

FINAL PROGRAM



21-23 October 2020



LAAS-CNRS, Toulouse

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BECAUSE OF THE WORSENING COVID PANDEMIC IN FRANCE AND THE REST OF EUROPE, WE HAVE DECIDED TO MOVE THE EVENT TOTALLY ONLINE AS YOUR HEALTH AND SAFETY ARE OUR MAIN CONCERN

ON THE OTHER HAND, HOWEVER, WE ARE LOOKING INTO THE POSSIBILITY OF REVISITING LAAS-CNRS TOULOUSE FOR A FUTURE ESM (FROM 2022 ONWARD)

The ESM'2020 final programme, as a tribute to the hard work of the local committee gives information on how to reach LAAS-CNRS in Toulouse, but also gives you info on how to virtually attend the event, which will be the way we will proceed.

Contents

Best Paper Award	7
Conference Location	4/5
Conference Proceedings	6
General Information	4
Login	6
Meeting Rooms	6
Need Help?	6
Notes	12
Registration	6
Session Chairs Information	8
Social Event and Lunches	7
Tickets	6
Virtual Participation Info	5
Quick Program Overview	9
Scientific Program	15
Wednesday, October 21	13
Thursday, October 22	18
Friday, October 23	24
ESM'2021	27
EUROSIS Info	28

General Information

1. Conference Location

The **ESM'2020 Conference** is being held virtually at



LAAS-CNRS
7, avenue du Colonel Roche
BP 54200 31031 Toulouse cedex 4
France
Tel: +33 (0) 5 61 33 62 00
Email1: clement.foucher@laas.fr
Email2: alex@laas.fr
Email3: claudio.baron@insa-toulouse.fr

The **online registration** will be open from Wednesday morning October the 21st onwards, where registration will start at 08.15 a.m. and will end at 5.00 p.m. On Thursday October 22nd registration will be from 9.00 a.m. - 5.00 p.m. with Friday registration only from 9.00 a.m.- 9.30. a.m. Online registration info can be found further in this programme.

How to reach the conference location in Toulouse:

By Plane

Arriving at Toulouse by plane at Toulouse-Blagnac airport and going directly to LAAS

Taxi: 25 minutes

Tram + subway: 45min

Tram ligne T2 to Palais de justice, then métro ligne B towards Ramonville to "Faculté de Pharmacie" down station, then take the shuttle 78 * or lower station Ramonville Saint Agne, then take the shuttle - 37 * or 27 *, stop "LAAS".

Bus + Subway: take the airport shuttle to the city center - 1/2 hour stop: Jeanne d'Arc Station, take metro line B towards Ramonville, Faculty of Pharmacy down station, then take the shuttle 78 * or lower station Ramonville Saint Agne, then take the shuttle - 37 * or 27 *, stop "LAAS".

By Train

Arriving at Toulouse by train at Matabiau Railway station and going directly to LAAS

Taxi: 15 minutes

Metro: Take the subway, in the Railway Station, get off station Jean Jaurès, this station is the only point of correspondence between lines A and B underground.

General Information

Take line B, direction Ramonville, Faculty of Pharmacy down station, then take the shuttle 78 * or lower station Ramonville Saint Agne, then take the shuttle - 37 * or 27 *, stop "LAAS".

Metro: Take the 27* towards Ramonville, stop "LAAS"

By Metro

Leaving the metro at Paul Sabatier Station and going directly to LAAS

Leave the metro at the Universite Paul Sabatier Station which is between Pharmacie station and Ramonville station

Outside Universite Paul Sabatier station you take a shuttle to LAAS

This takes 5 to 10min to reach LAAS station

By Car

Arriving in Toulouse by car (from beltway) and going directly to LAAS

Exit 20, direction "Complexe scientifique de Rangueil"

Exit 23, direction "Université Paul Sabatier, Ramonville St-Agne"

ESM'2020 VIRTUAL PARTICIPATION AND PRESENTATION

As stated on page 3 because of the worsening COVID figures in Europe and France we are forced to move the event totally online. It was not our intention but reality has caught up with us. We do hope to hold an ESM in the near foreseeable future at LAAS-CNRS (more info to follow soon)

Therefore we are opening up a virtual environment for the ESM presentations using the following software:

Big Blue Button: <https://bigbluebutton.org/>

Big Blue Button runs within your browser

See more info here: <https://docs.bigbluebutton.org/>

And here is a specific link on sharing your presentations:

<https://cpb-us-e1.wpmucdn.com/wp.wvu.edu/dist/b/758/files/2016/12/How-To-BBUploadPresentation-1wg8s1l.pdf>

A first trial is envisaged on Friday the 16th of October from 13h00 to 15h00 (Paris time)

General Information

1. Login

Each registrant will receive a **name login** upon registration. **The login is personal and non-transferrable and can only be your name. Company logins are NOT allowed. Non-regular logins will be removed from the online meetings.**

2. Tickets

Non applicable

Extra conference dinner	€
Extra lunch ticket	€

3. Registration

The ESM'2020 Registration will be open online for information and registration info for those already registered and **AT CONFERENCE REGISTRATION CAN ONLY BE DONE ONLINE FOR THOSE STILL WISHING TO REGISTER AS A VIRTUAL PARTICIPANT AT THIS TIME**
<https://www.eurosis.org/conf/esm/2020/email-registration.html>

Wednesday, October 21 8.15 a.m. to 5.00 p. m.
 Thursday, October 22..... 9.00 a.m. to 5.00 p. m.
 Friday, October 23 9.00 a.m. to 9.30 a.m.

4. Conference Proceedings

Each electronic paid registrant will be provided with an electronic copy of the Conference Proceedings. Fully paid onsite participants will be provided with a printed copy of the Conference Proceedings. **This is NOT applicable to students who are not authors and who have not fully registered.**
 (Extra electronic or printed copies are available after **ESM'2020**)

Price: (or equivalent in another currency) for an extra copy

Printed ESM'2020 Proceedings	€ 60 plus 30% shipping costs
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6. Meeting Rooms

The ESM'2020 conference will be held in electronic **rooms designated A (ROOM I) and B (ROOM II)** in this programme.

7. Need Help?

Please contact EUROSIS (philippe.geril@eurosis.org) for your questions

General Information

8. Social Event and Lunches

Non-Applicable

The Conference Dinner
Non-Applicable

9. Room Legend

The parallel meeting rooms will be designated **ROOM A (I)** and **B (II)**.

10. Best Paper Award

During the conference the papers, which were accepted as **extended** papers will be judged by the committee and conference participants in order to choose the best paper of the ESM'2020 conference.

The best paper author of the conference receives a certificate and a free registration to any EUROSIS event held within 2 years after receiving the best paper award. This registration waiver is only VALID FOR 2 YEARS AFTER RECEIPT AND FOR 1 (ONE) PERSON. In case of multiple authors, one (1) author only can use the registration waiver.

Session Chairs information

ALL SESSION CHAIRPERSONS IN THIS PROGRAM ARE PROVISIONAL

Session Chairs are chosen on a voluntary basis by proposals by either authors or local committee members or are appointed by the Track Chairs, General Program Chair or General Conference Chair. They are responsible for their assigned session. They make sure their speakers are available, take care of the timing within the session, chair the discussion after each presentation and introduce each speaker based on the CV's given to them by the authors. **If a session chair is not available then the first author takes on the responsibility to chair** In case they chair a session featuring **extended papers**, then they are required to distribute and collect the reviews of that or those papers at the beginning and end of the session. If they have time they should also indicate in their papers the number of session participants.

THE NUMBERS NEXT TO THE PRESENTATIONS DENOTE THE PAGE-NUMBERS IN THE PROCEEDINGS. IF NO NUMBERS ARE MENTIONED THEN THIS PAPER IS NOT PUBLISHED IN THE PROCEEDINGS

THE AUTHORS WHO ARE UNDERLINED ARE NORMALLY THE PRESENTERS

ONLY PAPERS IN GREY BOXES ARE THE EXTENDED PAPERS ELIGIBLE FOR THE BEST PAPER AWARD

CHECK OUT THE OTHER EUROSIS EVENTS ON OUR WEBSITE:

<http://www.eurosis.org>

WEDNESDAY, 21st OCTOBER 2020

08.15-17.00	ONLINE REGISTRATION	
09.00-09.10	WELCOME BY CLÉMENT FOUCHER – ESM'2020 CONFERENCE CHAIR - ROOM A	
09.10-10.00	KEYNOTE SPEECH BY SIMON SEE - ROOM A	
10.00-10.30	COFFEE BREAK	
10.30-13.00	PARALLEL SESSIONS	
	ROOM A	ROOM B
	CYBER PHYSICAL SYSTEMS MODELLING AND COBOT SIMULATION	HIGH PERFORMANCE COMPUTING
12.30-13.30	LUNCH BREAK	
13.30-14.30	PARALLEL SESSIONS	
	ROOM A	ROOM B
	INVITED SPEECH JEAN-CHARLES MARE	ANALYTICAL AND NUMERICAL MODELLING
14.30-15.00	COFFEE BREAK	
15.00-16.30	PARALLEL SESSIONS	
	ROOM A	ROOM B
	AREA 42 WORKSHOP	DATA MANAGEMENT SIMULATION I
16.30- 18.00	PARALLEL SESSIONS	
	ROOM A	ROOM B
	SIMULATION IN INTEGRATED MANUFACTURING SYSTEMS	DATA MANAGEMENT SIMULATION II AND SIMULATION METHODOLOGY

THURSDAY, 22nd OCTOBER 2020

09.00-17.00	ONLINE REGISTRATION	
09.00-10.00	PARALLEL SESSIONS	
	ROOM A	ROOM B
	INVITED SPEECH ALEXANDRE MUZY	AI BASED FINANCIAL FORECASTING
10.00-10.30	COFFEE BREAK	
10.30-13.00	PARALLEL SESSIONS	
	ROOM A	ROOM B
	SIMULATION IN INDUSTRIAL ENGINEERING	RISK MANAGEMENT I
12.30-13.30	LUNCH BREAK	
13.30-15.00	PARALLEL SESSIONS	
	ROOM A	ROOM B
	WORKSHOP CYBERFACTORY I#	AR TUTORIAL
15.00-15.30	COFFEE BREAK	
15.00-18.00	PARALLEL SESSIONS	
	ROOM A	ROOM B
	SIMULATION METHODOLOGY FOR INTEGRATED MANUFACTURING SYSTEMS AND RISK MANAGEMENT II	SIMULATION IN BIOLOGY AND MEDICINE
19.30 – 22.30		

FRIDAY, 23rd OCTOBER 2020

09.00-09.30	ONLINE REGISTRATION	
09.00-10.00	PARALLEL SESSIONS	
	ROOM A	ROOM B
	INVITED SPEECH JERZY RESPONDEK	HOSPITAL LOGISTICS OPTIMIZATION
10.00-10.30	COFFEE BREAK	
10.30 13.00	PARALLEL SESSIONS	
	ROOM A	ROOM B
	SIMULATION IN ENERGY AND WATER SUPPLIES	IOT BASED CLOUD SIMULATION
13.00-13.15	CLOSING SESSION AND BEST PAPER AWARD ROOM A –	

Notes

NOTES

Wednesday, 21st October 2020

Online Registration

08.15 - 17.00

ROOM A

09.00 – 09.10

Opening ESM'2020 and Welcome

Welcome Address

Clément Foucher, LAAS-CNRS, Toulouse, France

ESM'2020 General Conference Chair

ROOM A – 09.15-10.00

KEY

KEYNOTE SPEAKER

Chair: Clément Foucher, LAAS-CNRS, Toulouse, France



KEY_01

[Pathway to General Artificial Intelligence: Simulation for AI and AI for Simulation](#)

Simon See, Senior Director, Nvidia AI Technology Center

Welcome

Wednesday, 21st October 2020

10.00 - 10.30
COFFEE BREAK

10.30 – 13.00

ROOM A – 10.30-13.00 **CYBER-ROB**
**CYBER PHYSICAL SYSTEMS MODELLING AND COBOT
 SIMULATION**
 Chair: Claude Baron, LAAS, Toulouse, France

CYBER_METH_01
**A Formal Framework for Modeling and Prediction of Aircraft Operability
 using SysML**
Sagar Shenoy Manikar, Pierre de Saqui-Sannes, Joël Jézégou,
 Emmanuel Bénard and Philippe Asseman 199

CYBER_METH_02
Towards Digital Twins for Optimizing the Factory of the Future
Patrick Eschemann, Philipp Borchers, Linda Feeken, Ingo Stierand,
 Jan Stefan Zernickel and Martin Neumann..... 208

CYBER_METH_05_IOT
**Inter-Organizational Perspective to Cyber-Physical System Modelling
 in Industrial Production**
Markku Mikkola and Markus Jähi 216

AI_06
**On the Recognition and Analysis of selected Emotional States in the
 Artificial Intelligence of Social Robots**
 Wiktoria Alicja Janiaczyk, Eryka Probiez and Adam Gałuszka.....223

AGENT_06_ROB
Warehouse Model for Interaction Planning of Mobile Robots
Tomasz Grzejszczak, Władysław Krzyżanowski and Adam Gałuszka 229

ROOM B – 10.30-12.00 **HPC**
HIGH PERFORMANCE COMPUTING
 Chair: Clément Foucher, LAAS-CNRS, Toulouse, France

Wednesday, 21st October 2020

HPCN_01

Pilot-Job Provisioning through Cream Computing Elements on the Worldwide LHC Computing Grid

Alexandre F. Boyer, David R.C. Hill, Christophe Haen and Federico Stagni 33

HPCN_02

Repeatability with Random Numbers using Algorithmic Skeletons

Alexis Pereda, David R.C. Hill, Claude Mazel and Bruno Bachelet 39

DEVS_01

Interpreting the PDEVS Formalism and Algorithms to enhance the State Handling Mechanism

Clément Foucher 47

12.30 - 13.30

LUNCH BREAK

13.30 – 14.30

ROOM A – 13.30-14.30

KEY

INVITED SPEAKER

Chair: Claude Baron, LAAS, Toulouse, France



KEY_03

[Best Practices for efficient Simulation-Aided Engineering](#)

Jean-Charles Mare, INSA Dpt Mécanique, Toulouse, France

ROOM B – 13.30-14.30

ANMT

ANALYTICAL AND NUMERICAL MODELLING

Chair: Clément Foucher, LAAS-CNRS, Toulouse, France

ANMT_01

OPENMP, Multi-Threaded Libraries for Numerical Linear Algebra and the FMM in an Acceleration of Numerical Solving of the Pies

Andrzej Kuźelewski and Eugeniusz Zieniuk 21

Wednesday, 21st October 2020

ANMT_02

Numerical Modelling of Diffraction by a Strip with Different Surface Impedances

Volodymyr Emets and Jan Rogowski 27

14.30 - 15.00

COFFEE BREAK

15.00 – 16.30

ROOM A – 15.00-16.30

WORKSHOP

AREA42 WORKSHOP

Chairs: Felix Garriau, Kenneth Van den Bergh and D. Van Nieuwenhuyse

The workshop will consist of 3 parts:

Introduction: **The disruption of trade & the rise of #tradetech (15 minutes)**

Workshop: **Trade data modelling challenges (60 minutes)**

Conclusion & Next Steps **(15 minutes)**

ROOM B – 15.00-16.30

MGMT

DATA MANAGEMENT SIMULATION I

Chair: Clément Foucher, LAAS-CNRS, Toulouse, France

METH_02_ISC

Using Multilevel Random Coefficient Models to Analyze ordinal Responses

Liberato Camilleri..... 55

METH_04_AI_STUD

Application of Time-Universal Codes to Time Series Forecasting

Konstantin Chirikhin..... 60

METH_01

Modelling of Situation Awareness in Net-Centric Commercial Systems

Alexander Fridman and Andrey Oleynik 64

16.30 – 18.00

Wednesday, 21st October 2020

ROOM A- 16.30-18.00 **MANUF**
SIMULATION IN INTEGRATED MANUFACTURING SYSTEMS
Chair: Claude Baron, LAAS, Toulouse, France

SIM_ENG_02
Assistance System for the Automated Composition and Configuration of a co-Simulation
Christian Härle, Mike Barth and Alexander Fay 155

OPT_07_LOGIS
A Conceptual Framework for the Integration of Assembly Line Feeding and Route Building
Ebenezer O. Adenipekun, Veronique Limère and Nico A. Schmid 163

TRANS_01_ISC
Comparison of Material Flow Models and Acceleration of the Macroscopic Flow Model for Virtual Commissioning
Annika Kienzlen and Alexander Verl 168

ROOM B- 16.30-18.00 **MGMT-METH**
DATA MANAGEMENT SIMULATION II - SIMULATION METHODOLOGY
Chair: Alexandre Nketsa, LAAS, Toulouse, France

MC_01_MIL
Monte Carlo Simulation of Interstate War from 1816 to 2007
Vaughn H. Standley, Frank G. Nuño, Jacob W. Sharp and George J. Trawick 68

METH_03_PETRI
An Event Clustering Method for discovering Switch Silent Transitions in a Class of Petri Nets
Cristian García-Urbe and Ernesto López-Mellado 5

OPT_04
Optimizing the Height of the Routing Tree in WSNs
Sofiane Elmahroug, Ali Balma and Abderrazak Jemai 13

18.00 -
FREE EVENING

Thursday, 22nd October 2020

Online Registration

09.00 - 17.00

09.00 – 10.00

ROOM A- 09.00-10.00

KEY

KEYNOTE

Chair: Clément Foucher, LAAS-CNRS, Toulouse, France



KEY_02

[Modeling and Simulation of Behavioral and Neuronal Activities for the Design of New Algorithms capturing the Learning Process Dynamics](#)

Alexandre Muzy, Université Côte d'Azur, (I3S) - UMR7271 - UNS CNRS, Sophia Antipolis, France

ROOM B- 09.00-10.00

AI FIN

AI BASED FINANCIAL FORECASTING

Chair: Alexandre Nketsa, LAAS, Toulouse, France

AI_01

Short Time Series of Share Prices with Financial Results in Day-Ahead Forecast –The Warsaw Stock Exchange Main Market Example

Adam Galuszka, Tomasz Dzida, Katarzyna Klimczak, Karol Jedrasiak

and Tomasz Wisniewski 115

AI_02

LSTM Network with Reinforced Learning in Short and Medium Term Warsaw Stock Market Index Forecast

Adam Galuszka, Tomasz Dzida, Katarzyna Klimczak, Karol Jedrasiak

and Tomasz Wisniewski 118

10.00 – 10.30

COFFEE BREAK

Thursday, 22nd October 2020

10.30 - 13.00

ROOM A- 10.30-12.30 **ENG**

SIMULATION IN INDUSTRIAL ENGINEERING

Chair: Clément Foucher, LAAS-CNRS, Toulouse, France

SIM_ENG_01

Simulation of Slowly Varying Oscillations in Cold Rolling Mills

Pavel Ettlér 237

SIM_ENG_05

**Fractional Control System Simulation to Modernize a Locomotive
Dual-Fuel Engine**

Anton Ivaschenko, Vladimir Avsievich and Alexandr Avsievich 242

SIM_ENG_03

**Versatile Inverse Dynamics Framework for the Cross Application Simulation
of Rigid Body Systems**

Tobias Osterloh and Jürgen Roßmann 245

AI_04_NEURAL

**Predicting the Transmission of Fore-and-Aft Vibration to the Head of Seated
and Standing Subjects using an Artificial Neural Network**

Naser Nawayseh and Mohammad AlShabi 253

ROOM B- 10.30-13.00 **MGMT**

RISK MANAGEMENT I

Chair: Alexandre Nketsa, LAAS, Toulouse, France

DATAMIN_03_ISC

**Social Tension Detection on Social Media Textual Data: A Literature
Review**

Nurul Syafidah Jamil, Siti Sakira Kamaruddin, Farzana Kabir Ahmad
and Chrissanthi Angeli 77

TOOLS_01_ISC

A Predictive Risk Model based on Social Network Analysis

Marco Nunes, António Abreu, Ana Dias and José Duarte Moleiro Martins 82

Thursday, 22nd October 2020

EMERG_03

Developing an Emergency Information System: A Literature Review

K. Papatheodosiou and C.Angeli..... 87

EMERG_01

Use of Constructive Simulation in Preparation of Crisis Management Personnel for Solving Crisis Events

Michaela Jánošíková, Jozef Ristvej, Katarína Zábovská and Maroš Lacinák..... 92

AGENT_04_MIS

War Games, Simulation and CI Tools for Strategic Planning

Andrzej Najgebauer..... 98

12.30 – 13.30

LUNCH BREAK

13.30 - 15.00

ROOM A – 13.30-15.00

WORKSHOP

WORKSHOP ITEA Project "CyberFactory#1"

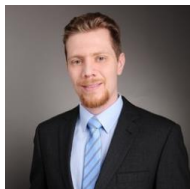
Chair: Alexandre Nketsa, LAAS, Toulouse, France



KEY_05

[Introduction to CyberFactory#1](#)

Adrien Bécue, Head of Innovation, Airbus Cybersecurity, Elancourt, France



KEY_06

[Requirements on Digital Models and Simulation in Resilient Factories of the Future](#)

Matthias Glawe, Security Architect ICS, Airbus Cybersecurity GmbH, Hamburg, Germany

Thursday, 22nd October 2020



KEY_07

[Introduction to Cyber Factory#1 uses of Digital Twin](#)

Isabel Praça, Professor at ISEP and Researcher at GECAD, Porto, Portugal

ROOM B – 13.30-15.00

TUT

AR TUTORIAL

Chair: Clément Foucher, LAAS-CNRS, Toulouse, France



TUT_01

[AR Learning](#)

Prof. Matt Glowatz, UCD, Quinn School of Business, Dublin, Ireland

- This tutorial focusses on research addressing the opportunities and challenges of creating innovative learning spaces for the 21st century. In particular, we will be discussing
- The new learner characteristics
- Opportunities and challenges for the education sector
- Creating innovative learning spaces for the 21st century
- Augmented Reality (AR) in education
 - An overview
 - Technologies
 - Opportunities
 - Case Study

15.00 - 15.30

COFFEE BREAK

15.30 – 18.30

ROOM A – 15.30-18.00

MANUF

**SIMULATION METHODOLOGY FOR INTEGRATED
MANUFACTURING SYSTEMS AND RISK MANAGEMENT II**

Chair: Clément Foucher, LAAS-CNRS, Toulouse, France

Thursday, 22nd October 2020

METH_06 Discrete Event Simulation Framework for Demand Driven MRP Performances Evaluation <u>Stephanie Bayard</u> , <u>Frederic Grimaud</u> and <u>Xavier Delorme</u>	131
---	------------

METH_05 Efficient Verification of Reconfigurable Discrete-Event System using Isabelle/Hol Theorem Prover <u>Sohaib Soualah</u> , <u>Mohamed Khalgui</u> , <u>Allaoua Chaoui</u> , <u>Laid Kahloul</u> and <u>Yousra Hafidi</u>	139
--	------------

OPT_02_LOGIS Production Line Balancing and a Statistical Optimization Discussion <u>William Conley</u>	125
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METH_01_ISC Input Analysis with Statistical Optimization <u>William Conley</u>	147
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METH_06_ISC Managing and Mitigating the Asteroid Threat <u>William Conley</u>	106
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ROOM B – 15.00-18.00	BIO
SIMULATION IN BIOLOGY AND MEDICINE	
Chair: <u>Alexandre Nketsa</u>, LAAS, Toulouse, France	

BIO_01_NEURAL Exploring Protein Folding Space with Neural Network Guided Simulations <u>Aleš Krenek</u> , <u>Jana Hozzová</u> , <u>Jaroslav Ořha</u> , <u>Dalibor Trapl</u> and <u>Vojtěch Spiwok</u>	305
---	------------

AGENT_01_BIO Simulating Infection Transmission: A Case Study of COVID-19 <u>Mina Abadeer</u> and <u>Sergei Gorlatch</u>	310
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AGENT_02_METH_BIO A Framework for Validating and Testing Agent Based Models: A Case Study from Infectious Diseases Modelling <u>Elizabeth Hunter</u> and <u>John D. Kelleher</u>	318
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Thursday, 22nd October 2020

PRED_01

Towards the Modelling of the Concentrated State of Learners. An Intra-Subject Modelling Approach

Ana Serrano-Mamolar, Miguel Arevalillo-Herráez
and Jesús González-Boticario 324

AI_09_NEURAL

Machine Learning Approach to Data Preparation in Object Recognition by Convolutional Neural Network

Weronika Westwańska and Jerzy Respondek..... 329

DATAMIN_01_ISC

A Software for Plant Species Recognition using Artificial Intelligence

Eleni Mangina, Elizabeth Burke, Ronan Matson, Joe M. Caffrey
and Mohammad Saffari 335

19.30 - 22.30

CONFERENCE DINNER – 19.30 -22.30

Non-applicable

Friday, 23rd October 2020

Online Registration

09.00 - 09.30

09.00 – 10.00

ROOM A – 09.00-10.00 **KEY**

INVITED SPEAKER

Chair: Clément Foucher, LAAS-CNRS, Toulouse, France



KEY_04

[Matrix Black-boxed Algorithms](#)

Jerzy Respondek, Silesian Univ.of Technology, AEI Faculty, Gliwice, Poland

ROOM B – 09.00-10.00 **HOS**

HOSPITAL LOGISTICS OPTIMIZATION

Chair: Alexandre Nketsa, LAAS, Toulouse, France

TOOLS_01_OPT_HOS

New Optimisation Model for Operating Room scheduling: Case Study

Mariam Belhor, Adnen E-Amraoui, Farid Naït-Abdesselam, Abderrazak Jemai and François Delmotte **293**

METH_03_ISC

Ontology-Based Framework for Healthcare Systems Simulation

Ignace Djitog and Muhammadou M. O. Kah..... **298**

10.00 - 10.30

COFFEE BREAK

Friday, 23rd October 2020

10.30 – 13.00

ROOM A – 10.30-13.00 **ENERG**

SIMULATION IN ENERGY AND WATER SUPPLIES

Chair: Clément Foucher, LAAS-CNRS, Toulouse, France

PRED_SIM_01_ISC

Web-Based Intelligent Knowledge-Based Energy Retrofit Recommendation System

Gavin Morris, Usman Ali and Eleni Mangina 261

SIM_ENERG_01

Optimising Power Systems by Automating Large Sets of Simulations

Samuel Marrero-Vera, Tomás D. Reyes-Sánchez, José Juan Hernández-Cabrera and José Évora-Gómez 266

SIM_ENERG_03

Optimal Load-Follow Control for Nuclear Power Plants

Janos Sebestyen Janosy 272

OPT_05_ENERG_LOGIS

A Hybrid Strategy for Mixed Integer Bi-Level Optimization applied to Hydrogen Energy Supply Chain Management

Jose Manuel Flores-Perez, Catherine Azzaro-Pantel, Antonin Ponsich and Alberto A. Aguilar Lasserre 277

METH_05_ISC

Methods for detecting and locating Water Leaks in Water Supply Systems

Arkadiusz Bieniek and Jan Studziński 282

ROOM B – 10.30-12.00 **CLOUD**

IOT CLOUD BASED SIMULATION

Chair: Alexandre Nketsa, LAAS, Toulouse, France

CLOUD_01

A Combinatorial Mechanism for Data Security in Public Cloud Computing

Zied Trifa, Sonia Amamou and Maher Khemakhem 179

IOT_02_ISC

Hybrid Architecture for the Control of Industrial IOTS

Shiming Liu, Daniel Roy and Sophie Hennequin 186

Friday, 23rd October 2020

IOT_01_ISC

Epidemiological Models of Phenomena Propagation in IIOTS

Sophie Hennequin, Aimé Nyoungue and Josephine Wairimu K. 191

ROOM A – 13.00 - 13.15

BEST PAPER

CLOSING SESSION AND BEST PAPER AWARD

Chair: Claude Baron, LAAS, Toulouse, France

Claude Baron, LAAS, Toulouse, France

Philippe Geril, EUROSIS, Ostend, Belgium

ESM'2021



**SEE YOU ALL AT
ESM'2021, October 2021**

(exact dates to be confirmed shortly)

Rome, Italy

**Track proposals and tutorial proposals can be sent in by
January 30th, 2021**

**Proposals for future ESM locations can be emailed to
philippe.geril@eurosis.org**

Other upcoming EUROSIS conferences

**[MESM'2020](#), December 16-17, 2020, Philadelphia University, Jordan
SCIFI-IT'2021 to be announced shortly**

ISC'2021, June 2-4, 2021, University of Malta, Valletta, Malta

**GAME-ON'2021, September 23-25, 2020, Department of
Communication and Art, University of Aveiro, Aveiro, Portugal**

**ESM'2021, October 2021, [Link Campus University](#), Rome, Italy
(exact dates to be communicated shortly)**

ISC'2022, June 2022, UCD, Dublin, Ireland

ESM'2021 - Rome - Italy



EUROSIS was borne out of discussions with the European Community to set up a new kind of Society, which would be project-driven instead of driven by pure membership and conferences.

The aim of the Society is to set up and manage topic related Technical Committees which will link directly to European Projects in the field of computer simulation and related areas and to act as a knowledge pool for future European Networks of Excellence, like MOSAIC, HORIZON2020 by seeking out the latest innovations in simulation, modelling and AI research.

If you would like to receive more information about EUROSIS, please contact

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