

Dr. Cristina Ruiz Martin

Education

- 2015/01 - 2018/03 Doctorate, Industrial Engineering/Electrical and Computer Engineering, Cotutelle between Carleton University (Canada) and Universidad de Valladolid (Spain)
Thesis Title: A Framework to Study the Resilience of Organizations: A Case Study of a Nuclear Emergency Plan
Supervisors: Adolfo Lopez Paredes; Gabriel Wainer
- 2013/09 - 2014/07 Master, Industrial Engineering, Universidad de Valladolid
Supervisors: Adolfo Lopez Paredes; David Poza
- 2012/09 - 2013/09 Master, Project Management, Universidad de Valladolid
Supervisors: David Poza; Adolfo Lopez Paredes
- 2007/09 - 2013/06 Bachelor, Industrial Engineering, Universidad de Valladolid
Supervisor: Adolfo Lopez Paredes

Employment

- 2021/09 - Instructor II
Department of Systems and Computer Engineering, Carleton University (Full-time)
- 2020/07 – 2021/09 Instructor I
Department of Systems and Computer Engineering, Carleton University (Full-time)
- 2018/08 – 2020/06 Post-Doctoral Fellow
Department of Systems and Computer Engineering, Carleton University (Full-time)
- 2018/09 – 2020/06 Contract Instructor
Department of Systems and Computer Engineering, Carleton University (Part-time, Sessional, Lecturer)
- 2018/04 - 2018/07 Contract Instructor
Department of Business Management, School of Industrial Engineering, Universidad de Valladolid. (Part-time, Sessional, Lecturer)
- 2015/10 – 2018/12 Invited Lecturer
Department of Systems and Computer Engineering, Carleton University
Course: SYSC 5104 - Methodologies for Discrete-Event Modeling and Simulation

- 2018/04 - 2018/06 Instructor
BPMSat - <https://www.bpmsat.com/> (Part-time)
Development of instructional materials, tests, and exercises for an online Master in Project Management, BIM, and Data Analysis (Universidad Europea Miguel de Cervantes - Spain).
Instructor for the course "Business Intelligence for Small & Medium Enterprises" I developed.
- 2014/04 - 2018/03 Researcher and Instructor
Department of Business Management, School of Industrial Engineering, Universidad de Valladolid. (Full-time)

TEACHING

Courses Taught at Carleton University

Computation and Programming. ECOR 1041 – Undergraduate Level.

- Winter 2022: (2022/01 - 2022/02). Section E and labs. 161 Students
- Winter 2022: (2022/01 - 2022/02). Section F and labs. 204 Students
- Fall 2021: (2021/10 - 2021/12). Section C and labs. 169 Students
- Fall 2020: (2021/09 - 2021/10). Section B and labs. 151 Students

Data Management. ECOR 1042 – Undergraduate Level.

- Winter 2022: (2022/03 - 2022/04). Section E and labs. 172 Students
- Winter 2022: (2022/03 - 2022/04). Section F and labs. 204 Students
- Fall 2021: (2021/10 - 2021/12). Section C and labs. 196 Students
- Winter 2021: (2021/03 - 2021/04). Section G and labs. 121 Students
- Winter 2021: (2021/01 - 2021/02). Section C and labs. 102 Students

Object-Oriented Software Development. SYSC 2004 – Undergraduate Level.

- Winter 2021: (2021/01 - 2021/04). Section C and labs. 217 Students
- Winter 2021: (2021/01 - 2021/04). Section D and labs. 190 Students

Intro to Systems Programming. SYSC 4006 – Undergraduate Level.

- Fall 2021: (2021/09 - 2021/12). Section A. 14 Students

Meth. Discrete-Event Modeling. SYSC 5104 – Graduate Level.

- Fall 2021: (2021/09 - 2021/12). Section F. 16 Students

Advanced Topic in Software Engineering: Software Development with C. SYSC 5709 - Graduate Level.

- Fall 2020: (2020/09 - 2020/12). Section F. 40 Students
- Summer 2020: (2020/05 - 2020/06). Section S. 50 Students

- Winter 2020: (2020/01 - 2020/04). Section W. 55 Students
- Fall 2019: (2019/09 - 2019/12). Section F. 42 Students
- Summer 2019: (2019/07 - 2019/08). Section S. 22 Students

Numerical Methods ECOR2606 – Undergraduate Level.

- Summer 2019: (2019/05 - 2019/06). Section A and labs. 152 Students
- Winter 2019: (2019/01 - 2019/04). Section D and labs. 204 Students
- Fall 2018: (2018/12 - 2018/09). Section B and labs. 270 Students

Courses Taught at Other Universities

2018/02 - 2018/06 Instructor, Department of Business Management, Universidad de Valladolid
Course Title: Economics Engineering (Spanish)
Course Level: Undergraduate
Number of Students: 42

2013/09 - 2018/06 Instructor, Department of Business Management, Universidad de Valladolid
Course Title: Managerial Economics (Spanish).
Course Level: Undergraduate
Number of Students: 50

Course Development/Re-Design

Fall 2021 – Summer 2022 Carleton University
Course: **Data Management ECOR 1042**
This is a common course for all engineering students at Carleton. The course is focused on programming in Python with a special emphasis on structures to manage and store data and the implementation of numerical algorithms.
Since I was assigned to this course, I have been working on improving the course and aligning the topics covered with the accreditation requirements and the course description. I have also been working on redesigning the course project in such a way that the students practice the topics covered in the lectures and it's appealing to students in the different disciplines.

Fall 2020 Carleton University
Course: **Object-Oriented Software Development. SYSC 2004**
I redesigned the lectures to separate the programming language from the concepts related to object-oriented software design. I selected a book that is language agnostic and an additional reference for the programming language used in the course, Java. I also redesigned the labs for the context of online learning using IntelliJ EDU Tools, where I developed guided labs with explanations, questions, programming exercises, and automated testing for the solutions provided by the students. In this project, I collaborated with a student under the student as a partner program.

- 2019/06 Carleton University
Course: **Advanced Topic in Software Engineering SYSC 5709**
The course is focused on software development in the C programming language. It also covers other topics such as good coding practices, software documentation, software development management, design by contract.
- 2017/07 Course material developer, Universidad de Valladolid, Social System Engineering Research Centre (INSISOC)
Course Title: Business Intelligence for Small and Medium Enterprises (Spanish)
Online course. It is a basic and applied course that explains how to apply Business Intelligence in firms, with a special focus on the commercialization area. Its main audience is Managers of Small and Medium Enterprises. <http://www.bpmsat.com/curso-business-intelligence>

Student Supervision

Bachelor's

- 2021/09 – 2022/04 Erica Oliver, Wintana Yosief
(Co-Supervision) 4th Year Engineering Project, Carleton University
Project Title: Development of software to generate teams for project-based labs
- 2021/09 – 2022/04 James Horner, Tanner Trautrim
(Co-Supervision) 4th Year Engineering Project, Carleton University
Project Title: CVLAD Supervisory Controller
- 2021/09 – 2022/04 Hazel Griffin, Ben Bagg
(Co-Supervision) 4th Year Engineering Project, Carleton University
Project Title: Simulation to Study the Spread of COVID-19 on Carleton University's Campus
- 2021/06 – 2021/09 – Hazel Griffin, Carleton University. (Research Assistant).
(Co-Supervision) Project Title: Including individual behavior to model the spread of airborne diseases
- 2021/06 – 2021/09 – Eric Mereu, Carleton University. (Co-op student.)
(Co-Supervision) Project Title: Including vaccinations in Cell-DEVS Models to study the spread of COVID-19
- 2020/09 – 2021/04 Micaela Bo, Paul Buron, Courtney Rhuland, Sean Smith
Co-Supervision 4th Year Engineering Project, Carleton University
Project Title: Agent-Based Model for COVID-19
- 2020/10 – 2021/04 Chang Qiu, Carleton University (I-Cureus)
Co-Supervision Project Title: Web development for simulation models and tools

2020/10 – 2021/03 Co-Supervision	Moe Mushtaha, Carleton University. Work to Study Program. Project Title: Visualization of Geography Based DEVS Models to study the spread of diseases
2020/6 – 2020/9 Co-Supervision	Sebastian Ross, Carleton University. Co-op student. Project Title: Cell-DEVS Models to study the spread of COVID-19
2020/6 – 2020/9 Co-Supervision	Binyamin Brion, Carleton University. Co-op student. Project Title: Geography-based Cell-DEVS Models to study the spread of COVID-19
2019/06 - 2019/8 Co-Supervision	Nicolas Gaillard-Groléas, Aix-Marseille Université Project Title: Development of embedded controllers with DEVS
2018/6 - 2018/8 Co-Supervisor	Romain Bach, Aix-Marseille Université Project Title: Visualizing DEVS Simulation Results with R

Master's Equivalent

2019/1 - Collaborator	Juan Lanuza, Universidad de Buenos Aries Thesis/Project Title: Parallel version of Cadmium Simulator
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Master's non-Thesis

2018/11 - 2018/12 Co-Supervisor	Arnav Kaushal, Carleton University Thesis/Project Title: Study the Resilience of a Communication System
2018/11 – 2018/03 Co-Supervisor	Avneet Behl, Carleton University Thesis/Project: Modeling Human Behavior with Cell-DEVS.
2018/11 - 2019/4 Co-Supervisor	Navneet Kaushal, Carleton University Thesis/Project Title: A Controller for an Elevator System using Embedded CD-Boost

Research Assistant

2020/10 – 2021/04 Co-Supervision	Sali Ben Suleiman, PhD Student Carleton University. Act-to-Employ Program. Project Title: Visualization of Geographic Based Cell-DEVS Models to study the spread of diseases
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Directed Studies

2021/05 – 2021/08 Supervision	Hamza Qassoud, MSc Student Carleton University. Title: Web-based simulation
2021/05 – 2021/08 Supervision	Mahya Shahmohamadi, PhD Student Carleton University. Project Title: Control Systems in Embedded DEVS
2021/01 – 2021/04 Supervision	Aidan Fahlman, MSc Student Carleton University. Title: Definition and Validation of COVID-19 spread models

2021/01 – 2021/04 Xiangyu Chen, MSc Student Carleton University.
Supervision Title: Simulation Algorithms for Pandemic Models

M. Eng Projects

2021/01 – 2021/04 Nirmal Patel, M. Eng Student Carleton University.
Supervision Title: Online Simulation and Visualization Environment for Cell-DEVS using CD++ and DEVS-Viewer

Other Teaching Activities

2022/01 – 2022/03 Member of Master Thesis Defence Committee
Student: Tabarak Al-Gafari, M.Sc. Carleton Unveristy
Thesis Title: Strategies for Cooperative Energy Distribution on Multirobot Warehouse System

2022/01 – 2022/04 4th year Engineering Project Reader (2 Projects).

2021/06 - 2021/08 Students as Partners Program. Carleton University.
SYSC 4006 Introduction to Systems Programming
I am working with Eline Elorm Nuviadenu (student partner) to include more programming examples, exercises, and quizzes in the course based on the feedback received in the teaching evaluation comments from the previous offering. We are also redesigning the appearance of the course in Brightspace to make it easier to navigate.

2021/1 – 2021/4 4th year Engineering Project Reader (2 Projects).
Despite my teaching release, I volunteer to read two projects

2020/9 - 2020/12 Students as Partners Program. Carleton University.
SYSC 2004 Object-Oriented Software Development
I worked with Martin Klamrowski (student partner) to redesign the labs and the assignments for SYSC 2004.

RESEARCH

Awards

2021 Reviewer of the Year 2021 - Runner up. Journal SIMULATION.
https://journals.sagepub.com/page/sim/annual_journal-awards

2020/07 Best Autodesk BIM 360 Project.
AEC Hackathon Online https://hackaec.com/Ov_1.html

- 2020/04 Young Simulation Scientist Award
Society for Modeling and Simulation International
Criteria: This award honors outstanding scientist and engineers under 35 year old who, early in their careers, demonstrated excellence and show potential for leadership at the frontiers of modeling and simulation.
- 2019/04 DEVS Modeling and Simulation Ph.D. Dissertation Award.
Society for Modeling and Simulation International
- 2019/02 Finalist for the Best Ph.D. work in Engineering at Universidad de Valladolid.
Universidad de Valladolid
- 2018/06 Senate Medal for Outstanding Academic Achievement. Doctorate level.
Carleton University
- 2017/07 Best Paper Award at IJC17. Area: Strategy and Entrepreneurship
International Joint Conference ICIEOM-ADINGOR-IISE-AIM-ASEM, Valencia (Spain)

Publications

Journal Articles

1. Ruiz-Martin, C., Wainer, G., Lopez-Paredes, A. (2022). Exploration of Network Theory to Evaluate Organizational Resilience. *International Journal of Mathematical, Engineering and Management Sciences*, 7(1), art. 28.
2. Ruiz-Martin, C., Wainer, G. A., Belloli, L. (2022). Integration and Automation of Modeling of Biological Cell Processes. *Simulation Modelling Practice and Theory*, vol. 114, art. 102419.
3. Ruiz-Martín C, Wainer G, Lopez-Paredes A. (2021). Discrete Event Simulation of Diffusion Processes in Multiplex Dynamic Networks. *ACM Transactions on Modeling and Computer Simulation – TOMACS*. 6 (1). Art No. 6: pp 1-36
4. Ruiz-Martin C, Lopez-Paredes A, Wainer G. (2018). What we know and do not know about organizational resilience. *International Journal of Production Management Engineering*. 6(1): 11-28.
5. Agenjo E, Martín-Cruz N, Ruiz-Martin C, López-Paredes A. (2018). Does CMMI Implementation affect the Performance of the Firm? An Evaluation from a Dynamic Capabilities Approach. *International Journal of Production Management and Engineering*. 6(2): 57-64.
6. Morales Allende M, Ruiz-Martin C, Lopez-Paredes A, Perez Ríos J. (2017). Aligning Organizational Pathologies and Organizational Resilience Indicators. *International Journal of Production Management and Engineering*. 5(2): 107-116.

Scientific Magazine Articles

1. G. Wainer, R. Cárdenas, K. Henares and C. Ruiz-Martín, (2021) "Modeling and Simulation of Space-Based Pandemic Scenarios Using an Open-Source Platform," in *Computing in Science & Engineering*, vol. 23, no. 4, pp. 80-84, 1 July-Aug. 2021, doi: 10.1109/MCSE.2021.3075760.

Book Chapters

1. Ruiz-Martin C, Pérez Rios JM, Wainer G, Pajares J, Hernandez C, Lopez-Paredes A. (2017). The Application of the Viable System Model to Enhance Organizational Resilience. Hernandez C Eds. In *Advances in Management Engineering*. Pages: 95-107. Springer.

Theses

1. A Framework to Study the Resilience of Organizations: A Case Study of a Nuclear Emergency Plan. (2018). Carleton University. Doctorate.
Supervisor: Gabriel Wainer, Adolfo López Paredes

Refereed Conference Proceedings

1. Horner J., Trautrim T., Ruiz Martin C., Borshchova I., Wainer G. (2022). Discrete- Event Supervisory Control for the Landing Phase of Helicopter Flight. Winter Simulation Conference (WSC2022), Marina Bay Sands, Singapore (Submitted)
2. Ruiz Martin C, Wainer G., (2022) Tutorial Paper. Defining DEVS Models using the CADMIUM Toolkit. Winter Simulation Conference (WSC2022), Marina Bay Sands, Singapore (Submitted)
3. Ruiz Martin C, Wainer G., (2022) (Abstract for Tutorial) Defining Cell-DEVS Models with CD++ Online Simulation Environment. 2022 Annual Modeling and Simulation Conference (ANNSIM '22). San Diego, California, USA. (Submitted)
4. Ruiz-Martin C., Patel N., Wainer G., (2022). Geographical SEVIRD Covid-19 Model with Travel Restrictions. 2022 Annual Modeling and Simulation Conference (ANNSIM '22). San Diego, California, USA. (Accepted)
5. Fahlman, A., Ruiz-Martin, C., Wainer, G., Dobias, P., Rempel, M. (2021). Extended Compartmental Model of Covid-19: A Cell-DEVS Definition. *In 25th IEEE/ACM International Symposium on Distributed Simulation and Real-Time Applications, DS-RT*, Virtual Event
6. Roman Cardenas, Cristina Ruiz-Martin, Gabriel Wainer, Peter Dobias, Mark Rempel (2021) Studying the Spread of Diseases using Geographical Data and Irregular Topologies with Cell-DEVS. 2021 Annual Modeling and Simulation Conference (ANNSIM '21), Virtual Event
7. Cristina Ruiz Martin, Guillermo Trabes and Gabriel Wainer (2020). A New Simulation Algorithm for PDEVS Models with Time Advance Zero, Winter Simulation Conference (WSC2020), Virtual Event
8. Joseph Boi-Ukeme; Cristina Ruiz-Martin; Gabriel Wainer (2020). Real-Time Fault Detection and Diagnosis of CPS Faults in DEVS. The 6th IEEE International Conference on Dependability in Sensor, Cloud and Big Data Systems and Applications (DependSys 2020) (Virtual Event)
9. Roman Cardenas, Kevin Henares, Cristina Ruiz-Martin and Gabriel Wainer (2020) Using Cell-DEVS to Model the Spread of COVID-19. ACRI 2020. Virtual Event
10. Ala'a Al-Habashna, Vinu Subashini Rajus, Cristina Ruiz-Martin, Nicolas Arellano, Gabriel Wainer, Liam O'Brien, Stephen Fai (2020) Indoor Localization and Building Occupancy Count Estimation using LTE-A Ultra-Dense Networks. Submitted to SimAUD, Vienna, Austria. (Virtual Event)
11. Cristina Ruiz Martin, Gabriel Wainer, Adolfo Lopez Paredes (2020) A Method for Studying Communications Resiliency in Emergency Plans. Submitted to Spring Simulation Conference 2020, George Mason University, Fairfax Campus, Virginia, USA. (Virtual Event)
12. Benjamin Earle, Kyle Bjornson, Cristina Ruiz-Martin, Gabriel Wainer (2020) Development of a Real-Time Kernel: RT-Cadmium. Submitted to Spring Simulation Conference 2020, George Mason University, Fairfax Campus, Virginia, USA. (Virtual Event)

13. Cristina Ruiz-Martin, Gabriel Wainer (2020) Implementing DEVS Models with Cadmium Simulator. (Abstract for Tutorial) Spring Simulation Conference 2020, George Mason University, Fairfax Campus, Virginia, USA. (Virtual Event)
14. Laouen Belloli, Damian Vicino, Cristina Ruiz-Martin, and Gabriel Wainer (2019). Building DEVS Models with the Cadmium Tool. Winter Simulation Conference 2019, National Harbor, Maryland, USA.
15. Alan Davoust, Patrick Gavigan, Cristina Ruiz-Martin, Guillermo Trabes, Babak Esfandiari, Gabriel Wainer, and Jeremy James (2019). An Architecture for Integrating BDI Agents with a Simulation Environment. 7th International Workshop on Engineering Multi-Agent Systems (EMAS 2019), Montreal, Canada.
16. Ala'a Al-Habashna, Gabriel Wainer and Cristina Ruiz Martin (2019). Analyzing the Impact of Quantum Size on the Accuracy and Performance of Cell-DEVS Fire Models. Spring Simulation Conference, Tucson, USA.
17. Cristina Ruiz-Martin, Ala'a Al-Habashna, Gabriel Wainer and Laouen Belloli. (2019). Control of a Quadcopter Application with DEVS. Spring Simulation Conference, Tucson, USA.
18. Wainer G, Ruiz-Martín C, Castro R. (2018). Building Partial Differential Equations Models using CELL-DEVS. Proceedings of the 2018 Winter Simulation Conference (WSC). Winter Simulation Conference 2018, Gothenburg, Sweden (1382-1393).
19. Behl A, Wainer G, Ruiz-Martin C. (2018). CELL-DEVS: An Approach to Model the Influence of Social Interactions in Human Behavior. SummerSim '18 Proceedings of the 50th Computer Simulation Conference. Summer Simulation Multi-Conference 2018 (SummerSim'18), Bordeaux, France
20. Ruiz-Martin C, Wainer G, Lopez-Paredes A. (2018). Studying the resilience of communications in organizations using formal modeling and simulation. Abstracts of the Ninth Workshop on Simulation (2018). 9th International Workshop on Simulation, Barcelona, Spain (109-110)
21. Ruiz-Martin C, Wainer G, Lopez-Paredes A. (2018). Formal Abstract Modeling of Dynamic Multiplex Networks. Proceedings of SIGSIM Principles of Advanced Discrete Simulation (SIGSIMPADS' 18). ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (PADS) 2018, Rome, Italy. ACM, USA
22. Agenjo E, Martín-Cruz N, Ruiz-Martin C, Lopez-Paredes A. (2017). The Impact of CMMI Implementation on the Firm Performance. An Evaluation from a Dynamic Capabilities Approach. International Joint Conference. ICIEOM-ADINGOR-IISE-AIM-ASEM (IJC 2017) Valencia (Spain), Valencia, Spain

Online Resources

1. Nirmal Patel, Cristina Ruiz Martin, CD++ Online Simulation Environment (2022) <http://206.12.94.204:8080/CD++/Cell-DEVS/index.html#macro>
2. Cristina Ruiz-Martin Gabriel Wainer Adolfo López-Paredes. Artifacts associated with the paper Formal Abstract Modeling of Dynamic Multiplex Networks. Proceedings of SIGSIM Principles of Advanced Discrete Simulation (SIGSIMPADS' 18). (2018).
The artifacts in the paper have been refereed and evaluated as functional, reusable, and available according to the ACM initiative (<https://www.acm.org/publications/policies/artifact-review-badging>).
3. Cristina Ruiz-Martin, Gabriel Wainer. "Cadmium. A tool for DEVS Modeling and Simulation. User's Guide". 80 pages. Available online at <http://www.sce.carleton.ca/courses/sysc-5104/lib/exe/fetch.php?media=cadmium.pdf>
4. Cadmium. Contributor to the Cadmium GitHub repository. Available online at <https://github.com/SimulationEverywhere/cadmium>
5. Cadmium-DEVS-Models. GitHub repository set up and management. Contribution with models. The models and the simulator are developed using the C++17 programming language. Available online at <https://github.com/SimulationEverywhere/Cadmium-DEVS-Models>

6. Cadmium-Simulation-Environment. GitHub repository set up and management. Available online at <https://github.com/SimulationEverywhere/Cadmium-Simulation-Environment>

Funding History

Applied

2022/04 – Carleton University Course Transformation Fund
 Applicant Redesign of ECOR1042 – Data Management
Funding Sources: Carleton University – Teaching and Learning Services
 Total Funding – 8,000 (Canadian dollar)
 Funding Competitive? Yes

Completed

2021/06 – 2022/03 Shared Online Project Initiative (SOPI)
 Co-Applicant ANCWT online module to empower women in STEM
Funding Sources: Carleton University/Ottawa University
 Total Funding – 16,000 (Canadian dollar)
 Funding Competitive? Yes

2021/04 – 2022/03 Multidisciplinary Research Catalyst Fund (MRCF)
 Co-Applicant *Modeling on University Campuses*
Funding Sources: Carleton University
 Total Funding – 40,000 (Canadian dollar)
 Funding Competitive? Yes

2014/4 - 2018/4 Research Assistantship
 Principal Applicant **Funding Sources:** University of Valladolid
 Total Funding - 50,000 (Euro)
 Funding Competitive? Yes

Declined

2020/08 – 2020/11 Mitacs-CALAREO Globalink Research Award
 (Declined due to new academic position) **Funding Sources:** MITACS - CALAREO
 Total Funding – 6,000 (Canadian dollar)
 Funding Competitive? Yes

Travel Grants

2019/09 WSC grant award to attend Winter Simulation Conference 2019 – 1,000 (US dollar)
 Winter Simulation Conference Foundation

2019/09 N2 Women Travel Grant to participate N2Women workshop collocated with ACM
 SenSys/BuildSys 2019 – 1,000 (US dollar)

2019/03	Travel award to attend Spring Simulation Conference 2019 - 200 (US dollar) Society for Modeling and Simulation International
2018/12	WSC Foundation grant award to attend Winter Simulation Conference 2018 - 1,000 (US dollar) Winter Simulation Conference Foundation
2018/05	SIGSIM PADS 2018 Travel Grants to attend PADS 2018 Conference. Rome, Italy - 1,000 (US dollar) ACM-SIGSIM
2017/12	SIGSIM WSC 2017 Travel Grants to attend Winter Simulation Conference 2017. Arlington, Virginia (USA) - 500 (US dollar) ACM-SIGSIM
2017/10	Travel funding to attend INFORMS 2017 Conference. Houston, Texas (USA) - 936 (Euro) Universidad de Valladolid

Presentations

1. (July 2021) Studying the Spread of Diseases using Geographical Data and Irregular Topologies with Cell-DEVS (ANNSIM 2021), Virtual Event
2. (December 2020) A New Simulation Algorithm for PDEVS Models with Time Advance Zero, Winter Simulation Conference (WSC2020), Virtual Event
3. (May 2020) A Method for Studying Communications Resiliency in Emergency Plans. Spring Simulation Conference 2020, George Mason University, Fairfax Campus, Virginia, USA. (Virtual Event)
4. (May 2020) Implementing DEVS Models with Cadmium Simulator. (Tutorial) Submitted to Spring Simulation Conference 2020, George Mason University, Fairfax Campus, Virginia, USA. (Virtual Event)
5. (December 2019) Modeling and Simulation. Theory and Applications of DEVS. INSISOC Research Group. Universidad de Valladolid, Spain.
6. (December 2019) Building DEVS Models with the Cadmium Tool. Winter Simulation Conference 2019, National Harbor, Maryland, United States
7. (October 2019) A Method for Studying Communications Resiliency in Emergency Plans. 8th Networking Women Workshop. New York City, United States – Poster.
8. (2019). Studying Resilience through Simulation. Breakthrough Breakfast with Carleton Women Researchers, Ottawa, Canada
9. (2019). Control of a Quadcopter Application with DEVS. Presentation of Conference Paper. Spring Simulation Conference, Tucson, United States
10. (2019). A Framework to Study the Resilience of Organizations: A Case Study of a Nuclear Emergency Plan. Spring Simulation Conference. DEVS Ph.D. Awards Session, Tucson, United States
11. (2018). Studying the Resilience of Communication in Organizations using Formal Modeling and Simulation. Presentation of Conference Abstract. 9th International Workshop on Simulation, Barcelona, Spain
12. (2018). Building Partial Differential Equations Models using Cell-DEVS. Presentation of Conference Paper. Winter Simulation Conference 2018, Gothenburg, Sweden

13. (2018). Formal Abstract Modeling of Dynamic Multiplex Networks. Presentation of Conference Paper. SIGSIM Principles of Advanced Discrete Simulation (SIGSIMPADS' 18), Rome, Italy
14. (2017). An architecture to simulate diffusion processes in multiplex dynamic networks. Winter Simulation Conference 2017. Ph.D. Colloquium, Las Vegas, United States
15. (2017). An Evaluation from a Dynamic Capabilities Approach. Presentation of Conference Paper. International Joint Conference - ICIEOM-ADINGOR-IISE-AIM-ASEM (IJC 2017), Valencia, Spain

ADMINISTRATION

Event Administration

Winter Simulation Conference (<https://meetings.informs.org/wordpress/wsc2022/>)

- **Ph.D. Colloquium. Track Co-Coordinator.** WSC2022 (Marina Bay Sands, Singapore), WSC2023, WSC2024, WSC2025 (4-year commitment)
- **Diversity and Inclusion Chair** (Organizing Committee). WSC'2021. Phoenix, Arizona. Hybrid Event
- **Poster Session. Track Co-Coordinator.** WSC'2020. Virtual Event.
The responsibilities of the Track Coordinator include forming a program committee, assigning papers to reviewers, collecting the referee reports, formulating a recommendation to the Program Chair, and organizing the accepted papers into sessions. I also promoted including the best poster award at the conference. I formed the first award committee. The initiative was a success, and it will continue in the following editions
- **Poster Session. Track Co-Coordinator** WSC'2019. National Harbor, Maryland.
Submission: 58 abstracts. Accepted: 37 abstracts.
The responsibilities of the Track Coordinator include forming a program committee, assigning papers to reviewers, collecting the referee reports, formulating a recommendation to the Program Chair, and organizing the accepted papers into sessions

SCS Conferences (Spring Sim and ANNSIM) (<https://scs.org/>)

- **Proceeding Chair.** ANNSIM 2021 (Virtual Event), ANNSIM 2022 (San Diego, CA).
- **Steering Committee Member for the Track "Theory of Modeling and Simulation" (TMS).** ANNSIM21 (Virtual Event)
- **Track Co-Coordinator - TMS'20. Symposium on Theory and Foundations of Modeling and Simulation '20. Part of the 2020 Spring Simulation Conference** (Tucson, Arizona).
The responsibilities of the Track Coordinator include forming a program committee, assigning papers to reviewers, collecting the referee reports, discussing the reviews with the PC members, formulating a recommendation to the general Program Chair, and organizing the accepted papers into sessions.

Program Committee Member of the following Conference:

- Winter Simulation Conference (W2022), Introductory Tutorials Track, Modeling and Simulation Methodologies.
- ANNSIM 2022, Theory of Modeling and Simulation Track.

- IEEE 2nd International Workshop on Modeling for Sustainable Buildings and Smart Cities (MSBC 2022) (COMPSAC 2022), Virtual Event
- The 26th International Symposium on Distributed Simulation and Real-Time Applications. DS-RT 2022, Alès, France.
- XXVI Congreso de Ingeniería de Organización (CIO2022), Toledo, Spain.
- The 1st IEEE International Workshop on Modeling for Sustainable Buildings & Smart Cities (MSBC 2021) (COMPSAC 2021), Virtual Event
- The 25th International Symposium on Distributed Simulation and Real-Time Applications. DS-RT 2021, Virtual Event
- SimAUD 2021 Conference, Virtual Event
- XXV Congreso de Ingeniería de Organización (CIO2021), Virtual Event;
- SimAUD 2020 Conference, Vienna, Austria (Virtual Event)
- SIMULTECH 2020 Conference, Paris, France
- The 30th International Symposium on Software Reliability Engineering (ISSRE 2019). Abstracts Track. Berlin, Germany
- International Conference on Industry 4.0, and Smart Manufacturing (ISM2019), Campora San Giovanni, Cosenza, Italy
- SIMULTECH 2019, Prague, Czech Republic
- SAM2019 – 11th System Analysis and Modelling Conference. Languages, Methods, and Tools for Industry 4.0, Munich, Germany. SAM 2019 is co-located with MODELS 2019 - IEEE / ACM 22nd International Conference on Model Driven Engineering Languages and Systems
- Winter Simulation Conference 2018 (WSC' 2018). Gothenburg, Sweden.

Track Chair of the following Conference:

- 11th EUROSIM Congress (EUROSIM 2023), Amsterdam, June 28-30, 2023. Track Chair: Simulation in Education

OTHER

2018/10- 2021/09 SUSTAIN Research Project Coordinator at Carleton.
I am in charge of coordinating the overall project and organizing workshops for the SUSTAIN Research Project (a 3-year NSERC SDG) under the supervision of the Project Director (Prof. Wainer). I have organized Workshops in January and April with more than 20 and 30 attendants, respectively. I am also in charge of coordinating teleconferences with the industrial partner (Autodesk) and the bi-weekly meeting. I also helped Prof. Wainer with the Research Proposal.

Editorial Activities

2022 Proceedings Chair for the 2022 Annual Modeling and Simulation Conference (ANNSIM). San Diego, California.

2021 Proceedings Chair for the 2021 Annual Modeling and Simulation Conference (ANNSIM). Virtual Event.

2020 – 2022	Co-editor of the Special Issue: <i>Theory and Foundations of Modeling and Simulation</i> in the Journal <i>Simulation: Transactions of the Society for Modeling and Simulation International</i> .
2016/05 - 2017/03	Editor Assistant, In <i>Advances in Management Engineering</i> . Hernández C. Eds. Springer 2017. ISBN: 978-3-319-55888-2, Book

Journal Review Activities

<https://publons.com/researcher/1710602/cristina-ruiz-martin/peer-review/>

(Not all reviews are in publons yet)

Since 2021/01	Reviewer, Journal of Simulation
Since 2020/01	Reviewer, Computational Intelligence
Since 2020/01	Reviewer, PLOS ONE
Since 2019/10	Reviewer, DYNA, Ingenieria e Industria
Since 2020/01	Reviewer, Simulation Modelling Practice and Theory
Since 2018/12	Reviewer, TOMACS: Transactions on Modeling and Computer Simulation
2018/03	Reviewer, Reliability Engineering and Safety Systems
Since 2016/12	Reviewer, Simulation: Transactions of the Society for Modeling and Simulation International

Conference Review Activities

2021	Reviewer, Winter Simulation Conference 2021 (2 papers)
2021	Reviewer, COMPSAC 2021: Intelligent and Resilient Computing for a Collaborative World, Virtual Event (1 paper)
2019/01	Reviewer, Spring Simulation Conference 2019

Event Participation

2022/10 –	Dagstuhl Seminar on 'Computer Science Methods for Effective and Sustainable Simulation Studies' 3 rd -7 th October 2022 at Schloss Dagstuhl – Leibniz-Zentrum für Informatik in Germany. https://www.dagstuhl.de/22401 (By Invitation-Only Seminar)
2020/12	Conference Session Chair, Winter Simulation Conference 2019. Track: Modeling Methodologies
2020/11 – Cancelled due to COVID-19	Dagstuhl Seminar on 'Computer Science Methods for Effective and Sustainable Simulation Studies' 8 th -13 th November 2020 at Schloss Dagstuhl – Leibniz-Zentrum für Informatik in Germany. https://www.dagstuhl.de/20461 (By Invitation-Only Seminar)

- 2020/07 Participation in the AEC Hackathon Online https://hackaec.com/Ov_1.html
Team: BIM to DEVS
- 2017/12 Conference Session Chair, Winter Simulation Conference 2017. Track: Modeling Methodologies
- 2017/10 Conference Session Chair, INFORMS 2017 Annual Meeting
- 2017/07 Conference Session Chair, International Joint Conference. ICIEOM-ADINGOR-IISE-AIM-ASEM (IJC 2017).

Other Administration

- 2021/07 - Member of the Systems and Computer Engineering Communications Committee
- 2022/01 - Member of the Systems and Computer Engineering Committee for Teaching Assistant Recruitment and Assignment.
- 2021/07 – 2022/06 WebMaster. Department of Systems and Computer Engineering. Carleton University
- 2021/11 - Member of the Faculty of Engineering and Design EDI Council. Carleton University. I am also the leader of the focus group: “Student Support”
- 2021/07-2024/06 Elected Director-at-Large. Society for Modeling & Simulation International (SCS).
<https://scs.org/about/>
- 2021/07 – 2024/06 Member of the Senate Academic Integrity Appeals Committee, Carleton University
- 2020/10 – 2021/04 Member of Inclusion Committee. Systems and Computer Engineering. I am working with other two Professor in the department to increase the sense of “belonging” of the students and boost the visibility of underrepresented groups
- 2019/07 – 2020/06 Union Representative of the Joint Committee for the Administration of the Agreement (JCAA). Carleton University Postdoctoral Union (CUPU).
The committee manages the Professional Development Fund for Postdoctoral Fellows.
- 2018/01 Participant, Panel Discussion: How to make the University more Visible at International Level, Spain, Valladolid
- 2017/04 Jury of the X National European BEST Engineering Competition (EBEC 2017 Spain), Spain, Valladolid
I served as a jury for the Case Study section of the competition. We evaluated the proposals of the teams and we selected the finalist to represent Spain in the 2017 EBEC Final Round.

Hiring Committee Member:

- Position: Software Developer - Systems and Computer Engineering. Carleton University. (2022/02 – 2022/03)
- Position: Full Stack Web Developer - Systems and Computer Engineering. Carleton University. (2022/12)
- Position: Laboratory Technician - Systems and Computer Engineering. Carleton University. (2021/03 – 2021/06)
- Position: Instructor - Systems and Computer Engineering. Carleton University. (2020/10 – 2021/05)

Participation in Hirings at the SCE Department:

- Position: Instructor in Embedded Systems. Systems and Computer Engineering. Carleton University. Attended the Teaching Demos, Lunch and met with the candidates. Provided feedback to the Hiring Committee Chair (2022/05)

Text Interviews

2020/12	CuWise. Leading Ladies. Carleton University (In press)
2020/03	Coronavirus: How new simulations can predict the spread of future pandemics. The Conversation. https://theconversation.com/coronavirus-how-new-simulations-can-predict-the-spread-of-future-pandemics-134217
2019/10	Surviving nuclear disasters depends on stronger communications networks. The Conversation https://theconversation.com/surviving-nuclear-disasters-depends-on-stronger-communications-networks-123234
2018/11/12	Alumni from the Electrical & Computer Engineering Program Making a Difference, Ty Burke, Carleton University. Faculty of Engineering and Design https://gradstudents.carleton.ca/2018/alumni-from-the-electrical-computer-engineeringprogram-making

Memberships

2021/02	Application submitted to Professional Engineering of Ontario (P.Eng). Professional experience under review.
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