiovascular Diseases Using Machine Learning Algorithms	José Luis López Saynes, Elías Neftalí Escobar-Gómez*, Carlos A. Hernández Gutiérrez (Mexico)
535	Daily Electricity Consumption Forecasting: A Comparative Study of Neural Network and Radial Basis Function Models	Agresa Qosja*, Didier Georges, Eralda Gjika, Ligor Nikolla, Arben Cela (France)
687	Hybrid Framework for UAV Motion Planning and Obstacle Avoidance: Integrating Deep Reinforcement Learning with Fuzzy Logic	Bingze Xia*, Iraj Mantegh, WENFANG XIE (Canada)
1	Genetic Algorithm and Binary Masks for Co-Learning Multiple Dataset in Deep Neural Networks	ÖZNUR TURAN*, Mehmet Önder Efe (Turkey)
424	Reward Planning for Underactuated Robotic Systems with Parameters Uncertainty: Greedy-Divide and Conquer	Sinan Ibrahim*, Pavel Osinenko, S M Ahsan Kazmi Kazmi (Russia)
363	Real-Time Prediction of Traffic Accident Risk Focused on the Most Accident-Prone Zones	Mohamed MOUAIKI*, Frédéric Royet (France)
448	Prototype for the Model-Based Assets and Liabilities Management Support System	Aleksandra Zhukova*, Anna Flerova, Maxim Tarasenko, RUSLAN GABBASOV, Alexey Vladimirovich Chernov (Russia)
352	Bridging Gaps in Early Math Education: A User-Centric Approach to Mobile Learning App Development	Zina Osman*, Mohammed Zidan, Mohammad Alblooshi, Mohammad Al Nasar (United Arab Emirates)

Session V-22: Innovative Control Design

Session chair(s): Najib ESSOUNBOULI & José Boaventura-Cunha

Paper ID	Title	Authors
584	Output Robust Control of a PMSM with Disturbance Cancellation and Anti-Windup Correction	Andrei Zhivitskii*, Oleg Borisov, Anton Pyrkin (Russia)
258	On the Sensitivity of Characteristic Roots of a Class of Parameterized Delay-Differential Neutral Systems	César Fernando Méndez-Barrios*, Silviu-Iulian Niculescu, Alejandro Martínez-González (Mexico)
521	Optimal Robustification of Linear Quadratic Regulator	Anel Tahirbegovic, Adnan Tahirovic* (Bosnia and Herzegovina)
693	Advanced Approaches in Mössbauer Drive Modelling and Controller Design Reducing System Order and Increasing Robustness	Mohammad Beyki*, Justus Pawlak (Germany)
325	Enhanced Robustness Properties and Tracking Performance of the Quadrotor Unmanned Aerial Vehicle under Disturbances Via the Second Order Sliding Mode Control	Faik Tahirovic, Almir Salihbegovic*, Emir Sokic, Nedim Osmic (Bosnia and Herzegovina)
409	Yaw Control of a Surface Vessel	Alexandr Panin*, Zakharov Dmitrii, Andrei Zhivitskii, Artem Kurovskii, Oleg Borisov (Russia)
536	Parameter Estimation Based on Generalized Adaptive Observer for a Class of Linear Algebraic-Differential Parameter-Varying Systems	Israel Isaac Zetina Rios*, Marouane Alma, Gloria-Lilia Osorio-Gordillo, Mohamed Darouach, Carlos Astorga-Zaragoza (Mexico)
718	Research on the Application of Lane Change Prediction Algorithms on Adaptive Cruise Control System for Insecure Scenarios in MATLAB/Simulink	Leila Suleiman, Sergey Vlasov, Dmitrii Dobribors*, Khac Tung Nguyen (Germany)

Session V-23: Systems Engineering**Session chair(s): Lale Canan Dulger & Nerval Junior**

549	Output-Based Event-Triggered Predictive Control of Networked Control Systems under Bandwidth Constraints, Time Delays and Packet Dropouts	Loaie Solyman*, Ayman El-Badawy, Ansgar Meroth (Egypt)
273	Model Based Design Approach for ePWT Software & System – Battery Management System for XEVs	BIJENDER KUMAR* (India)
303	New Vision of the Universe by a Radio Telescope-Lab	Mejri Fethi*, TAOUIK AGUILI, MONCEF GHOURABI
716	Detection of Gas Emission in the Decomposition of Dositicus Gigas Using an Automated Prototype of Low-Cost	Jose Luis Huayanay Villar* (Peru)
746	Local Model Checking on a Modular System	Khlifa Sawssen*, Chiheb Ameer Abid, Belhassen ZOUARI (Tunisia)
197	High Sensitive Biosensor for Glucose Detection Based on Photonic Crystal Microcavity	Abdelaziz Ould Bahammou*, Monia Najjar (Tunisia)
306	Design of a LNA for the Characterization by a New Original Approach the 21cm Line of Atomic Hydrogen	Mejri Fethi*, TAOUIK AGUILI, MONCEF GHOURABI (Turkey)
242	Modeling and Simulation: Manufacturing of a Wheel	Murat Türkan, Lale Canan DULGER*, cagri Unal, Begum Acar (Turkey)

Session V-24: Control Theory**Session chair(s): Giuseppe Franze' & Francisco Vargas**

528	Formation Control for Quadrotors under Network Imperfections	Ali Tarek*, Ayman El-Badawy, Ansgar Meroth (Egypt)
376	PI Control for Optimal Spectral Abscissa in General Non-Minimum Phase Systems with Time Delay	Diego Torres-García*, César Fernando Méndez-Barrios, Silviu-Iulian Niculescu, Michael Hernández-Gómez (France)
280	Robust Model Predictive Control for Systems under Constant Disturbances	Iulia-Cristina Radulescu* (Romania)
2	Problem of Optimal Area Monitoring and Universal Motion Stabilisation System for Its Practical Realisation	Askhat Diveev*, Elena Sofronova (Russia)
294	TurboJet Engine with Variable Area Exhaust Nozzle for Aircraft Use As Controlled Object	Alexandru Tudosie* (Romania)
288	A Hybrid Deep Learning Method for Controlled Stochastic Kolmogorov Systems with Regime-Switching	Zhuo Jin*, Jiaqin Wei, Yu Zhang (Australia)
267	One Example of a \mathbb{R}^k -Order State-Constrained Control Problem	Dmitry Karamzin, Aleksandra Zhukova* (Russia)
233	Detection and Identification of Cyber-Attacks in Switched Cyber-Physical Systems	MohamadGhasem Kazemi, Khashayar Khorasani* (Canada)

Session V-25: Special Session: Emergent Methods, Techniques and Tools for Cybersecurity**Session chair(s): Jaouhar Fattahi, Mohamed Mejri, Ridha Ghayoula, Emil Pricop**

Paper ID	Title	Authors
429	Intrusion Detection Explainability by Ensemble Learning with a Case Study	Elyes Manai, Mohamed Mejri, Jaouhar Fattahi* (Canada)
457	FingFor: A Deep Learning Tool for Biometric Forensics	Jaouhar Fattahi*, Baha Eddine Lakdher, Mohamed Mejri, Ridha Ghayoula, Elyes Manai, Marwa Ziadia (Canada)
461	Sexism Discovery Using CNN, Word Embeddings, NLP and Data Augmentation	Jaouhar Fattahi*, Feriel Sghaier, Mohamed Mejri, Ridha Ghayoula, Sahbi Bahroun, Marwa Ziadia (Canada)
465	Handwritten Signature Recognition Using Parallel CNNs and Transfer Learning for Forensics	Jaouhar Fattahi*, Feriel Sghaier, Mohamed Mejri, Ridha Ghayoula, Emil Pricop, Baha Eddine Lakdher (Canada)
194	Confusion Matrix Explainability to Improve Model Performance : Application to Network Intrusion Detection	Elyes Manai, Mohamed Mejri, Jaouhar Fattahi* (Canada)
475	The Good and Bad Seeds of CNN Parallelization in	Jaouhar Fattahi*, Baha Eddine Lakdher, Mohamed

	Forensic Facial Recognition	Mejri, Ridha Ghayoula, Ferial Sghaier, Laila Boumlik (Canada)
492	Extended Group TOPSIS Method with Application for Cybersecurity	Constanta Zoie Radulescu*, Marius Radulescu, Adrian Victor Vevera, Radu Boncea (Romania)
755	Optimal and Secure Routing Protocol Based on Key Management for IoT	Radhia Radhia khahir, Salwa Othmen, Aymen Belghith*, Khaled Hamouid (Saudi Arabia)

Session V-26: Control Systems

Session chair(s): Jyotindra Narayan & Binoy Krishna Roy

Paper ID	Title	Authors
256	Multi-Slot Resilient Homomorphic Encryption of Dynamic Feedback Controllers	Moritz Fauser, Ping Zhang* (Germany)
703	Practical Filter & Simulative Controller Design for Radiation Signal Processing with Applications in Mössbauer Spectroscopy for Space Exploration	Mohammad Beyki*, Justus Pawlak (Germany)
585	An Automated Diagnosis of Epilepsy Using EEG Derivation Based on Few Features	Zayneb Brari*, Safya Belghith (Tunisia)
694	Comparison of Recursive and Nonrecursive Linearization-Based Algorithms for One Class of Nonlinear Estimation Problems	Oleg A. Stepanov, Yulia Litvinenko, Alexey Isaev* (Russia)
359	Suboptimal Algorithms for Markov Process Filtering Using Nonlinear Measurements	Oleg A. Stepanov, Alexey Isaev*, Vladimir Vasiliev (Russia)
574	Super-Twist Sliding Mode Impedance Control for Dual-Arm Space Robot On-Orbit Assisted Docking Operation Based on SSO Algorithm	DongBo Liu*, Li Chen (China)
626	Lane Change Prediction Algorithms for Adaptive Cruise Control System Simulation in MATLAB/Simulink	Leila Suleiman, Sergey Vlasov, Dmitrii Dobriborsci*, Khac Tung Nguyen (Germany)



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