



THE SOCIETY FOR
MODELING & SIMULATION
INTERNATIONAL

SUMMERSIM

Summer Simulation Multi-Conference 2018

JULY 9-12, 2018

University of Bordeaux, Bordeaux, France



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2018 SummerSim

Program

**M&S as a Discipline: the Essential M&S
Toolbox**

**July 9-12, 2018
University of Bordeaux**

**General Chair
Andrea D'Ambrogio**

**General Co-Chair
Umut Durak**

**Program Chair
Gregory Zacharewicz**

Welcome to SummerSim '18

Welcome from the SummerSim'18 Chairs

On behalf of the Organization Committee, we are delighted and honored to welcome you to the Summer Simulation Multi-Conference 2018 (SummerSim'18) in the beautiful city of Bordeaux, France.

Bordeaux is a port city on the Garonne River, in Southwestern France, and is the world's major wine industry capital. It is home to the world's main wine fair, Vinexpo, and the wine economy in the metro area takes in 14.5 billion euros each year. Bordeaux wine has been produced in the region since the 8th century. Bordeaux is labelled as a "City of Art and History" and its historic part is on the UNESCO World Heritage Sites list as "an outstanding urban and architectural ensemble" of the 18th century. After Paris, Bordeaux has the highest number of preserved historical buildings of any city in France.

SummerSim is organized by the Society for Modeling & Simulation International (SCS), the oldest Modeling and Simulation society in the world, which, from its foundation in 1952, promotes the advancement of Modeling and Simulation and connect Modeling and Simulation professionals worldwide. SummerSim is SCS's premier international conference in cooperation with ACM SIGSIM. The conference focuses on modeling and simulation, tools, theory, methodologies and applications and provides a forum for the latest R&D results in academia and industry. The SummerSim'18 program includes an excellent selection of peer-reviewed papers, presentations, distinguished keynote speeches and tutorials. We would like to thank our sponsors that have donated funds to an enhanced conference experience for our delegates. We sincerely thank the University of Bordeaux, IMS Lab – UMR CNRS 5218 and Cluster SysNum IDEX.

We would also like to thank our keynote speakers **Wil van der Aalst** and **Andreas Tolk**, for graciously accepting to share their vast knowledge and experiences with us. Wil van der Aalst is full professor at RWTH Aachen University, where he is leading the Process and Data Science (PADS) group, and one of the most cited computer scientists in the world. He will give a keynote on "Process Mining and Simulation: A Match Made in Heaven!" Andreas Tolk is Technology Integrator for the Modeling, Simulation, Experimentation, and Analytics Division of the MITRE Corporation and Adjunct Professor at Old Dominion University. He is a Fellow of SCS and will give a keynote on "Simulation and Modeling as the Essence of Computational Science".

Our thanks also go to all members of the Organization Committee for their dedicated and tireless effort. It was truly a team effort. The committee consists of:

General Chair	Andrea D'Ambrogio, University of Rome Tor Vergata, Italy
General Co-Chair	Umut Durak, German Aerospace Center (DLR), Germany
Program Chair	Gregory Zacharewicz, University of Bordeaux, France
Proceedings Co-Chairs	Jose Padilla, ODU, USA and Christopher Lynch, ODU, USA

Welcome to SummerSim '18

Publicity Co-Chairs	Alfredo Garro, University of Calabria, Italy and Jose Padilla, ODU, USA
Tutorial Chair	Marco Lützenberger, TU Berlin, Germany
Student Colloquium Chair	Alberto A. Del Barrio, Complutense University of Madrid, Spain
Work-in-Progress Co-Chairs	Okan Topçu, METU NCC, Turkey and Bilge Kaan Görür, Roketsan Inc., Turkey
Awards Chair	José Luis Risco Martín, Complutense University of Madrid, Spain

As a Multi-Conference, our success depends heavily on the Conference chairs, whose invaluable effort has been the key to the success of the overall Multi-Conference. This year's Conference chairs are:

- 50th Summer Computer Simulation Conference (SCSC 2018), chaired by Umut Durak, German Aerospace Center (DLR), Germany. This year SCSC celebrates its 50th edition by organizing a Golden Jubilee panel on "50 Summers of Computer Simulation", and introduces two new tracks, namely Applied Theory of Modeling and Simulation (AToMS) and Modeling and Simulation in Engineering Education (MSEE).
- 21st International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS 2018), chaired by Helena Szczerbicka, Leibniz University of Hannover, Germany.
- 13th International Conference on Bond Graph Modeling (ICBGM 2018), chaired by Jose J. Granda, California State University, USA.

We would also like to express our gratitude to the SCSC 2018 Program Chair, Gregory Zacharewicz (University of Bordeaux, France), and to the SPECTS 2018 Program Co-Chairs, Malamati Louta (University of West Macedonia, Greece) and Joaquin Entrialgo (University of Oviedo, Spain), for providing their expert and essential contribution to the exciting program of this year SummerSim.

Additionally, thanks to all track chairs for promoting the research topics of their tracks and for carrying out the papers review and selection process. We are very grateful to program committee members and to all the volunteers that have dedicated their time and effort to review and edit all submissions, thus making it possible to setup a program of selected and high quality presentations. We also express our gratitude to authors and tutorial presenters for submitting their relevant work to SummerSim.

Special thanks go to the SCS Executive Director, Oletha Darensburg, and her staff, Carmen Ramirez, for the expert and smooth running of conference coordination activities.

Our sincere and profound gratitude goes finally to Prof. Saikou Y. Diallo, Vice President for SCS Conferences, for his exceptional support in shaping various things for SummerSim over the organization process.

Welcome to SummerSim '18

SummerSim'18 is hosted by the University of Bordeaux, which is ranked among the top French universities for the quality of its education and research. A multidisciplinary, research-focused, international institution that leads an ambitious development program with its partners to further promote Bordeaux as a "Campus of Excellence".

Once again welcome to Bordeaux and thank you for making SummerSim'18 a success through your participation. We look forward to your continued participation in SummerSim'19.

Andrea D'Ambrogio

General Chair

University of Rome Tor Vergata

Italy

Umut Durak

General Co-Chair

German Aerospace Center (DLR)

Germany

Gregory Zacharewicz

Program Chair

University of Bordeaux

France

The image shows three handwritten signatures in black ink. From left to right: the first signature is for Andrea D'Ambrogio, the second is for Umut Durak, and the third is for Gregory Zacharewicz. The signatures are written in a cursive, flowing style.

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GENERAL INFORMATION

General Information

SummerSim'18

The Summer Simulation Multi-Conference 2018 (SummerSim'18) is a combination of the Summer Computer Simulation Conference (SCSC), the International Symposium on Performance Evaluation of Computer and Telecommunications Systems (SPECTS) and the International Conference on Bond Graph Modeling (ICBGM) located at University of Bordeaux -35 Place, Pey Berland, 33000 Bordeaux, France.

SummerSim'18 Organizing Committee

General Chair: Andrea D'Ambrogio, Univeristy of Rome Tor Vergata, Italy

General Co-Chair: Umut Durak, German Aerospace Center, Germany

Program Chair: Gregory Zacharewicz, Univeristy of Bordeaux, France

Proceedings Chairs: Jose Padilla, ODU, USA and Christopher Lynch, ODU, USA

Publicity Chairs: Alfredo Garro, University of Calabria, Italy and Jose Padilla, ODU, USA

Tutorial Chair: Marco Lützenberger, TU Berlin, Germany

Student Colloquium Chair: Alberto A. Del Barrio, Complutense University of Madrid, Spain

Awards Chair: José Luis Risco Martin, Complutense University of Madrid, Spain

SummerSim'18 Steering Committee

Floriano de Rango, University of Calabria, Italy

Saurabh Mittal, The MITRE Corporation, USA

Justyna Zander, Mathworks Inc., USA

2018 Summer Computer Simulation Conference (SCSC 2018)

SCSC 2018 features varied tutorials, tracks, and workshops. The conference focuses on modeling and simulation, tools, theory, methodologies and applications, providing the latest R&D results in academia and industry.

General Chair: Umut Durak, German Aerospace Center, Germany

Program Chair: Gregory Zacharewicz, Univeristy of Boardeaux, France

Tracks

- Agent-based Modeling and Simulation (ABMS)
Chair: Anastasia Anagnostou
- Computer Graphics for Simulation (CGS)
Chairs: John F. Richardson and Torsten Gerlach

General Information

2018 Summer Computer Simulation Conference (SCSC 2018)

Tracks Continued

- **Applied Theory of Modeling and Simulation (AToMS)**
Chairs: José Luis Risco Martin and Olivier Dalle
- **Emergency Management Simulation (EMS)**
Chairs: Francesco Longo and Letizia Nicoletti
- **Grand Challenges in Modeling and Simulation (GCMS)**
Chairs: Ali Elkamel, Chandramouli R. Madhuranthakam, and Hedia Fgaier
- **Modeling and Simulation of Complex, Intelligent, Adaptive and Autonomous Systems (MSCIAAS)**
Chairs: Saurabh Mittal and Marco Lützenberger
- **Modeling and Simulation as a Service (MSaaS)**
Chairs: Andrea D'Ambrogio and Robert Siegfried
- **Modeling and Simulation in Engineering Education (MSEE)**
Chairs: Gunter Brenner and Alejandra J. Magana
- **Simulation in the System Design Flow (SDF)**
Chairs: Alberto A. Del Barrio and Seda Ogrenci Memik
- **Verification and Validation of Computer Simulation Models (V&V)**
Chairs: Miroslav Velev and Umut Durak
- **Work in Progress (WIP)**
Chairs: Okan Topcu and Bilge Kaan Gorur
- **Student Colloquium**
Chairs: Alberto A. Del Barrio and Youssef Bouanan

International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS 2018)

This annual international conference is a scientific forum for professionals and scientists involved in performance evaluation of computer and telecommunication systems.

General Chair: Helena Szczerbicka, University of Hannover, Germany

Program Co-Chairs: Malamati Louta, University of Western Macedonia, Greece and Joaquin Entrialgo, University of Oviedo, Spain

Publication Chair: Sebastien Gougeau, Li-PaRAD, Univeristy of Versailles, France

General Information

International Conference on Bond Graph Modeling (ICBGM 2018)

The International Conference on Bond Graph Modeling and Simulation brings together research paper presentations, panel sessions, tutorials, workshops, seminars, industrial applications, and software demonstrations that use Bond Graph modeling methods.

General Chair: Jose J. Granda, California State University, USA and Dean Karnopp, University of California, Davis, USA

Tutorials

Monday, July 9, 2018

Room: Salle RG

Introduction to Classic DEVS:

Yentl van Tendeloo and Hans Vangheluwe

Time: 08:30-09:30

An Introduction to Statecharts Modeling and Simulation:

Simon van Mierlo and Hans Vangheluwe

Time: 09:30-10:30

Co-Simulation of Continuous Systems: A Tutorial: Claudia Gomes, Casper Thule, Joachim Denil and Hans Vangheluwe

Time: 11:00-12:00

Room: Salle 1L

How Valid is Your Simulation Model? Learn to Apply Metamorphic, Testing to Increase Confidence on Your Simulation:

Time: 08:30-09:30

Mohammad Raunak and Megan Olsen

Quantifying Simulation Validation through Validation Coverage:

Megan Olsen and Mohammad Raunak

Time: 09:30-10:30

Introduction to Modeling and Simulation of Spatial Systems with DEVS and Cell-DEVS:

Gabriel Wainer

Time: 11:00-12:00

Room: Salle 1F

Low Power Wide Area Networks for the Internet of Things: Framework, Performance Evaluation, and Challenges of LoRaWAN and NB-IoT:

Time: 08:30-10:00

Samer Lahoud and Melhem El Helou

Simulation Modeling and Implementation: A Hands-On Approach Using Event Graphs and Python-Part 1:

Time: 10:00-10:30

Yahya E. Osais

Simulation Modeling and Implementation: A Hands-On Approach Using Event Graphs and Python-Part 2:

Time: 11:00-12:00

Yahya E. Osais

Room: Salle 2B

Getting Started with Bond Graph Method for Modeling and Simulation:

Jose J. Granda

Time: 08:30-10:00

General Information

Registration

Your registration for the 2018 Summer Simulation Multi-conference (SummerSim'18) includes AM and PM breaks, the Monday evening reception and all social mixers, and access to all sessions, tutorials and special presentations (unless otherwise noted). Event location is University of Bordeaux-35 Place, Pey Berland, 33000 Bordeaux, France

Registration Hours—PJJ Pey Berland Main Hall (Monday—Wednesday):

Monday, July 9th 07:45–17:00

Tuesday, July 10th 07:45–17:00

Wednesday, July 11th 08:00–14:00

Please note that the Registration Desk will be closed for lunch Mon through Wed 12:00-13:30

Breaks

Monday, July 9th:

Breakfast: 08:00 Breaks: 10:30–11:00 | 15:00-15:30

Tuesday, July 10th:

Breakfast: 07:30 Breaks: 10:00–10:30 | 15:45-16:15

Wednesday, July 11th:

Breakfast: 07:30 Breaks: 10:00-10:30 | 15:45-16:15

Breakfast

Breakfast will be held Monday 08:00 – 08:30, and Tuesday and Wednesday, 7:30-08:00 located Salle 1K. Attendees can meet their chairs at breakfast each morning before their presentation.

General Information

Keynotes/Plenary

Welcome & Keynotes/Plenary Sessions *Amphitheatre, Duguit*

Monday Plenary:	13:00-13:30	Welcome and Opening
Tuesday Plenary:	08:00-08:30	Remembering Norbert
	08:30-09:30	Keynote 1 Session & Plenary: Andreas Tolk
	09:30-10:00	Best Paper Awards
	13:00-14:00	Keynote SPECTS: Mohamad S. Obaidat, Location: Salle RG
Wednesday Plenary:	09:00-10:00	Keynote 2 Session & Plenary: Wil van der Aalst
	13:00-14:00	Keynote ICBGM: Donald Margolis

Tuesday, 10th July-Evening Events

18:15-18:20	Meeting at Registration Desk to Walk to City Hall
18:30-19:00	Social at Bordeaux City Hall
19:00-19:15	Walk Back to Conference Building
19:30-20:45	SCS Evening Social with lite hors d'oeuvre

All attendees and their guests are invited to attend the events.

Notes

KEYNOTES

Keynote Speaker



Date: Tuesday, July 10, 2018

Time: 08:30-09:30

Location: Amphitheatre, Duguit

Author: Andreas Tolk, Ph.D.

Presentation Title: Simulation and Modeling as the Essence of Computational Science

Presentation Abstract: Recent developments of computational methods supporting scientific research have led to the rise of a variety of computational science disciplines, such as computational physics, computational biology, computational chemistry, computational social science, and many more.

Although simulation is now widely regarded as the third pillar of science, with epistemological status comparable to formal theorizing and experimentation, the insight that computational science is as interwoven with simulation as traditional science is with modeling has not yet been sufficiently communicated. As a result, important insights from the modeling and simulation discipline are not known or ignored by traditional scientists entering the computational branch of their discipline.

This presentation contributes to closing this gap by giving examples of how modeling and simulated based research contributes to improve computational sciences, including having a look at the supporting philosophy of science perspectives.

Keynote Speaker

Andres Tolk , Ph.D. Continued

Biography: Andreas Tolk is Technology Integrator for the Modeling, Simulation, Experimentation, and Analytics Division of the MITRE Corporation and Adjunct Professor at Old Dominion University. He holds a PhD and M.Sc. in Computer Science from the University of the Federal Armed Forces in Munich, Germany. He published more than 250 journal articles, book chapters, and conference papers and edited nine textbooks and compendia on Modeling and Simulation and Systems Engineering topics. He is a senior member of ACM and IEEE and a Fellow of SCS.

Keynote Speaker



Date: Wednesday, July 11, 2018

Time: 09:00-10:00

Location: Amphitheatre, Duguit

Author: Wil van der Aalst, Ph.D.

Presentation Title: Process Mining and Simulation: A Match Made in Heaven!

Presentation Abstract: Event data are collected everywhere: in logistics, manufacturing, finance, healthcare, customer relationship management, e-learning, e-government, and many other domains. The events found in these domains typically refer to activities executed by resources at particular times and for particular cases. Process mining provides a novel set of tools to exploit such data. Event data can be used to discover the real processes, to detect deviations from normative processes, and to analyze bottlenecks and waste. However, process mining tends to be backward-looking. Fortunately, simulation can be used to explore different design alternatives and to anticipate performance problems. Through simulation experiments various “what if” questions can be answered and redesign alternatives can be compared with respect to key performance indicators.

Keynote Speaker

Wil van der Aalst, Ph.D. Continued

However, making a good simulation model may be very time consuming and models may be outdated by the time they are ready. Therefore, process mining and simulation complement each other well. In his talk, Wil van der Aalst will argue that process mining and simulation form a match made in heaven. He will introduce process mining concepts and show (1) how to discover simulation models, (2) how to view real and simulated event data in a unified manner, and (3) how to make process mining more forward-looking using simulation. He will also explain how his team applied process mining in over 150 organizations, developed the open-source tool ProM, and influenced the 20+ commercial process mining tools available today.

Biography: Prof.dr.ir. Wil van der Aalst is a distinguished university professor at the Technische Universiteit Eindhoven (TU/e) where he is also the scientific director of the Data Science Center Eindhoven (DSC/e). Since 2003 he holds a part-time position at Queensland University of Technology (QUT). Currently, he is also a visiting researcher at Fondazione Bruno Kessler (FBK) in Trento and a member of the Board of Governors of Tilburg University. His personal research interests include process mining, Petri nets, business process management, workflow management, process modeling, and process analysis. Wil van der Aalst has published over 200 journal papers, 20 books (as author or editor), 450 refereed conference/workshop publications, and 65 book chapters. Many of his papers are highly cited (he one of the most cited computer scientists in the world; according to Google Scholar, he has an H-index of 135 and has been cited over 80,000 times) and his ideas have influenced researchers, software developers, and standardization committees working on process support. Next to serving on the editorial boards of over 10 scientific journals he is also playing an advisory role for several companies, including Fluxicon, Celonis, and ProcessGold. Van der Aalst received honorary degrees from the Moscow Higher School of Economics (Prof. h.c.), Tsinghua University, and Hasselt University (Dr. h.c.). He is also an elected member of the Royal Netherlands Academy of Arts and Sciences, the Royal Holland Society of Sciences and Humanities, and the Academy of Europe. Recently, he was awarded with a Humboldt Professorship, Germany's most valuable research award (five million euros), and will move to RWTH Aachen University at the beginning of 2018.

Keynote Speaker



Date: Tuesday, July 10, 2018

Time: 13:00-14:00

Location: Salle IL

Author: Mohammad S. Obaidat, Ph.D.

Presentation Title: Trends and Challenges in the Key Enabling Technologies of Smart Cities and Homes and Samples of Our Research Outcomes

Presentation Abstract: Smart homes and cities have become an important research and development area in the 21st century due mainly to their significance to national and international health, economy, safety, transportation, and security, among others. ICT Systems have played a vital role in the emergence and development of smart cities and homes. The impressive advances in areas of information and wired and wireless communications technology have brought with them the prospect of embedding different hierarchies of smartness and intelligence in modern home and cities. Offering comfort and safe and healthy living with an intelligent form of collaboration with their residents has been the prime goal of smart and digital homes and cities. Contingent upon the settings, the communications may be multifaceted such as mobile agent based and context-aware services or they may be uncomplicated such as controlling the room temperature or its humidity level.

Keynote Speaker

Mohammad S. Obaidat, Ph.D. Continued

Sophisticated situations include the delivery of position/location-aware info content of the resident of the digital home as well as his/her activities.

The availability of inexpensive low-power sensors, the RF IC chips, and the embedded microprocessors/ microcontrollers have made tremendous impact on digital homes and cities; with large quantity of sensors, which jointly manage and make the inferences from the collected data on the state of the home and city as well as the actions and behavior of the inhabitants.

As the worldwide life expectancy, especially in developed countries and newly industrialized countries is increasing, the percentage of senior/elderly citizens is increasing at an accelerated pace and most projections suggest that this increase worldwide will reach about 10 millions in the coming decade. Senior citizens usually live in care centers, hospitals or their own homes with some relative supervision/care. Smart homes and cities can be used efficiently and economically in order to accommodate the needs of this population.

The increase of worldwide population, especially in populous countries and cities and the increase migration of citizens to cities have also brought with it challenges in transportation systems, health care, utility's supplies, learning & education, sensing city dynamics, computing with heterogeneous data sources, managing urban big data, and environmental protection including pollution and others.

In this keynote, we will shed some light on the key enabling Information and Communications technology to smart cities and homes. We will also investigate the advances, current trends, challenges and future in the research and development in smart homes and cities.

Some of our recent research results, especially the ones related to the use of wireless networks and security for smart and digital homes will be presented. Among these, we present or advanced Internet of Thing based Security Alert System for Smart Home in order to detect an intruder or any unusual event at home, when nobody is available there. This low-cost home security system utilizes a small pyroelectric Infrared (PIR) module and raspberry pi for minimizing the delay during process of e-mail alert.

Keynote Speaker

Mohammad S. Obaidat, PhD. Continued

Moreover, we will introduce an adaptive MAC protocol for distributed wireless LANs that is capable of operating efficiently under bursty traffic conditions. According to the proposed protocol, the mobile station that is granted permission to transmit is selected by means of a neural-based algorithm. Another new protocol for dynamically setting 802.11 wireless LAN waveforms and transmission power levels based on the wireless channel's signal to noise ratio will be introduced. Our method, known as Signal-to-Noise Ratio-Waveform Power Adaptation (SNR-WPA), changes the power in discrete steps matched to each of the 802.11 data rate-waveform steps.

We present an energy-efficient ad hoc on-demand routing protocol that balances energy load among nodes so that a minimum energy level is maintained among nodes and the network life increases. Other related wireless research efforts by our group will be presented.

Biography:

Inductee of SCS Hall of Fame-Life Achievement Award

Past President, Society for Modeling & Simulation International (SCS)

Past Advisor to the President of Philadelphia University

Founding Editor-in-Chief, Security and Privacy Journal, Wiley

Editor-in-Chief, International Journal of Communication Systems, Wiley

Editor-in-Chief, Journal of Convergence

Editor, IEEE Wireless Communications

Editor, IEEE Systems Journal

Distinguished Speaker of IEEE Computer Society (1994-1997)

Distinguished Lecturer of ACM (1995-Present)

Distinguished Lecturer of SCS (2006-Present)

Professor Mohammad S. Obaidat (Fellow of IEEE and Fellow of SCS) is an internationally well-known academic/researcher/scientist. He received his Ph.D. and M. S. degrees in Computer Engineering from Ohio State University, USA.

He has received extensive research funding and has published TODATE over Fifty five (55) books, over Fifty (55) Book Chapters and over Seven Hundred and Fifty (750) refereed technical articles in scholarly international journals and proceedings of international conferences-about half of them are Journal Papers. Professor Obaidat has served as a consultant for several corporations and organizations worldwide. Dr. Obaidat is the Founding Editor-in-Chief of the Wiley Security and Privacy Journal.

Keynote Speaker

Mohammad S. Obaidat, Ph.D. Continued

He is also Editor-in-Chief of the Wiley International Journal of Communication Systems, the FTRA Journal of Convergence. He served as the Editor-in-Chief of KSIP Journal of Information Processing.

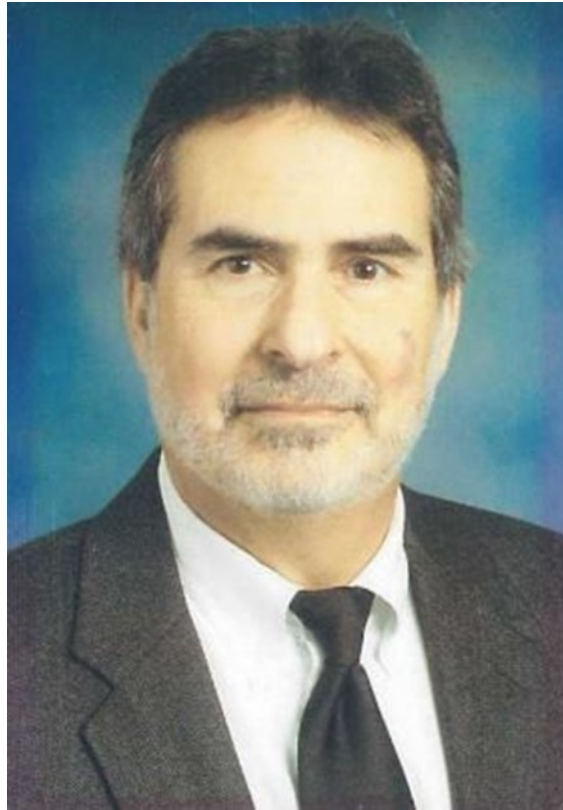
Among his previous positions are Advisor to the President of Philadelphia University for Research, Development and Information Technology, President of the Society for Modeling and Simulation International, SCS, Senior Vice President of SCS, Dean of Engineering at Prince Sultan University, Chair and tenured full Professor at the Department of Computer and Information Science at Fordham university, Chair and tenured Professor of the Department of Computer Science and Director of the Graduate Program at Monmouth University. He is now a tenured full professor at the King Abdullah II School of Information Technology, University of Jordan.

He serve also as editor or advisory editor of many other journals such as IEEE Wireless Communications, IEEE Systems Journal, Elsevier Commuter Communications, Springer Supercomputing Journal, IET Wireless Sensor Systems, among others.

He served as an IEEE CS Distinguished Speaker and and ACM Distinguished Lecturer. He has been serving as SCS Distinguished Lecturer since 2004. He is the founder/co-founder of 4 international conferences. He has given about 150 invited keynote speeches worldwide and has chaired over 160 international conferences.

He has received numerous worldwide awards for his technical and service contributions, such as Nokia Research Fellowship, distinguished Fulbright Scholar Award SCS Outstanding Service Award. the prestigious McLeod Founder's Award, IEEE ComSoc- GLOBECOM 2010 Outstanding Leadership Award, SCS Presidential Award, SCS Hall of Fame–Lifetime Achievement Award, IEEE CITS Hall of Fame Distinguished and Eminent Award. He has been awarded with the Amity University Distinguished Honorary Professor Award and the University of Science and Technology Beijing Distinguished Visiting Professor Award. Prof. Obaidat is a Fellow of IEEE and SCS.

Keynote Speaker



Date: Wednesday, July 11, 2018

Time: 13:00-14:00

Location: Amphitheatre, Duguit

Author: Donald Margolis, Ph.D.

Presentation Title: Industrial Applications of Bond Graph Modeling: Costly Mistakes Could Have Been Avoided

Presentation Abstract: The presentation will start with some history and background of bond graph modelling starting with its invention in the 1950's. The development of bond graph modeling will be discussed with emphasis on applications to real systems. Some of my own industrial experiences will be presented where some upfront modeling for system understanding would have saved companies a lot of stress and money.

Biography: Donald Margolis received his BS in Mechanical Engineering in 1967 from Virginia Polytechnic Institute and State University.

Keynote Speaker

Donald Margolis , Ph.D. Continued

He did his graduate work at MIT, receiving an MS, ME, and PhD in Mechanical Engineering in 1972. Upon graduation from MIT, Dr. Margolis joined the faculty of Mechanical Engineering at the University of California at Davis where he is currently Professor of Mechanical Engineering. Professor Margolis is an expert in the area of physical system modeling and control of engineering systems. He is a principal developer of the bond graph modeling method for interacting multi-energy domain systems. These have come to be called "mechatronic" systems. He is co-author of the most comprehensive text in this area of modeling, titled *System Dynamics: Modeling, Simulation, and Control of Mechatronic Systems*, published by Wiley and sons of NY. This book is in its 5th edition. He is also co-author of the text *Engineering Applications of Dynamics*. This book is also published by Wiley and sons.

Professor Margolis has done research and development in the general area of physical system understanding with particular application to vibration control and vehicle dynamics and control. He has published over 150 articles in these areas and holds several patents for devices that required in depth physical system understanding for their invention. Professor Margolis is also the Director of the Hyundai Center of Excellence in Vehicle System Dynamics and Control. Professor Margolis is a teacher, researcher, and consultant to industry and national laboratories throughout the US, Asia, and Europe.

AGENDAS

SummerSim'18 Sessions at a Glance

		SCSC	SCSC	SCSC	WIP
Monday	9-July-18				
0830 - 1030	Tutorial Block I & II				
1030 - 1100	Break				
1100 - 1200	Tutorial Block III				
1200 - 1300	Lunch				
1300 - 1330	Welcome				
1330 - 1500	Session Block I				Salle 1L
1500 - 1530	Break				
1530 - 1700	Session Block II				Salle 1L
Tuesday	10-July-18				
0800 - 1000	SCS Plenary I				
1000 - 1030	Break				
1030 - 1200	Session Block III	Salle RG		Salle 1F	
1200 - 1300	Lunch				
1300 - 1400	SPECTS Plenary				
1415 - 1545	Session Block IV			Salle 1F	
1545 - 1615	Break				
1615 - 1815	Session Block V	Salle RG		Salle 1F	
Wednesday	11-July-18				
0830 - 1000	SCS Plenary II				
1000 - 1030	Break				
1030 - 1200	Session Block VI	Salle RG	Salle 1L	Salle 1F	
1200 - 1300	Lunch				
1300 - 1400	ICBGM Plenary				
1415 - 1545	Session Block VII	Salle RG	Salle 1L	Salle 1F	
1545 - 1615	Break				
1615 - 1815	Session Block VIII	Salle RG	Salle 1L	Salle 1F	

SummerSim'18 Sessions at a Glance

WIP	SPECTS	ICBGM	TUTORIALS	TUTORIALS	TUTORIALS
		Salle 2B	Salle RG	Salle 1L	Salle 1F
		Salle 2B	Salle RG	Salle 1L	Salle 1F
Salle 1F		Salle 2B			
		Salle 2B			
		Salle 2B			
	Salle 1L	Salle 2B			
	Salle 1L	Salle 2B			
		Salle 2B			
		Salle 2B			
		Salle 2B			

50 Years of Simulation

SCSC General 2018 Agenda

Tuesday, 10 July 2018
Location-Salle RG

Session III: Applied Theory of Modeling & Simulation (ATMS)

10:30-12:00

Session Chair: Yentl Van Tendeloo

- *Ontology for Healthcare Systems Modeling and Simulation* (Featured Speaker) by Mamadou Traore
- *DEVS Modeling and Simulation of Multi-Paradigm Modelling Tool* by Yentl Van Tendeloo and Hans Vangheluwe
- *Use of the Stochastic Collocation Method in Discrete Event Simulations* by Fatou Diouf and Mamadou Seck

Session V: Applied Theory of Modeling & Simulation (ATMS)

16:15-18:15

Session Chair: Jose Luis Risco-Martin

- *Cell-DEVS Models of Social Influence for Human Behavior* by Avneet Behl, Gabriel Wainer and Cristina Ruiz-Martin
- *Advanced Migraine Prediction Hardware System* by Kevin Henares, Josue Pagan, Jose L. Ayala and Jose Luis Risco Martin
- *Including in HLA Federation Functional Mockup Units for Supporting Interoperability and Reusability in Distributed Simulation* by Youssef Bouanan, Simon Gorecki, Judicael Ribault, Greg Zacharewicz and Nicolas Perry
- *Towards Using DEVS for Modelling Adaptive Storytelling in Virtual Games* by Aznam Yacoub, Gabriela Nicolescu, Amine Hamri and Claudia Frydman

50 Years of Simulation

SCSC General 2018 Agenda

Wednesday, 11 July 2018

Location-Salle RG

Session VI: Modeling and Simulation as a Service (MSaaS)

10:30-12:00

Session Chair: Andrea D'Ambrogio

- *Development of a Co-Simulation System as a Decision-Aid in Lean Tools Implementation* by Jalal Possik, Aicha Amrani and Gregory Zacharewicz
- *A Service-in-the-Loop Approach for Business Process Simulation Based on Microservices* by Paolo Bocciarelli, Andrea D'Ambrogio, Andrea Giglio and Emiliano Paglia

Session VIII: Simulation in the System Design Flow (SSDF)

14:15-15:45

Session Chair: Youssef Bouanan

- *Data Hiding Algorithm for HEVC Using Intra-Coded Frames* by David Rodriguez Galiano, Guillermo Botella, Alberto Antonio Del Barrio Garcia and David Cuesta
- *An Ultra Low-Cost Cluster Based on Low-End FPGAS* by Mariano Hernandez, Alberto Antonio Del Barrio Garcia and Guillermo Botella
- *A Generic Web-Based Visualization Framework for Flight and Aerospace Simulations* by Bilge Kaan Gorur and Ozlem Demirtas

50 Years of Simulation

SCSC General 2018 Agenda

Tuesday, 10 July 2018
Location-Salle 1F

Session III: Grand Challenges in Modeling and Simulation (GCMS)

10:30-12:00

Session Chair: Mamadou Traore

- *The Distributed Co-Simulation Protocol for the Integration of Real-Time Systems and Simulation Environments* by Martin Krammer, Martin Benedikt, Torsten Blochwitz, Khaled Alekeish, Nicolas Amringer, Christian Kater, Stefan Materne, Roberto Ruvalcaba, Josef Zehetner, Klaus Schuch, Micha Damm-Norwig, Viktor Schreiber, Natarajan Nagarajan, Isidro Corral, Tommy Sparber, Serge Klein and Jakob Andert
- *SEECSSim—A Parallel and Distributed Simulation Framework for Mobile Devices* by Fahad Maqbool, Asad Malik, Gabriele D'Angelo and Imran Mahmood
- *Computation Operations Caching for Numerical Repeatability* by Faical Y.P. Congo, Mamadou Traore and David R.C. Hill

Session IV: Modeling and Simulation in Engineering Education (MSEE)

14:15-15:45

Session Chair: Gunter Brenner

- *Improved Learning Outcomes in Labview for Undergraduate Students with Lego Mindstorms NXT Kit* (Featured Speaker) by Jeremy Michel, Jerome Cieslak, Laurent Gonthier and Greg Zacharewicz
- *Individualized Learning with Instructional Videos in Engineering Simulation Education* by Gunter Brenner and Christian-Henrik Walter
- *Simulation Infrastructure for Aeronautical Informatics Education* by Haitao Wang, Shihui Chen, Umut Durak and Sven Hartmann

Session V: Grand Challenges in Modeling and Simulation (GCMS)

16:15-18:15

Session Chair: Mohammed Al Kobaisi

- *Using Analytics with Discrete-Event Simulation* by Andrew Greasley
- *Investigation of Interpolation Schemes for a Class of Nonlinear Finite Volume Methods* by Wenjuan Zhang, Mohammed Al Kobaisi and Huafeng Sun
- *FMoTAR: A Fast Multi-Objective Thermal Aware Routing Algorithm for Three-Dimensional Network-on-Chips* by Amartya Majumdar, Ranjita Dash, Jose L. Risco-Martin and Ashok K. Turuk
- *A Cell-DEVS Visualization and Analysis Platform* by Bruno St-Aubin, Omar Hesham and Gabriel Wainer

50 Years of Simulation

SCSC General 2018 Agenda

Wednesday, 11 July 2018

Location-Salle 1F

Session VI: Verification and Validation of Computer Simulation (VVS)

10:30-12:00

Session Chair: Umut Durak

- *Enabling Quantified Validation for Model Credibility* (Featured Speaker) by Megan M. Olsen, Mohammad Raunak and Michael Setteducati
- *Tuning Two-Dimensional Tumor Growth Simulations* by Leszek Siwik, Marcin Los, Adrian Klusek, Witold Dzwinel and Maciej Paszynski
- *Simulation-Based Verification for Parallelization of Model-Based Applications* by Claus B. Koch, Umut Durak and David Mueller

Session VII: Applied Theory of Modeling & Simulation (ATMS)

14:15-15:45

Session Chair: Romain Franceschini

- *Reproducibility Study of a PDEVS Model Application to Fire Spreading* by Romain Franceschini, Paul-Antoine Bisgambiglia and David R.C. Hill
- *A Component Approach for DEVS* by Thomas Paris, Laurent Ciarletta and Vincent Chevrier
- *A New Bond Graph Tool for Students and Practitioners of Multidomain Systems Simulation* by Ender St. John-Olcayto

50 Years of Simulation

SCSC General 2018 Agenda

Tuesday, 10 July 2018
Location-Salle 1L

Session III: SCSC Golden Jubilee Panel

10:30-11:00

Session Chair: Umut Durak

- *50 Summers of Simulation* by Andrea D'Ambrogio, Andreas Tolk, Gabriel Wainer, Saikou Diallo, Gregory Zacharewicz, Jose Luis Risco Martin, Jacob Barhak, Ralph Coolidge Huntsinger and Mohammad Raunak

Session V: Agent-based Modeling & Simulation (ABMS)

16:15-18:15

Session Chair: Mohammad Raunak

- *Design and Validation of an Agent-Based Driving Simulator* by Andreas Gregoriades, Maria Pampaka, Harris Michail and Maria Viugova
- *Using Event Templates to Accelerate Scenario Development in Virtual Training Environments* by Yiannis Papelis and Ginger Watson
- *Evolving a Canonical Human Behavior Model of Well-Being* by Suman Kumar, Mukul Malik, Mayuri Duggirala, Vivek Balaraman and Rishi Bubna
- *A Partially Grounded Agent Based Model on Demonetisation Outcomes in India* by Rishi Bubna, Jayasree Raveendran, Suman Kumar, Mayuri Duggirala and Mukul Malik

50 Years of Simulation

SCSC General 2018 Agenda

Wednesday, 11 July 2018

Location-Salle 1L

Session VI: Emergency Modeling and Simulation (EMS)

10:30-12:00

Session Chair: Agostino Bruzzone

- *Modeling, Interoperable Simulation and Serious Games (MS2G) for Healthcare and First Responders in Disasters Within Industrial Plants* (Featured Speaker) by Agostino Bruzzone, Marina Massei and Riccardo Di Matteo
- *Modeling Disaster Management Practices in Industrial Plants: A Hybrid Approach* by Francesco Longo

Session VII: M&S for Intelligent, Adaptive and Autonomous Systems (MSIAAS)

14:15-15:45

Session Chair: Megan Olsen

- *On Genetic Algorithm Effectiveness for Finding Behaviours in Agent-Based Predator Prey Models* by Megan Olsen, Jessa Laspesa and Theodore Taylor D'Ambrosio
- *SmarTTTS: A Large Scale Traffic Network Simulator* by Salah Hessien, Mohammad Shaqfeh and Hussein Alnuweiri
- *A Simulation Model for Risk Assessment in a Smart Mobility Ecosystem Based on the Inoperability Input-Output Theory* by Justin Moskolai Ngossaha, Raymond Houe Ngouna, Bernard Archimede and Marcel Fouda Ndjodo

Session VIII: Applied Theory of Modeling & Simulation (ABMS)

16:15-18:00

Session Chair: Greg Zacharewicz

- *PANEL: The discipline of Modeling and Simulation Face of Reproducibility Challenge* by David R.C. Hill, Paul-Antione Bisgambiglia, Gauthier Quesnel, Raphael Duboz, Romain Franceschini, and Greg Zacharewicz

ICBGM 2018 Agenda

Monday, 9 July 2018

Location-Salle 2B

08:30-09:30 Tutorial: Introduction to the Bond Graph Method for Modeling and Simulation by Jose J. Granda

Bond Graph Theory I

09:30-10:30

Session Chair: Peter Gawthrop

- *Bond-graph-based symbolic conversion of a DAE model of a planar mechanism into an ODE model* by Peter Breedveld
- *Parameterization Of Nonlinear Systems Using Neuro Bond Graphs* by Benito R. Fernandez, Juan Rincon, Gaudi Morantes

Bond Graph Theory II

11:00-12:00

Session Chair: Geoff Rideout

- *Modeling Principles Using the Relation Between Lagrange Multipliers and Bond Graphs* by Jose Granda, Louis Nguyen, Paul Brocker
- *Sensor Placement on Diagnostic Bond Graph for Structural Isolation of Parametric Faults* by Wolfgang Borutsky

Session I: Vehicles and Transportation Systems I

13:30-15:00

Session Chair: Eilif Pedersen

- *Modeling the Dynamic Characteristics of a Seated Human for Vehicle Ride Comfort Using Bond Graphs* by Francis Assadian and Alex Beckerman
- *Simulation Model for an Autonomous Truck Connected to an eHighway* by C. Garcia-Sanchez, J.A. Lozano and J. Felez
- *Full Car Model with Load Transfer, Powertrain Dynamics, and Driver Model for Active Safety System Design* by Geoff Rideout and Payam Pooyafar

ICBGM 2018 Agenda

Tuesday, 10 July 2018

Location-Salle 2B

Monday, 9 July 2018

Session II: Mechanical Systems

15:30-17:30

Session Chair: Jesus Felez

- *Bond Graphs for Two Dimensional, Multi-Mode Vibration using Finite Modes and Power Conserving Transformers* by Donald Margolis
- *Bond Graph Modeling of Automatic Transmission Double-Transition Shift Dynamics* by Vanja Ranogajec and Josko Deur
- *Investigation of Effect of Wheel/Track Irregularities on the Dynamic Response of the Railway Track Using Bond Graph* by Vivek Kumar, Vikas Rastogi and P.M. Pathak
- *Design of an Electric Power Steering System Using Bond Graphs* by Alex Bekerman and Donald Margolis

Tuesday, 10 July 2018

Session III: Vehicles and Transportation Systems II

10:30-12:00

Session Chair: Donald Margolis

- *Vehicle Modeling and Simulation for Determination of Drag Factor in Accident Reconstruction* by Jose Granda and Felipe Valdez
- *Bond Graph Reduction for Rack Force Observer Application on a Passenger Vehicle* by Jonathan Loyola, Minwoo Han and Tyler Chilson
- *Reconfiguration of the Mobile Manipulator Under the Failure of the Manipulator Joint Actuator* by R.V. Ram, P.M. Pathak and S.J. Junco

Session IV: Control Systems and Electronics

14:15-15:15

Session Chair: Push Pathak

- *Bond Graph Model of Jet Engine Shaft Whirl Dynamics Incorporating Active Bearing Control* by Donald Margolis and Gladys Abapo
- *A Hybrid Control Scheme For Modeling and Control of 1-DOF Flexible Arm URM for Welding Applications* by Sunil Kumar, Vikas Rastogi and Pardeep Gupta
- *Bond Graph Modeling for the Simulation of an Electromechanical Chain* by Baptiste Trajin, Paul-Etienne Vidal and Frederic Rotella

ICBGM 2018 Agenda

Tuesday, 10 July 2018

Location-Salle 2B

Tuesday, 10 July 2018

Session V: Bond Graph Theory III

16:15-17:45

Session Chair: Peter Breedveld

- *Comparison of Control Strategies for a Real Bar System in the Presence of Disturbances: A Bond Graph Approach* by Joel Gonzalez, Jaime Jimenez, Christophe Sueur
- *Bond Graph/Digraph Correspondence Procedure and Symbolic Determination of State Space Descriptor System* by Julien Lagnier, Wilifrid Marquis-Favre, Daniel Thomasse and Didier Remond
- *Bond Graph Modeling of A Holonomic Mobile Platform with Four Mecanum Wheels* by Pushpendra Kumar, Othman Lakha and Rochdi Merzouki

Wednesday, 11 July 2018

Session VI: Energy Systems I

10:30-12:00

Session Chair: Gilberto Gonzalez

- *Biomolecular System Energetics* by Peter J. Gawthrop, Edmund J. Crampin
- *Bond Graph Modeling and Energetic Control of a PEM Electrolyzer* by Houria Chaabna and Jean-Yves Dieulot
- *Modelling and Simulation of Varistors in the Physical Domain* by Gilberto Gonzalez, R. Sarahi Rodriguez and David Alvarado

Session VII: Fluidics

14:15-15:45

Session Chair: Wolfgang Borutzky

- *An Evolutive Bond Graph Modeling of Aerospace Hydraulic Reservoirs and its Modelica Implementation* by Clément Coïc, Marianne Bieron
- *Bond Graph Modeling of the Hybrid Pneumatic/Hydraulic Axial Motion Component of a Physical Drilling Simulator* by Mohammed Said, Geoff Rideout, Stephen D. Butt
- *Model Based Control of Cooperative Planar bionic Manipulator* by Mulu Girmay Tsegay, Pushparaj Mani Pathak, A.K. Samantaray, Rochdi Merzouki, Belkacem Ould Bouamama

ICBGM 2018 Agenda

Wednesday, 11 July 2018

Location-Salle 2B

Session VIII: Mechanical Systems II

16:15-18:15

Session Chair: Vikas Rastogy

- *Port-Hamiltonian Formulation of the Bond Graph Model of a Hybrid Renewable Energy System* by Houria Chaabna and Jean-Yves Dieulot
- *Quasi-Steady State Model of a Permanent Synchronous Generator in a Bond Graph Approach* by Gilberto Gonzalez, Victor Lopez and David Alvarado
- *Bond Graph Application of Steering Wheel Nibble* by Sang Rank Kim, Alex Beckerman
- *Bond Graph Models for Reconstruction of Motorcycle Barrier Equivalent Speeds* by Jose Granda and Toby Gloekler

21st SPECTS 2018 Agenda

Tuesday, 10 July 2018

Location-Salle 1L

13:00-14:00 Mohammad S. Obaidat, Keynote Session/Plenary Room Salle RG

Session IV

14:15-15:45 Room Salle 1L Session Chair: Gabriel Wainer

- *Statistical Fingerprint-Based IDS in SDN Architecture* by Francesco Bigotto, Luca Boero, Mario Marchese and Sandro Zappatore
- *DASH-based Device-to-Device Video Streaming for Cellular Networks with High User Density* by Ala'a Al-Habashna and Gabriel Wainer
- *Performance Analysis of IoT Networks with Mobility via Modeling and Simulation* by Jose Roberto Emillano Leite, Edson ursine and Paulo Martins

Session V

16:15-18:15 Room Salle 1L Session Chair: Mohammad S. Obaidat

- *Modeling and Simulation of Scalable Flocking with Fully Autonomous Quadrotors* by Christian Micklisch, Nathan Hilliard and Hala ElAarag
- *Towards a Framework to Detect Modeling and Semantic Errors in Event Graphs* by Yahya E. Osais
- *Performance Assessment of Dynamic Analysis Based Energy Estimation Tools* by Raja Wasim Ahmad, Siti Hafizah Ab Hamid, Abdullah Gani, Mohammad S. Obaidat, Junaid Shuja, Faisal Rehman and Atta Ur Rehman Khan

Notes

WIP 2018 Agenda

Monday, 9 July 2018

Session I: Work in Progress

13:30-15:00

Room Salle RG

Session Chair: Saikou Diallo

- *Sequencing Control of Heat Pumps using Machine Learning Model* by Ki Uhn Ahn, Sung Ho Park, Seungho Hwang, Sunkyoo Choi and Cheol Soo Park
- *An Ensemble Agent-Based Model of the Federal Funds Market* by Don Berndt, David Boogers and Saurav Chakraborty
- *Online Machine Learning Model In Building Simulation Using Mutual Informaiton* by Hangeong Chu, Han Sol Shin, Ki Uhn Ahn, Seon Jung Ra, Cheol Su Park, Myoung Souk Yeo

Session II: Work in Progress

15:30-17:00

Room Salle RG

Session Chair: Umut Durak

- *A Fast Method for Group Rendering Based on SPH* by Jiang Zhang, Lianxing Jia, Lilong Mo and Huaiyou Chen
- *Research on Modeling and Analysis for Multi-Layered Complex Communication Network of Satellite Navigation System* by Zhou Wei, Yifan Zhu, He Hua and Li Qun
- *Modeling Oil Spill in Coastal Waters Using Cell-Devs* by Joseph Boi-Ukeme, Ngozi Echegini and Gabriel Wainer

Session I: Work in Progress

13:30-15:00

Room Salle IF

Session Chair: Youssef Bouanan

- *Comparison between Artificial Neural Network Model and Hybrid Model of a Chiller* by Sung Ho Park, Ki Uhn Ahn, Seungho Hwang, Sunkyoo Choi and Cheol Soo Park
- *A Development Environment of Discrete-Event Modeling and Simulation for the Collaboration of Multiple User-Levels* by Jun Hee Lee, Seon Han Choi, Bong Gu Kang and Tag Gon Kim
- *Test HIL Framework for CAN / LIN Loss of Communication, Reset and Sleep/Wake up for Automotive Software Systems* by Humberto Isaac Flores Bermejo, Noe Villa Villaseñor and CIATEQ AC

Things To Do In Bordeaux, France

Things to do in Bordeaux

Place de la Bourse is a square in Bordeaux, France and one of the city's most recognizable sights. Built from 1730 to 1775, its architect was Ange-Jacques Gabriel.

Address: Quai du Maréchal Lyautey, 33000 Bordeaux, France Phone: +33 5 56 10 20 30

Grand Théâtre de Bordeaux is a theatre in Bordeaux, France, first inaugurated on 17 April 1780. It was in this theatre that the ballet *La Fille Mal Gardée* premiered in 1789, and where a young Marius Petipa staged some of his first ballets.

Address: Place de la Comédie, 33000 Bordeaux, France Phone: +33 5 56 00 85 95

The Cathedral of Saint Andrew of Bordeaux, commonly known as Bordeaux Cathedral, is a Roman Catholic Church dedicated to Saint Andrew and located in Bordeaux, France. It is the seat of the Archbishop of Bordeaux.

Address: Place Pey Berland, 33000 Bordeaux, France Phone: +33 5 56 52 68 10

The Pont de pierre, or "Stone Bridge" in English, is a bridge in Bordeaux, which connects the left bank of the Garonne River to the right bank quartier de la Bastide.

Address: Pont de Pierre, 33000 Bordeaux, France Phone: +33 5 56 00 66 00

The Basilica of St. Michael is a Flamboyant Gothic church in Bordeaux, France, built between the end of 14th century and the 16th century. It is at the heart of the ancient quarter of Saint-Michel.

Address: Place Meynard, 33800 Bordeaux, France Phone: +33 5 56 94 30 50

Puerta de Cailhau, built in 1495, this monument with a castle-like exterior was once the main gate to the city.

Address: Place du Palais, 33000 Bordeaux, France Phone: +33 5 56 00 66 00

Monument aux Girondins with a fountain & towering column erected to honor Girondin revolutionaries.

Address: 2792 Place des Quinconces, 33000 Bordeaux, France Phone: +33 5 56 00 66 00

The Museum of Aquitaine is a collection of objects and documents from the history of Bordeaux and Aquitaine.

Address: 20 Cours Pasteur, 33000 Bordeaux, France Phone: +33 5 56 01 51 00

Things to do in Bordeaux

The Cité du Vin is a museum as well as a place of exhibitions, shows, movie projections and academic seminars on the theme of wine located in Bordeaux, France.

Address: 134 Quai de Bacalan, 33300 Bordeaux, France

Phone: +33 5 56 16 20 20

Public Garden is a green space with an arboretum & large lake, plus a natural history museum & a puppet theater. Address: Jardin Public, Cours de Verdun, 33000 Bordeaux, France

The Jardin botanique de Bordeaux is a municipal botanical garden located at Place Bardineau, Bordeaux, Gironde, Aquitaine, France; it is open daily without charge.

Address: Espl. Linné, 33100 Bordeaux, France

Phone: +33 5 56 52 18 77

Rustic Vines operate fun and informative activities in the most beautiful city in the world. Their wine-tours have been made famous. You will taste a large selection of different wines, eat lots of specialty local cheese and of course share a lot of laughter. The tour is very much a great learning experience. You will ease into the deep sophisticated wine world of Bordeaux, get the best service from the knowledgeable guides, and experience some of the unique chateaus on offer. The bike tours are a great way to see Bordeaux especially on the very comfortable beach cruisers. Address: 26 Rue De la Devisse, Old town, 33000, Bordeaux, France

Bordeaux with Elodie offers private food and wine tours in Bordeaux. Day tours are available all year long so come Eat, Drink and Discover Bordeaux with your guide Elodie. Chateau visits, wine tastings, cooking class, food and wine pairing workshop and many other fascinating activities you can select to create with Elodie your perfect day in Bordeaux.

Address: 2 quai de Braza, Rdc Bdm, 33450, Bordeaux, France

Nearby Restaurants

Restaurants in Bordeaux available for lunch and dinner

Hâ Restaurant

Address: 50 Rue du Hâ, 33000 Bordeaux, France

Phone: +33 5 57 83 77 10

Website: <https://www.ha-restaurant.fr/>

Description: Pride in providing fresh products chosen according to their quality and their seasonality, cultivated as far as possible in local production reasoned. Hâ is a place where people gather around like in a kitchen, the know-how of producers, vine growers and craftsmen. The atmosphere presents itself naturally, as an invitation to sharing and well-being together.

Le Bouchon Bordelais

Address: 2 Rue Courbin, 33000 Bordeaux, France

Phone: +33 5 56 44 33 00

Website: <https://www.bouchon-bordelais.com/>

Description: For each season products come from the market. They are added to the basics of traditional kitchens, with a touch of spice and influence of our time, and a touch of personal perception is added which will land you in the middle of the Bouchon Bordelais.

Le Pavillon des Boulevards

Address: 120 Rue de la Croix-de-Seguey, 33000 Bordeaux, France

Phone: +33 5 56 81 51 02

Website: <https://lepavillondesboulevards.fr/>

Description: Let yourself be transported by the culinary universe of Michelin-starred Chef Thomas Morel in a journey where time stops. Sublimate your expedition through a palette of wines selected by Chef Sommelier Thibaut Berton.

MILES Restaurant

Address: 33 Rue du Cancera, 33000 Bordeaux, France

Phone: +33 5 56 81 18 24

Website: <http://restaurantmiles.com/>

Description: Started by a team of 2 young couples of restaurateurs from all over the world. After their meeting at the Grégoire Ferrandi school in Paris. They found each other a few years later around a common idea. That of a restaurant with a neat plate, served in a warm and relaxed atmosphere. It was in Bordeaux that they put the suitcases of Miles.

Nearby Restaurants

L'Entrecôte

Address: 4 Cours du 30 Juillet, 33000 Bordeaux, France , Phone: +33 5 56 81 76 10

Website: <http://www.entrecote.fr/>

Description: In 1962, Henri Gineste de Sauris opened in Toulouse "L'Entrecôte", a restaurant modeled after "Le Relais de Venise - His steak" created a few years earlier by his father in Paris. Since then, the black and yellow sign has developed in Bordeaux, Nantes, Montpellier and Lyon with its waitresses traditionally dressed in yellow and black in a Scottish wall decor. Everyone comes to appreciate the unique formula unchanged for more than 50 years: salad with nuts, finely trimmed sirloin steak (slice of beef of 170 grams) accompanied by its famous secret composition sauce, homemade fries at will, for finish on a dessert prepared by the pastry chefs.

Le Bistrot du Gabriel

Address: 10 Place de la Bourse, 33000 Bordeaux, France, Phone: +33 5 56 30 00 80

Website: <https://www.bordeaux-gabriel.fr/>

Description: In the emblematic square of Bordeaux, facing the mirror of water, you are welcomed to whatever you desire. An aperitif, a lunch, a dinner, an event or a seminar. Four atmospheres at your disposal to spend a pleasant moment.

Baud et Millet

Address: 19 Rue Huguerie, 33000 Bordeaux, France, Phone: +33 5 56 79 05 77

Website: <http://baudetmillet.com/>

Description: Come share our passion for 110 cheeses, accompanied by the best wines. In 1986, Gérard BAUD created the first restaurant dedicated to Bordeaux wines and cheeses, with a maturing cellar that contains 60 cheeses and a wine cellar from around the world to enhance the aromas. In 2009, he passes the baton to Xavier BRUNG, who admits to particularly appreciate cheese and wine. His madeleine of Proust? The county accompanied by a glass of Jura yellow wine. This passionate, expanded the range from 60 to more than 100 cheeses to taste.

