Cláudio Gomes

Key Academic Skills at a Glance

Researcher
- Participated in 5 journal and 24 conference publications (peer reviewed).
- Google H-Index is 13, ResearchGate score is 13.39, and most cited paper has 239 citations. 895 new citations since 2017.
- Awarded a Research Foundation Flanders (FWO) Scholarship.

Collaborator
- 30 international collaborations (applied mathematics, formal methods), universities (Aarhus, Carnegie Mellon, KU Leuven, UCLouvain, McGill, KTH, Manchester), and companies (Boeing, Novo Nordisk, Vestas, Lego, Technicon, Flanders Make, Virtual Vehicle Research Center, fortiss, and Bosch).

Leader
- Official co-supervisor of 6 PhD Students in the domains of modelling and simulation, manufacturing, anomaly detection, and machine learning.

Teacher
- Assisting practical lectures since 2nd year of BSc (12 semesters).
- Assistant Professor since 2022.

Learner
- Contributed to surveys in new fields (e.g., [6, 9, 41]).
- Applied knowledge from other fields to problems on own field (e.g., [36]).
- Co-authored contributions outside own field (e.g., [33, 27]).

Speaker
- Delivered +30 presentations to international audiences, 7 of which were invited, at universities such as TU Graz, UCLouvain, research institutes such as IFP Energie Nouvelles, and companies such as Siemens, Boeing Research&Technology Europe, and Novo Nordisk.

Community Assistant
- Took part in the program committee of 3 conferences (Springsim, RIVF, ANNSIM), chair of the CPS Track in the ANNSIM conference 2021 and 2022 editions, and co-organizer of 2 editions of CoSimCPS workshop.
- Part of FMI Standard Steering committee.
- Reviewed 15 papers in the past 3 years for journals such as SIMULATION, Sensors and Actuators, SoSym, and SIMPAT.

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Education

01/03/2015–31/12/2019 **PhD**, *University of Antwerp*, Property Preservation in Co-simulation, Antwerp, Belgium
Supervisor: Prof. Hans Vangheluwe.

01/09/2011–22/11/2013 **MSc and BSc degree, Mark: *18 (out of 20, honors)***, *New University of Lisbon*, A Framework for Efficient Model Transformations, Lisbon, Portugal
Supervisor: Prof. Vasco Amaral.

Research and Collaboration

Positions

02/2022–Now **Tenure Track Assistant Professor**, *Aarhus University*, Aarhus, Denmark

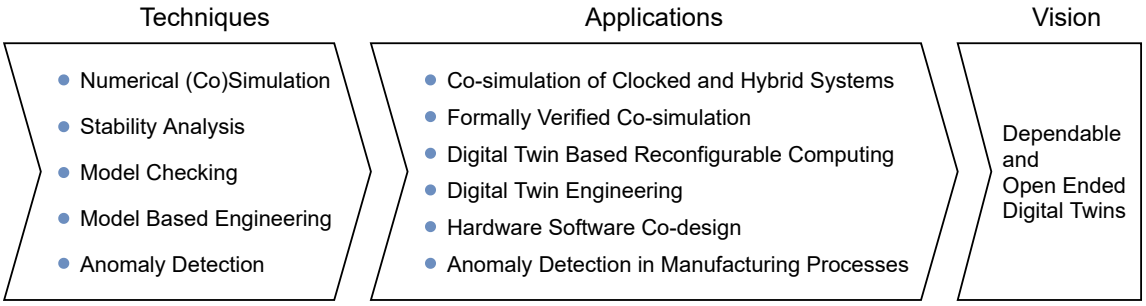
01/2020–01/2022 **Postdoc**, *Aarhus University*, Aarhus, Denmark

03/2015–12/2019 **PhD Student**, *FWO Fellow at University of Antwerp*, Antwerp, Belgium

22/11/2013–01/02/2015 **Software developer**, *Altitude Software*, Lisbon
Programming Real-time web application for telephony scripts specified by a DSL.

10/2009–11/2013 **Student Researcher**, *SOLAR Group, at the Faculty of Sciences and Technology of the New University of Lisbon*, Lisbon, Portugal

Scientific Focus Areas



Selected Scholarships & Awards

23/05/2023 **Runner Up Best Paper Award at ANNSIM Conference**, Ontario, Canada

10/10/2019 **FWO Travel Grant to Carnegie Mellon University**, Pittsburgh, United States

31/07/2019 **Best Paper Award at SIMULTECH conference**, Prague, Czech Republic

07/10/2016 **2nd Place ACM Student Research Competition**, Saint-malo, France

01/01/2016 **FWO PhD Fellowship**, *Scholarship for 4 years, full time researcher*, Antwerp

22/11/2013 **Merit Student**, *2nd highest grade of CS MSc*, Lisbon, Portugal

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Stays

11/11/2019 **Computer Science Department, Carnegie Mellon University, Pittsburgh, United States**, *Co-simulation Monitoring*, 5 weeks, Host: Prof. André Platzer

06/06/2018 **TU Graz, Austria**, *Co-simulation Collaboration*, 1 week, Host: Georg Engel (Senior Researcher)

01/03/2018 **Engineering Department, Aarhus University, Denmark**, *Verification of Co-simulation Methods*, 1 week, Host: Prof. Peter Gorm Larsen

05/10/2017 **Department of Computer Science, Manchester University, UK**, *Delayed Events in Co-simulation*, 1 week, Host: Prof. Eva Navarro-López

14/09/2017 **Applied Mathematics Department, Université Catholique de Louvain, Belgium**, *Stable Adaptive Co-simulation with Switched Systems*, 1 week, Host: Prof. Raphaël Jungers

05/09/2016 **Fortiss GmbH, Germany**, *Model Transformation Engine Optimization*, 1 week, Host: Levi Lúcio (Senior Researcher)

11/03/2016 **Engineering Department, Aarhus University, Denmark**, *Co-simulation Survey Preparation*, 1 week, Host: Prof. Peter Gorm Larsen

International Collaborations / R&D Projects

1/2020–Now **Synopsys, ESI ITI GmbH, Robert Bosch GmbH, Dassault Systemes, dSPACE GmbH, AVL List GmbH, TLK-Thermo GmbH, Altair**, *FMI Standardization Committee*, Aarhus, Denmark
Designing version 3.0 of the FMU standard. Joint Publications: [23, 21].

10/2020–Now **Novo Nordisk**, *Anomaly Detection for Manufacturing Processes*, Aarhus, Denmark
Application of state of the art anomaly detection methods to the production of dose pens.

10/2020–Now **Vestas**, *Enabling Mobile Manufacturing*, Aarhus, Denmark
Mobile manufacturing survey.

10/2020–Now **Lego**, *Anomaly Detection for Machining Processes*, Aarhus, Denmark
Joint Publications: [19].

10/2020–Now **Technicon**, *Automated Configuration of Robot Manufacturing Cells*, Aarhus, Denmark
Joint Publications: [25, 14, 13].

08/2019–10/2019 **Boeing Research and Technology Europe**, *Hint-Based Configuration of Co-simulations*, Madrid, Spain
Joint Publications: [31, 24].

09/2016 **Fortiss GmbH**, *Model Transformation Engine Optimization*, Munich, Germany
Joint Publications: [40].

Ongoing Academic Collaborations

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Researcher	Context	Department	Institution
Peter Gorm Larsen	Co-supervision and Research	Electrical and Computer Engineering	Aarhus University
Alexandros Iosifidis	Co-supervision and Research		
Carl Schultz	Research		
Lukas Esterle	Co-supervision and Research		
Henrik Ejersbo	Research		
Casper Thule	Research		
Mirgita Frasheri	Research		
Kenneth Lausdahl	Research		
Michael Sandberg	Research		
Emil Madsen	Research		
Jaco van de Pol	Research	Computer Science	
Giuseppe Abbiati	Research	Civil and Architectural Engineering	
Mahdi Abkar	Proposal Writing	Mechanical and Production Engineering	
Fenjuan Hu	Proposal Writing	Bioscience - Terrestrial Ecology	
Jim Woodcock	Research	Computer Science	University of York
John Fitzgerald	Proposal Writing and Research	School of Computing	Newcastle University
Ken Pierce	Proposal Writing and Research		
Sergiy Bogomolov	Proposal Writing and Research		
Houxiang Zhang	Proposal Writing	Faculty of Engineering	Norwegian University of Science and Technology
Peter Palensky	Proposal Writing	Electrical Engineering, Mathematics and Computer Science	Delft University of Technology
Erika Ábrahám	Proposal Writing	Computer Science	RWTH Aachen University
Gerald Schweiger	Research	Software Technology	Graz University of Technology
Ján Drgoňa	Research	Physics and Computational Sciences	Pacific Northwest National Laboratory
Christian Schlette	Co-supervision and Research	Faculty of Engineering	University of Southern Denmark
Wim Desmet	Research	Mechanical Engineering	KU Leuven
Hans Vangheluwe	Research	Computer Science	University of Antwerp
Paul De Meulenaere	Proposal Writing	Electronics - ICT	

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Applications for Funding

05/2022–Now **LakeTwin: Adaptive Lake Ecosystem Management through Digital Twin**, *DFF Research Project 1 (Thematic)*, Aarhus, Denmark
Role: PI;
Status: Writing.

01/2024–Now **ROBOSAPIENS: Robotic Self Adaptation in Novel Environments**, *Horizon Europe CL4 RIA Project (Budget: ≈4M€, ≈7 Partners, AU part 8.1 MDKK)*, Aarhus, Denmark
Role: coordinating, preparing state of the art and work packages for AU;
Status: Accepted.

11/2021 **DIGIT-BENCH: DIGItal Twin for large-scale test BENCHes for the wind industry (AU part 2.6 MDKK)**, *EUDP*, Aarhus, Denmark
Role: Co-PI, preparing state of the art and work packages for AU;
Status: Accepted.

11/2021 **DLTE (AU part 1.5 MDKK)**, *EUDP*, Aarhus, Denmark
Role: Co-PI;
Status: Accepted.

11/2021 **DILIGENT: Digital Twin Engineering for a Resilient Future**, *MSCA Doctoral Network (Budget: ≈4M€, ≈8 Partners)*, Aarhus, Denmark
Role: coordinating, preparing state of the art and work packages for AU;
Status: Rejected.

05/2021 **DiTToLA: Digital Twin for Tool Life Assessment**, *DFF*, Aarhus, Denmark
Role: preparing state of the art and work packages for digital twin;
Status: Submitted.

05/2021 **AI-rPET: Data-assisted tools for thermoforming of recycled PET in food packaging**, *DFF*, Aarhus, Denmark
Role: preparing state of the art and work packages for digital twin;
Status: Rejected.

09/2020 – 06/2024 **MADE FAST (Budget: 300MDKK, 15.6MDKK AU, 7 companies with AU)**, Aarhus, Denmark
Role: Edition Part Projects 3.01, 3.06, 4.07, 4.08, 4.09, 4.10;
Status: Accepted.

09/2020 **Wear Mitigation in Hydraulic Systems using Digital Twin**, *DFF*, Aarhus, Denmark
Role: preparing state of the art and work packages for digital twin;
Status: Rejected.

10/2020 – 09/2023 **UPSIM Unleash Potentials in SIMulation ITEA 3 Project (Budget 19.7M€, 6MDKK AU)**, Aarhus, Denmark
Role: preparing state of the art in co-simulation and simulation governance work packages;
Status: Accepted.

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06/2020 – 12/2023 **Digit Brain Innovation Action (Budget: 8M€, 3.3MDKK AU), 36 Partners**, Aarhus, Denmark
Role: Revising AU experiments;
Status: Accepted.

10/2019 **DiT-MaP: Digital Twins for Manufacturing Processes Villum Foundation**, Aarhus, Denmark
Role: preparing state of the art in digital twins;
Status: Rejected.

03/2019 **PULSE: Perpetual Learning for cyber-physical Systems of Systems H2020**, Aarhus, Denmark
Role: revising state of the art in co-simulation;
Status: Rejected.

Teaching

Spring 2022 **Software Design**, *Assistant professor*, Aarhus, Denmark
Tasks: Preparing and delivering lectures on software architecture and design patterns
Program: BsC.

Spring 2022 / Spring 2021 / Spring 2020 **Systems Engineering**, *Teaching assistant with Associate Prof. Stefan Hallerstede on model based systems engineering with co-simulation*, Aarhus, Denmark
Tasks: Delivering practical lecture, tutorial on using the INTO-CPS application, and preparing questionnaires.
Program: MSc in Computer Engineering.

Fall 2019 / Fall 2018 / Fall 2017 / Fall 2016 / Fall 2015 **Modelling of Software-Intensive Systems**, *Teaching assistant with Prof. Hans Vangheluwe on causal block diagrams*, Antwerp, Belgium
Tasks: Preparing course exercises and exam questions on Petri Nets and Simulink Block Diagrams, and correction of exams and assignments.
Program: MSc in Computer Science.

Fall 2018 / Fall 2017 **Model Driven Engineering**, *Teaching assistant with Prof. Hans Vangheluwe on Domain Specific Languages and Model Transformations*, Antwerp, Belgium
Tasks: Responsible for the practical part of the course: determining lab assignments and projects, delivering practical lectures, formulating and correcting part of the exam.
Program: MSc in Computer Science.

Fall 2013 / Fall 2012 **Domain Specific Languages**, *Teaching assistant on Domain Specific Languages with Prof. Vasco Amaral*, Lisbon, Portugal
Tasks: Helping with lab assignments and projects, delivering practical lectures, correcting part of the exam and assignments.
Program: MSc in Computer Science.

Spring 2012 / Spring 2011 **Formal languages and automata theory**, *Teaching assistant on Automata, Grammars, and Regular Expressions with Prof. Vasco Amaral*, Lisbon, Portugal
Tasks: Helping with lab assignments and projects, delivering practical lectures, correcting part of the exam and assignments.
Program: BSc in Computer Science Engineering.

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Fall 2010 **Introduction to Programming in C**, *Teaching assistant preparing and correcting exercises for students from physics and mathematics BSc with Prof. Artur Miguel Dias*, Lisbon, Portugal
Tasks: Helping with lab assignments and projects, delivering practical lectures and recapping theory, and correcting part of the exam and assignments.
Program: BSc in Computer Science Engineering.

Co-supervision & Management

02/2020–07/2023 **Christian Møldrup Legaard**, *Scope: Application of Deep Learning to Dynamical System Simulation*, Aarhus University

11/2020–10/2023 **Daniella Tola**, *Scope: Validation and Generation of Compatible Manufacturing Cell Configurations*, Aarhus University

10/2020–09/2023 **Fatemeh Kakavandi**, *Scope: Anomaly Detection in Manufacturing Processes*, Aarhus University

11/2019–10/2022 **Hao Feng**, *Scope: Digital Twin Engineering*, Aarhus University

6/2020–04/2022 **Jonas Kjær Rask**, *Scope: Enabling Mobile Factories*, Aarhus University

02/2020–07/2023 **Simon Thrane Hansen**, *Scope: Formal verification of co-simulations*, Aarhus University

Dissemination

09/2022 **DICO Workshop, Aarhus, Denmark**, *Co-simulation and It's Role in Digital Twin*

06/2022 **ECCOMAS Conference, Oslo, Norway**, *Co-simulation and It's Role in Digital Twin Engineering*

05/2022 **Driving IT Aarhus 2022, Aarhus, Denmark**, *Introduction to Digital Twin Engineering*, Host: IDA IT

06/2021 **Novo Nordisk, Denmark**, *Introduction to the Functional Mockup Interface Standard*, Host: Thomas Algot Søllested, Project Manager

10/2019 **Siemens, Belgium**, *Tutorial on co-simulation*, Host: Dr. Stefan Dutre, Senior Product Manager

08/2019 **Boeing Research and Technology Europe, Madrid**, *Hint-based Configuration of Co-simulations*, Host: Dr. Alejandro Torres Gámiz, Systems Modeling and Simulation Engineer

20/06/2018 **Austrian Institute for Sustainable Technologies, Graz, Austria**, *Introduction to Co-simulation*, Host: Dr. Georg Engel, Senior Researcher

19/06/2018 **TU Graz, Austria**, *Introduction to Co-simulation*, Host: Dr. Gerald Schweiger, Head of Intelligent Systems Lab

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5/09/2017 **CoSim-CPS Workshop, Trento, Italy**, *Keynote: Co-simulation, State of the Art*, Host: Prof. Cinzia Bernardeschi, Dr. Paolo Masci, and Prof. Peter Gorm Larsen, Co-organizers of the workshop.

13/04/2018 **Carnegie Mellon University, Pittsburgh, USA**, *Co-simulation: State of the Art*, Host: Prof. David Garlan, Associate Dean for Master's Programs in the School of Computer Science

1/03/2017 **IFP Energies Nouvelles, Paris, France**, *Input Approximations in Co-simulation*, Host: Dr. Laurent Duval, Researcher and Data science project manager

17/08/2016 **Université Catholique de Louvain, Louvain-la-Neuve, Belgium**, *Stable Optimization of Co-simulation: a Switched Systems Approach*, Host: Prof. Raphaël Jungers, Department of Applied Mathematics

22/03/2016 **MPM4CPS Training, Tallinn, Estonia**, *Model-based Multi-disciplinary Co-simulation*, Host: Hans Vangheluwe, head of the MSDL research group

Community Building

Scientific Event Organization

07/12/2021 **Co-Chair**, *5th Workshop on Formal Co-Simulation of Cyber-Physical Systems*, Virtual

22/07/2021 **Co-Chair**, *Annual Modeling and Simulation Conference*, Virtual

14/09/2020 **Co-Chair**, *4th Workshop on Formal Co-Simulation of Cyber-Physical Systems*, Virtual

22/07/2020 **Chair**, *CPS Track of Summersim Conference*, Virtual

16/09/2019 **Co-Chair**, *3rd Workshop on Formal Co-Simulation of Cyber-Physical Systems*, Oslo, Norway

Program Committee Activities

2021 **CPS Track – Annual Modeling and Simulation Conference**

2016/2018/2019/2020 **TMS/DEVS Track – Spring simulation conference Multi-Conference**

2020 **CPS Track – Summer Simulation Conference**

2021 **ACM Conference on Principles of Advanced Discrete Simulation**

2019 **JuliaCon**

2019 **Workshop on Modeling and Simulation of Software-Intensive Systems**

2018 **Workshop on Distributed Estimation and Control in Networked Systems**

2018/2019/2020 **Workshop on Formal Co-Simulation of Cyber-Physical Systems**

2016 **Winter Simulation Conference**

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2016 **IEEE RIVF International Conference on Computing and Communication Technologies: Research, Innovation, and Vision for the Future**

Journal Reviewing Activities

2021 **Simulation: Transactions of the Society for Modeling and Simulation**

2021 **Sensors and Actuators A: Physical**

2018/2019/2020/2021 **International Journal on Software and Systems Modeling**

2019/2021 **Parallel Computing**

2018/2020 **Machine Theory and Practice journal**

2018/2019 **Simulation Modelling Practice and Theory journal**

2018 **Oil & Gas Science and Technology journal**

2017 **Engineering with Computers journal**

Professional Experience

22/11/2013–01/02/2015 **Software developer**, *Altitude Software*, Lisbon
Front and Backend engineer of a real-time web application for telephony scripts and customer relations, specified by a Domain Specific Language.

Languages

Portuguese Native

English Professional working proficiency

Danish Intermediate

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Publications

Peer Reviewed Journals

[1] Qamar Alfalouji, Thomas Schranz, Basak Falay, Sandra Wilfling, Johannes Exenberger, Thorsten Mattausch, **Cláudio Gomes**, and Gerald Schweiger. Co-simulation for buildings and smart energy systems — A taxonomic review. *Simulation Modelling Practice and Theory*, 126:102770, July 2023.

[2] Fatemeh Kakavandi, **Cláudio Gomes**, Roger De Reus, Jeppe Badstue, Jakob Langdal Jensen, Peter Gorm Larsen, and Alexandros Iosifidis. Towards Developing a Digital Twin for a Manufacturing Pilot Line: An Industrial Case Study. In *Digital Twin Driven Intelligent Systems and Emerging Metaverse*, pages 39–64. Springer Nature Singapore, Singapore, 2023.

[3] Farshid Naseri, Santiago Gil, Corneliu Barbu, Erdal Cetkin, Gulsah Yarimca, Anders Jensen, Peter Gorm Larsen, and **Cláudio Gomes**. Digital Twin of Electric Vehicle Battery Systems: Comprehensive Review of the Use Cases, Requirements, and Platforms. *Renewable and Sustainable Energy Reviews*, 179:113280, 2023.

[4] Christian Møldrup Legaard, Thomas Schranz, Gerald Schweiger, Ján Drgoňa, Basak Falay, **Cláudio Gomes**, Alexandros Iosifidis, Mahdi Abkar, and Peter Gorm Larsen. Constructing Neural Network-Based Models for Simulating Dynamical Systems. *ACM Computing Surveys*, page 3567591, 2021.

[5] Bentley James Oakes, **Cláudio Gomes**, Franz Rudolf Holzinger, Martin Benedikt, Joachim Denil, and Hans Vangheluwe. Hint-Based Configuration of Co-simulations with Algebraic Loops. *Simulation and Modeling Methodologies, Technologies and Applications*, 1260:1–28, 2021.

[6] Gerald Schweiger, **Cláudio Gomes**, Georg Engel, Irene Hafner, Josef-Peter Schoeggl, Alfred Posch, and Thierry Nouidui. An empirical survey on co-simulation: Promising standards, challenges and research needs. *Simulation Modelling Practice and Theory*, 95:148–163, 2019.

[7] Casper Thule, Kenneth Lausdahl, **Cláudio Gomes**, Gerd Meisl, and Peter Gorm Larsen. Maestro: The INTO-CPS Co-simulation Framework. *Simulation Modelling Practice and Theory*, 92(April):45–61, 2019.

[8] **Cláudio Gomes**, Bart Meyers, Joachim Denil, Casper Thule, Kenneth Lausdahl, Hans Vangheluwe, and Paul De Meulenaere. Semantic Adaptation for FMI Co-simulation with Hierarchical Simulators. *SIMULATION*, 95(3):1–29, 2018.

[9] **Cláudio Gomes**, Casper Thule, David Broman, Peter Gorm Larsen, and Hans Vangheluwe. Co-simulation: A Survey. *ACM Computing Surveys*, 51(3):49:1–49:33, 2018.

Peer Reviewed Conferences

[10] Lukas Esterle, Henrik Ejersbo, Mirgita Frasheri, **Cláudio Gomes**, Hugo Daniel Macedo, and Peter Gorm Larsen. Digital Twins for Autonomous Intelligent Systems: From Development to Deployment. In *2022 IEEE International Conference on Autonomic Computing and Self-Organizing Systems Companion (ACSOS-C)*, pages 53–54, CA, USA, September 2022. IEEE.

[11] Hao Feng, **Cláudio Gomes**, Santiago Gil, Peter H. Mikkelsen, Daniella Tola, Peter Gorm Larsen, and Michael Sandberg. Integration Of The Mape-K Loop In Digital Twins. In *2022 Annual Modeling and Simulation Conference (ANNSIM)*, pages 102–113, San Diego, CA, USA, July 2022. IEEE.

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[12] Fatemeh Kakavandi, Roger De Reus, **Cláudio Gomes**, Negar Heidari, Alexandros Iosifidis, and Peter Gorm Larsen. Product Quality Control in Assembly Machine under Data Restricted Settings. In *2022 IEEE 20th International Conference on Industrial Informatics (INDIN)*, pages 735–741, Perth, Australia, July 2022. IEEE.

[13] Emil Madsen, Daniella Tola, Carlos Hansen, **Cláudio Gomes**, and Peter Gorm Larsen. AURT: A Tool for Dynamics Calibration of Robot Manipulators. In *2022 IEEE/SICE International Symposium on System Integration (SII)*, pages 190–195, Narvik, Norway, January 2022. IEEE.

[14] Daniella Tola, Emil Madsen, **Cláudio Gomes**, Lukas Esterle, Christian Schlette, Casper Hansen, and Peter Gorm Larsen. Towards Easy Robot System Integration: Challenges and Future Directions. In *2022 IEEE/SICE International Symposium on System Integration (SII)*, pages 77–82, Narvik, Norway, January 2022. IEEE.

[15] Thomas Wright, **Cláudio Gomes**, and Jim Woodcock. Formally Verified Self-adaptation of an Incubator Digital Twin. In *Leveraging Applications of Formal Methods, Verification and Validation. Practice*, volume 13704, pages 89–109, Cham, 2022. Springer Nature Switzerland.

[16] Hao Feng, **Cláudio Gomes**, Casper Thule, Kenneth Lausdahl, Alexandros Iosifidis, and Peter Gorm Larsen. Introduction to Digital Twin Engineering. In *2021 Annual Modeling and Simulation Conference (ANNSIM)*, pages 1–12, Fairfax, VA, USA, July 2021. IEEE.

[17] Simon Thrane Hansen, **Cláudio Gomes**, Peter Gorm Larsen, and Jaco Van de Pol. Synthesizing Co-Simulation Algorithms with Step Negotiation and Algebraic Loop Handling. In *2021 Annual Modeling and Simulation Conference (ANNSIM)*, pages 1–12, Fairfax, VA, USA, July 2021. IEEE.

[18] Emin Oguz Inci, Jan Croes, Wim Desmet, **Cláudio Gomes**, Casper Thule, Kenneth Lausdahl, and Peter Gorm Larsen. The Effect and Selection of Solution Sequence in Co-Simulation. In *2021 Annual Modeling and Simulation Conference (ANNSIM)*, pages 1–12, Fairfax, VA, USA, July 2021. IEEE.

[19] Till Böttjer, Georg Ørnskov Rønsch, **Cláudio Gomes**, Devarajan Ramanujan, Alexandros Iosifidis, and Peter Gorm Larsen. Data-Driven Identification of Remaining Useful Life for Plastic Injection Moulds. In *Towards Sustainable Customization: Bridging Smart Products and Manufacturing Systems*, pages 431–439, Cham, 2021. Springer International Publishing.

[20] **Cláudio Gomes**, Giuseppe Abbiati, and Peter Gorm Larsen. Seismic Hybrid Testing using FMI-based Co-Simulation. In *Proceedings of the 14th International Modelica Conference*, online, 2021. Linköping University Electronic Press, Linköpings Universitet.

[21] **Cláudio Gomes**, Masoud Najafi, Torsten Sommer, Matthias Blesken, Irina Zacharias, Oliver Kotte, Pierre Mai, Klaus Schuch, Karl Wernersson, Christian Bertsch, Torsten Blochwitz, and Andreas Junghanns. The FMI 3.0 Standard Interface for Clocked and Scheduled Simulations. In *Proceedings of the 14th International Modelica Conference*, online, 2021. Linköping University Electronic Press, Linköpings Universitet.

[22] Simon Thrane Hansen, **Cláudio Gomes**, Maurizio Palmieri, Casper Thule, Jaco van de Pol, and Jim Woodcock. Verification of Co-simulation Algorithms Subject to Algebraic Loops and Adaptive Steps. In Alberto Lluch Lafuente and Anastasia Mavridou, editors, *Formal Methods for Industrial Critical Systems*, volume 12863, pages 3–20, Cham, 2021. Springer International Publishing.

[23] Andreas Junghanns, Torsten Blochwitz, Christian Bertsch, Torsten Sommer, Karl Wernersson, Andreas Pillekeit, Irina Zacharias, Matthias Blesken, Pierre Mai, Klaus Schuch, Christian Schulze, **Cláudio Gomes**, and Masoud Najafi. The Functional Mock-up Interface 3.0 -

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New Features Enabling New Applications. In *Proceedings of the 14th International Modelica Conference*, online, 2021. Linköping University Electronic Press, Linköpings Universitet.

[24] Bentley James Oakes, **Cláudio Gomes**, Franz Rudolf Holzinger, Martin Benedikt, Joachim Denil, and Hans Vangheluwe. Hint-Based Configuration of Co-simulations with Algebraic Loops. *Simulation and Modeling Methodologies, Technologies and Applications*, 1260:1–28, 2021.

[25] Daniella Tola, **Cláudio Gomes**, Carl Schultz, Christian Schlette, Casper Hansen, and Lukas Esterle. RoboCIM: Towards a Domain Model for Industrial Robot System Configurators despite Tribal Knowledge. In *5th International Joint Conference on Rules and Reasoning*, Leuven, Belgium, 2021.

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