

Benoit COMBEMALE

Full Professor, University of Rennes
IRISA and Inria Labs, Engineering School ESIR

Born in November 12, 1981
French, Married
2 children

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version: Nov., 2023

Biography

Since September 2020, Benoit Combemale is Full Professor of Software Engineering at the University of Rennes, France. He is evolving within the engineering school ESIR (head of the Computer Science department in 2021-2022), and he is co-head (together with O. Barais) of the research team DiverSE (env. 40 members) joint to the IRISA and Inria labs. Prof. Combemale is also adjunct researcher in the team SM@RT of the IRIT labs (Toulouse, France), and scientific advisor of the startup TwiinIT. He is interested in software engineering, including model driven software engineering (MDE), software language engineering (SLE), software validation & verification (V&V) and DevOps; mostly in the context of (smart) cyber-physical systems and Internet of things. He is also teaching software and systems modeling, MDE, SLE, V&V and DevOps in the department and worldwide in various engineering schools and universities.

Prof. Benoit Combemale co-authored 3 books, and 190+ journal and conference publications in the fields of MDE, SLE and V&V. He also edited 2 books, and various special issues in scientific journals. He is Editor-in-Chief of the SoSyM Journal (Springer-Nature), the main journal in the domain of software and system modeling. He is also a member of the Editorial Boards of the international journals JOT, SQL (Springer) and COLA (Elsevier). He is also a member of the Steering Committee of the IEEE / ACM SIGSOFT MODELS conference, ACM SIGPLAN SLE conference, the ICT4S conference, and the MLE workshop series. He has been the program co-chair of MODELS 2024, SLE 2014, ECMFA 2019 and ICT4S 2020, and general co-chair of ICT4S 2023, MODELS 2016 and SLE 2017. He also used to serve as program committee member for various top-level conferences and workshops in software engineering (incl., MODELS, SEFM, ECMFA, ICMT...). Prof. Combemale is also very active in setting up and participating to satellite events of flagship conferences, including organizing workshops and panels. He coordinated and participated in many collaborative projects, either directly with industry or in projects funded by the European Union or the French government. He is also a founding member of the GEMOC initiative, an international effort to develop techniques, frameworks, and environments to facilitate the creation, integration, and automated processing of heterogeneous modeling languages. He is a member of the ACM, the IEEE and the IEEE Computer Society.

Before joining University of Rennes 1, Benoit Combemale was a Full Professor of Software Engineering in the Department of Mathematics and Computer Science at the University of Toulouse (2017-2020). He was evolving within the research team SM@RT of the Research Institute in Computer Science of Toulouse (IRIT). He was also a Research Scientist at Inria (2018-2020), evolving in the research team DiverSE joint to the IRISA and Inria labs. Prior to that, Prof. Combemale was an Associate Professor at University of Rennes 1 (2009-2017), evolving within the research team DiverSE (formerly Triskell), and teaching in the engineering school ESIR. During this period, he has been on secondment at Inria (2013-2016), as Research Scientist in the DiverSE research team. In 2016 (6 months) and 2024 (2 months), Prof. Combemale been a visiting professor at McGill University (Canada), in the group of Prof. Jörg Kienzle and Pr. Gunter Mussbacher. From 2010 to 2015, he has been also a regular visiting researcher at Colorado State University (USA), in the group of Prof. Robert B. France. Prior to that, he was a postdoctoral fellow at INRIA within the team AtlanMod (2008-2009), and a PhD candidate from 2005 to 2008 within the teams ACADIE and MACAO of the IRIT lab. He was also a teacher assistant at IUT de Blagnac (2004-2005) and the engineering school INPT ENSEEIHT (2005-2008). Benoit Combemale used to teach in various engineering schools, such as INSA Toulouse (2006-2009), INSA Rennes (2009-2012), CentraleSupélec (2012-2016) and ENSAI (2012-2016).

In 2015, Benoit Combemale received his Habilitation in Computer Science (in French *Habilitation à Diriger des Recherches*) from the University of Rennes 1. He earned a PhD in Computer Science in 2008 from the University of Toulouse, awarded the Leopold Escande prize. He graduated as M.Sc. in Computer Science in 2005 from the University of Toulouse.

Education

- 2015 **HDR (*Habilitation à Diriger des Recherches*) in Computer Science**
Title: "Towards Language-Oriented Modeling"
Reviewers: Franck Barbier, Lionel Briand, Betty H.C. Cheng and Oscar Nierstrasz
Examiners: Peter Mosses, Joerg Kienzle, Benoit Baudry and Jean-Marc Jézéquel
IRISA and Inria Rennes labs. (DIVERSE team) - Université of Rennes 1, France
- 2008 **PhD in Computer Science (Awarded the Leopold Escande Prize 2008)**
PhD Thesis title: "A Metamodeling Approach for Model Simulation and Verification"
Reviewers: Jean Bézivin and Pierre-Alain Muller
Examiners: Antoine Beugnard, François Vernadat, Bernard Coulette and Xavier Crégut
Invited member: Patrick Farail
IRIT Laboratory (ACADIE team) - University of Toulouse, France
- 2005 **M. Sc. in "Software Safety and High Performance Computing"**
INPT ENSEEIHT & Université Paul Sabatier, Toulouse, France
Master Thesis title: "Specification and Verification of Software Process Models"
GRIMM Laboratory (ISYCOM team) - Université le Mirail, Toulouse, France
- 2004 **IUP "New IT for Enterprise" (Awarded the title "Ingénieur Maitre")**
Université le Mirail, Toulouse, France *First Class Honors*
Apprenticeship with the company SNC INEO SCLE Ferroviaire, Toulouse (31)
- 2002 **B. Sc. in Computer Science (DUT "Informatique")**
IUT B de Blagnac, Université le Mirail, Toulouse, France *First Class Honors*
Internship (4 months) : SCLE, Toulouse, France

Academic and Industrial Positions

- Since 2020 **Full Professor** University of Rennes 1 (France)
Teacher in the Engineering School ESIR (head of the Computer Science Department in 2021-2022)
Researcher in the DIVERSE team (IRISA & Inria labs, co-head since 2022)
Adjunct Researcher in the SM@RT team (IRIT)
Bonus for scientific excellence (*Prime d'excellence scientifique*) since 2020
- 2017 – 2020 **Full Professor** University of Toulouse Jean-Jaurès (France)
Researcher in the SM@RT team (IRIT lab). Teacher in the Maths & Computer Science Dep. (UT2J)
Bonus for scientific excellence (*Prime d'excellence scientifique*) 2017–2020
- 2009 – 2017 **Associate Professor** University of Rennes 1 (France)
Researcher in the DIVERSE team (IRISA & Inria labs). Teacher in the Engineering School ESIR
Bonus for scientific excellence (*Prime d'excellence scientifique*) 2013–2017
- 2008 – 2009 **Research Assistant (post-doctoral position)** Inria, AtlanMod team (France) Inria's Grant
- 2005 – 2008 **PhD Candidate and Teaching Assistant (moniteur)** INPT ENSEEIHT, Toulouse (France)
Model Driven Engineering, OOP, Algorithmic, Systems
- Sep. 02 – Jun. 04 **Project Manager in Apprenticeship** SNC INEO SCLE Ferroviaire, Toulouse (France)
- Apr. 02 – Aug. 02 **Software Engineer** SA SCLE, Toulouse (France)

Since its creation in 2022, I am **Scientific Advisor** of the startup TwiinIT.

I have been also **Research Scientist at Inria** from 2018 to 2020 as part-time secondment (*demi-délégation*), and from 2013 to 2016 as full-time researcher on leave (*détachement*), both in the DIVERSE team (IRISA & Inria labs).

From 2010 to 2015, I have been a regular **Visiting Researcher** at Colorado State University (USA), in the group of Prof. Robert B. France. In 2016 and 2024, I have been **Visiting Professor** at McGill University (Canada), in the groups of Prof. J. Kienzle and G. Mussbacher.

I used to be **teaching assistant** (vacataire) at IUT B, CS Department, Blagnac (2004 – 2005), INSA Toulouse (2006 – 2010), University of Toulouse 2 (2009 – 2010, ENSAI (2011 – 2014), INSA Rennes (2009 – 2011), Supélec Rennes (2012 – 2014), and University Yaoundé I, Cameroun (2006-2008).

Research Projects

MBDO (2023-2026)	Model-Based DevOps (co-PI for UR1) <i>ANR/DFG International Project https://mbdo.github.io/</i>
TEST4SCIENCE (2023-2026)	Testing facilities for Scientific Computing (Principal Investigator) <i>Bilateral collaboration with CEA-DAM</i>
LANGUAGE SPEC (2023-2026)	Low-code Language Specialization (Principal Investigator) <i>Grant from the French Ministry of Armed Forces</i>
MIP4.0 (2021-2025)	Collaborative platform for multi-physics simulation (Principal Investigator for Inria) <i>DGAC collaborative project.</i>
ONEWAY (2021-2023)	Variability management and digital twins (Principal Investigator for UR1) <i>DGAC collaborative project.</i>
IPSCO (2021-2022)	Intelligence des process de support et des communautés (Principal Investigator for UR1) <i>Regional collaborative project.</i>
DEBUG4SCIENCE (2020-2022)	Debugging facilities for Scientific Computing (Principal Investigator) <i>Bilateral collaboration with CEA-DAM</i>
FORMALDSL (2019-2022)	Formal and Executable Specification of DSL Families (Principal Investigator) <i>Grant from the French Ministry of Armed Forces</i>
RESIST (2021-2023)	Resilient Software science <i>Inria associate team with SIMULA</i>
ALE (2017-2023)	Agile Language Engineering (Principal Investigator) <i>Inria associate team with the SWAT team at CWI</i>
GLOSE (2017-2020)	GLOBALIZATION in Systems Engineering (Principal Investigator for CNRS) <i>Bilateral collaboration with Safran</i>
KAULUA (2017-2020)	Modular and Distributed IDEs (Principal Investigator) <i>Bilateral collaboration (CIFRE) with the Obeo company.</i>
IDM4SCO (2018-2019)	Model-Driven Engineering for Complex Systems (Co-PI with Serge Stinckwich) <i>National network on MDE for software related to complex systems</i>
EMMA (2017-2018)	Engineering xDSML (Co-PI with Tanja Mayerhofer) <i>WTZ (AT) / PHC Amadeus (FR) grant between TU Wien and Univ. Toulouse.</i>
MDE4INDUSTRY4.0 (2017)	Modeling for Industry 4.0 (Principal Investigator) <i>Bilateral collaboration with Agileo.</i>
FAMILY (2016-2019)	DSL Families for Packet Filtering Policy (Principal Investigator) <i>Grant from the French Pôle d'Excellence Cyber</i>
CLARITY (2014-2017)	Ecosystème pour la plateforme d'ingenierie systeme Melody <i>LEOC Project http://clarity-se.org/</i>
MPM4CPS (2014-2018)	Multi-Paradigm Modelling for Cyber-Physical Systems (Management Committee) <i>EU COST Action http://www.cost.eu/ict</i>
GEMOC (2012-2016)	A Generic Framework for Model Execution and Dynamic Analysis (Project Coordinator) <i>ANR Project, Program INS http://www.gemoc.org/ins</i>
DIVERSIFY (2013-2016)	Explore Ecological Diversity for New Software Design Principles <i>FP7 Project, FET http://diversify-project.eu</i>
CYBERDEFENCE (2014-2016)	Formal DSL design and implementation (Co-Principal Investigator) <i>French Defense Procurement Agency (DGA)</i>
MBSAR (2013-2015)	Model-Based Security Analysis at Runtime (Principal Investigator) <i>CNRS Project, Program PICS http://www.gemoc.org/mbsar</i>
VARYMDE (2011-2015)	Variability in Model Driven Engineering (Co-Principal Investigator) <i>Bilateral collaboration with Thales Research & Technology</i>
RELATE (2011-2014)	Engineering and provisioning of service-based Cloud applications <i>European Project FP7 Marie Curie ITN http://www.relate-itn.eu/</i>
AS GEMOC (2011)	Survey on Heterogeneous Modeling (Principal Investigator) <i>CNRS Specific Action from GDR GPL http://www.gemoc.org/as2011</i>
OPEES (2009-2012)	Open Platform for the Engineering of Embedded Systems <i>European Project ITEA2 http://www.opees.org/</i>
PODMDE (2011)	MDE and Model Composition Application (Principal Investigator) <i>Bilateral collaboration with Pod Programming</i>
UCSAALS (2009)	User-Centric Safe Adaption of Assisted Living Systems <i>Scientific Project of the University of Rennes 1</i>
TOPCASED (2005-2009)	Toolkit in OPEN source for Critical Applications & SystEms Development <i>DGCIS, FUI Project http://www.topcased.org</i>

PhD Students

- 2023–... **Philemon Houdaille** *Polyglot program testing*
Co-supervised with Djamel Khelladi and Gunter Mussbacher
- 2023–... **Ewen Brune** *Testing framework for scientific computing*
Co-supervised with Arnaud Blouin and Dorian Leroy (Test4Science Project)
- 2023–... **Chiara Relevat** *DSL Specialization*
Co-supervised with Gervan Leguernic (grant from DGA and Brittany Council)
- 2023–... **Lina Bilal** *Model-Based DevOps*
Co-supervised with Jean-Marc Jézéquel (MBDO Project)
- 2023–... **Romain Lefeuvre** *Smart DevOps*
Co-supervised with Quentin Perez and Jessie Galasso-Carbonnel
- 2022–... **Theo Giraudet** *Collaborative Platform for Heterogeneous Modeling*
Co-supervised with Arnaud Blouin (CIFRE convention with Obeo)
- 2020–... **Gwendal Jouneaux** *Self-Adaptable Language*
Co-supervised with Olivier Barais and Gunter Mussbacher (grant from the French government)
- 2020–2023 **Anne Bumiller** *Self-Adaptable Authentication Systems*
Co-supervised with Olivier Barais and Stéphanie Challita (CIFRE convention with Orange)
- 2018–2022 **June Benvegny-Sallou** *On Reliability and Flexibility of Scientific Software in Environmental Science: Towards a Systematic Approach to Support Decision Making.* Co-supervised with Johann Bourcier (grant from Univ. Rennes 1)
- 2018–2022 **Pierre Jeanjean** *IDE as Code: Reifying Language Protocols as First-Class Citizens.*
Co-supervised with Olivier Barais (GLOSE project)
- 2017–2022 **Fabien Coulon** *Towards flexible Integrated Development Environment*
Co-supervised with Olivier Barais (CIFRE convention with Obeo)
- 2016–2021 **Dorian Leroy** *Behavioral Typing to Support Offline and Online Analysis for Executable DSLs*
Co-supervised with Manuel Wimmer at TU Wien (Tetrabox project)
- 2016–2019 **Manuel Leduc** *On modularity and performance of External Domain-Specific Language implementations.* Co-supervised with Olivier Barais and Gervan LeGuernic (Family project)
- 2015–2017 **Marcelino Rodriguez Cancio** *Contributions on approximate computing techniques and how to measure them.* Co-supervised with Benoit Baudry and Olivier Barais (Clarity project)
- 2013–2016 **David Mendez-Acuna** *Leveraging software product lines engineering in the construction of domain specific languages.* Co-supervised with Benoit Baudry (Marie Curie ITN Relate)
- 2013–2016 **Thomas Degueule** *Composition and interoperability for external domain-specific language engineering.* Co-supervised with Olivier Barais and Arnaud Blouin (Merge project)
- 2012–2015 **Erwan Bousse** *Execution trace management to support dynamic V&V for executable DSMLs*
Co-supervised with Benoit Baudry (grant from the French government)
- 2010–2014 **Emmanuelle Rouillé** *Gestion de la variabilité et automatisation des processus de développement*
Co-supervised with Jean-Marc Jézéquel and Olivier Barais (CIFRE convention with Sodifrance)
- 2010–2013 **Clément Guy** *Facilités de typage pour l'ingénierie des langages*
Co-supervised with Jean-Marc Jézéquel and Steven Derrien (grant from the French government)

Master Students

- 2023 **Rust-based Language Servers** Bastien Sauvat ESIR (3 months) Rennes, France. Co-supervised with Philemon Houdaille. and Djamel Khelladi
Testing Polyglot Applications Philemon Houdaille ENS (6 months) Rennes, France. Co-supervised with Djamel Khelladi
Usability functions for low-code language workbenches Arthur Allain ESIR (3 months) Rennes, France. Co-supervised with Arnaud Blouin and Théo Giraudet
- 2022 **Language Models** Jean-Baptiste Doderlein ENS (6 months) Rennes, France. Co-supervised with Mathieu Acher and Djamel Khelladi
Polyglot Programming Romain Briend ESIR (6 months) UR1, Rennes, France. Co-supervised with Djamel Khelladi
- 2021 **Polyglot Live Programming** Philemon Houdaille ENS (6 months) Rennes, France. Co-supervised with Djamel Khelladi
From Monolithic to Microservice Architecture: The Case of Extensible and Domain-Specific IDEs Romain Belafia Research Master 2 (6 months) UR1, Rennes, France.
DSL for Language Protocols Théo Giraudet Master 2 (6 months) UR1, Rennes, France.
- 2020 **Self-Adaptable Virtual Machines** Gwendal Jouneaux Research Master 2 (6 months) UR1, Rennes, France.
Integration of third party models in CoSApp and co-simulation Janice Conquet Stage de Master (6 months) TU Eindhoven, The Netherlands.
- 2019 **Self-Adaptable Languages** Gwendal Jouneaux Research Master 1 (6 months) UR1, Rennes, France.
- 2018 **Unpredictable Languages** Pierre Jeanjean Research Master (6 months) ENSEEIHT, Toulouse, France.
- 2015 **Metamorphic DSL** Pierre Legall Research Master (6 months) UR1, Rennes, France. Co-supervised with Mathieu Acher
Live Modeling Stéphane Mangin M. Sc (6 months) University of Rennes 1, France. Co-supervised with Mathieu Acher
- 2012 **Requirements management led by formal verification** Erwan Bousse Research Master (6 months) UR1, Rennes, France. Co-supervised with Benoît Baudry et David Mentré (Mitsubishi)
- 2011 **Formal and tool-supported operator for multi-formalism modelling** Jonathan Marchand Research Master (6 months) UR1, Rennes, France. Co-supervised with Benoît Baudry
- 2010 **Coping with Modular Modelling in fUML** André Fonseca Research Master (6 months) UR1, Rennes, France. Co-supervised with Jean-Marc Jézéquel
- 2009 **Advanced Techniques for Model Handling in the Eclipse Platform** Cauê Avila Clasen Engineering School (6 months) UFSC, Brésil. Co-supervised with Frédéric Jouault
- 2008 **MDE and Ladder Validation and Verification** Darlam Bender Engineering School (6 months) UFSC, Brésil. Co-supervised with Xavier Crégut
- 2007 **Model Validation and Simulation in Up2UML and TOPCASED** Youssef Dkiouak Engineering School (6 months) ENSIAS, Maroc. Co-supervised with Xavier Crégut
Modeling of the TOPCASED Quality Process Jean-Noël Guyot B. Sc (4 months) Université Paul Sabatier, Toulouse, France. Co-supervised with Xavier Crégut et Angel Garcia
A GMF-based SPEM Model Editor Boris Libert B. Sc (4 mois) IUP NTIE, Université le Mirail, Toulouse, France. Co-supervised with Xavier Crégut et Angel Garcia
A Simplified TOPCASED Model Simulator Vincent Gaillaud Engineering School (9 mois) CNAM Toulouse, France. Co-supervised with Xavier Crégut
Instantiation Management for the Simulation of UML State Machines Christophe Bez M. Sc. (4 months) INPT ENSEEIHT, France. Co-supervised with Xavier Crégut

Invited Workshops and Schools

2024 6d. (org.)	1st Workshop on Compositionality for Digital Twins Bellairs Research Institute of McGill
2023 6d. (org.)	2nd Workshop on Polyglot Development Bellairs Research Institute of McGill
2020 5d. (org.)	3rd Winter Modelling Meeting San Vigilio di Marebbe (Italy)
2022 5d. (org.)	Model-Driven Engineering of Digital Twins Dagstuhl Seminar #22362
2022 6d. (org.)	1st Workshop on Polyglot Development Bellairs Research Institute of McGill
2021 5d.	Static Methods for Correctness of Model and Program Transformations Dagstuhl Seminar #21491
2020 6d. (org.)	2nd Workshop on Data and Models Bellairs Research Institute of McGill
2020 5d.	2nd Winter Modelling Meeting San Vigilio di Marebbe (Italy)
2019 5d.	Composing Model-Based Analysis Tools Dagstuhl Seminar #19481
2019 6d. (org.)	1st Workshop on Data and Models Bellairs Research Institute of McGill
2018 5d. (org.)	Modeling for Sustainability Dagstuhl Seminar #18351
2018 6d. (org.)	2nd Workshop on Modular DSL Development Bellairs Research Institute of McGill
2018 5d.	1st Winter Modelling Meeting San Vigilio di Marebbe (Italy)
2017 5d. (org.)	SLEBOK: The Software Language Engineering Body of Knowledge Dagstuhl Seminar #17342
2017 6d. (org.)	1st Workshop on Modular DSL Development Bellairs Research Institute of McGill
2016 5d.	Engineering Academic Software Dagstuhl Seminar #16252
2016 6d. (org.)	1st Modelling For Sustainability Workshop Bellairs Research Institute of McGill
2015 6d.	1st Concern-Oriented Reuse (CORE) Workshop Bellairs Research Institute of McGill
2014 5d.	Model Driven Development for Distributed Real-time Embedded Systems Brest - France
2014 5d. (org.)	Globalizing Domain-Specific Languages Dagstuhl Seminar #14412
2014 6d.	1st Modeling Outside the Box (MOTB) Workshop Bellairs Research Institute of McGill
2013 5d.	Meta-Modeling Model-Based Engineering Tools Dagstuhl Seminar #13182
2013 6d.	5th Aspect Oriented Modelling Workshop Bellairs Research Institute of McGill
2012 6d.	4th Aspect Oriented Modelling Workshop Bellairs Research Institute of McGill
2011 6d.	Computer Automated Multi-Paradigm Modelling Bellairs Research Institute of McGill
2008 3d.	Perspectives Workshop: Model Engineering of Complex Systems Dagstuhl - Allemagne
2006 5d.	Model Driven Development for Distributed Real-time Embedded Systems Brest - France
2006 15d.	Ecole de Jeunes Chercheurs en Programmation (EJCP'06) Luchon, Toulouse - France
2005 3d.	Training on the Eclipse Environment Valtech Training Toulouse - France
2005 – 2008 30d.	Teaching Training (Centre d'Initiation a l'Enseignement Supérieur – CIES)

Invited Talks and Keynotes

- 2023 **Expériences et défis scientifiques des jumeaux numériques**
Invited talk at Aristote (21/09/23)
- 2022 **Model-Driven Engineering for Enterprise Digital Twins: Opportunities and Challenges**
Invited talk in the workshop KAAE'22 (virtual, 24/02/22), and keynote at ME (MODELS'22 workshop)
When Scientific Computing Meets Software Engineering
Invited talk in JFMS'22 (04/22)
- 2021 **Towards Smart Modeling (Environments)**
Invited talk at the Virtual Meetup of Strumenta Community (25/11/21).
Bringing Intelligence to Smart Cyber-Physical Systems
Invited talk at Inria (19/10/21) and GDR GPL (02/12/21).
- 2019 **Smart Modeling: On the Convergence of Scientific and Engineering Models**
Invited talk at Lancaster university, UK (14/11/19).
Bringing Intelligence to Sociotechnical IoT Systems: Modeling Opportunities and Challenges
Keynote at MDDE4IoT'19, DE (15/09/19).
Breathe Life Into Your IDE
Talk at LangDev'19, NL (22/03/19).
- 2018 **Model Execution: Past, Present and Future**
Keynote at EXE'18, DK (14/10/18).
Modeling For Sustainability - Or How to Make Smart CPS Smarter?
Keynote at Models@run.time'18, DK (14/10/18), and invited talk at TU Wien, AT (15/05/18).
Execution Framework of the GEMOC Studio
Talk at LangDev'18, NL (08/03/18).
- 2017 **Model Simulation, Graphical Animation, and Omniscient Debugging with Sirius Animator.**
Talk at SiriusCon'17, FR (09/11/17).
Modeling For Sustainability - Or How to Make Smart CPS Smarter?
Invited talk at CWI, NL (03/11/17).
Sound, yet Flexible, Modeling: A Language Engineering Point Of View
Keynote at FlexMDE'17, US (18/09/17).
Towards Language-Oriented Modeling
Invited talk at UQAM, CA (03/05/17).
From Model (driven) Engineering, to Language (driven) Engineering
Invited talk at CEA-DAM (12/01/15).
- 2016 **Modeling for Sustainability**
Invited talk at Lancaster University (05/12/16).
Dynamic Validation & Verification in Language-Oriented Modeling
Keynote at MoDeVVA 2016 (03/10/16).
Towards Language-Oriented Modeling
Invited talk at RWTH Aachen University (11/07/16).
Modeling for Smart Cyber-Physical Systems
Talk at CPS days (26/01/16).
- 2015 **A Journey Through MDE, DSL and SLE**
Talk at JDEV 2015 (02/07/15).
Breathe Life into Your Designer!
Talk at EclipseCon Europe 2015 (05/11/15) and EclipseCon France 2015 (25/06/15).
Modeling for Sustainability
Invited talk at INRA (19/06/15).
On the Globalization of Modeling Languages
Invited talk at IRT Saint Exupery (08/06/15).
From Model (driven) Engineering, to Language (driven) Engineering
Invited talk at McGill (17/04/15).
- 2014 **From Model (driven) Engineering, to Language (driven) Engineering**
Invited talk at University of Namur (16/12/14).
The Role of (Software) Languages in the Socio-Technical Coordination
Invited talk at the 2nd Workshop on TowArds the Model DrIveN Organization (AMINO 2014).
MDE and SLE: From Theory to Practice
Invited talk at the MDE Day of DevLog (27/10/14).

Invited Talks, Keynotes and Seminars (contd)

- 2013 **Modeling, Composition and Simulation of Heterogeneous Models**
Invited talk at the MDE Day of DevLog (18/10/13).
On the Globalization of Modeling Languages
Invited keynote at Neptune 2013 (22/05/13).
On Modeling and Testing When Unpredictability Becomes a Pattern
Keynote speaker at CIEL 2013 (02/04/13).
On the Globalization of Modeling Languages
Colorado State University, USA (20/02/13).
On Language Composability
Workshops AOM at Bellairs (09/02/13).
Model-Driven Engineering for Software Language Engineering
Università degli Studi di Milano, Italy (16/01/13).
- 2012 **Formally Defining and Iterating Infinite Models**
68NQRT Seminar at IRISA/Inria Rennes, France (25/10/12).
Model Driven Engineering for Software Language Engineering
Universidade Federal do Paraná, Brazil (12/07/12).
Mashup of Meta-Languages: Building Modular and Efficient DSML
Workshops AOM and CAMPaM at Bellairs (30/04/12).
- 2011 **Executable Metamodeling for Model V&V**
Kings College London (10/06/11).
- 2010 **Hyper-Agility: A Model-Driven Software Agility from Design-Time to Run-Time**
Agile Tour Rennes 2010 (07/10/10).
Executable Metamodeling for Model V&V
Colorado State University, USA (25/05/10).
- 2009 **A Formal Metamodeling Approach – Application to Model V&V**
LAAS CNRS (Toulouse, 13/02/09), LISI (Poitiers, 26/03/09), and LIP6 (Paris, 05/05/09).
A Formal Metamodeling Approach – Application to Model V&V and Autonomous Systems
Inria Rennes (21/01/09) and Inria Lille (13/03/09).
- 2008 **Metamodeling Approach for Model Simulation** *CEA-List at Saclay (19/09/08).*
Model Verification and Simulation using Model Transformation *MDE Training at EMN (18/06/08).*
- 2007 **Execution Semantics & MDE, Application to the Process Engineering** *INRIA-ATLAS (03/01/07).*
A Framework to Formalise the MDE Foundations *IRIT-UTM (06/06/07).*
Presentation of the Research Work *Action IDM. Paris, 21/05/07.*
- 2006 **SPEM 1.1 vs. SPEM 2.0** *Topcased-WP1 (19/06/06).*

Industrial transfert

The entirety of my research work is grounded in industrial concerns and is naturally conducted systematically in collaboration with industrial partners. This is reflected in a strong contractual activity, as well as the establishment of close ties with development teams at some of our partners, the transfer of ideas and software components, and participation in open-source communities. Naturally, I recently transferred all the results of the GEMOC project to a project within the Eclipse Foundation, aiming to benefit from the collaborative context that open source provides for open and shared innovation (see Eclipse GEMOC Studio).

Furthermore, I collaborate with the company Obeo to industrialize certain practices of language modularization, as well as model validation and verification (see Obeo Sirius Lab). Finally, I maintain close ties (internships, CIFRE theses, bilateral contracts, etc.) with the development teams of the multi-physics simulation environment CosApp at Safran, the systems engineering Capella at Thales, and the numerical analysis NabLab at CEA DAM.

In 2021, I participated in the creation of the startup TwiinIT as the Chief Science Advisor. TwiinIT develops and markets a collaborative platform for the early design of multi-physics systems. This platform benefits from the transfer of the vision that we have established and developed over the past years, especially with partners such as Safran.

Editorial and Community Services

- **Editor in Chief of the International Journal on Software and Systems Modeling (SoSyM), Springer-Nature (2022-).**
- **Editorial Boards:** The JOT Journal (former deputy editor-in-chief of the journal, 2020-2023), Elsevier Intl Journal on Computer Languages (COLA), the Springer Intl Journal on Software Quality (SQJ).
- **Steering Committees:** IEEE / ACM SIGSOFT Intl. Conference on Model-Driven Engineering Languages and Systems (MODELS, member since 2023), Intl. Conference on ICT4S (member since 2022), ACM SIGPLAN Intl. Conference on Software Language Engineering (SLE, member since 2014, chair 2018–2021), International Workshop series on *MLE, Modeling Language Engineering* (co-founder, and member since 2019), and International Workshop series on *Model-Driven Engineering of Digital Twins* (ModDiT, co-founder, and member since 2021).
- **General co-chair** for MODELS 2016, SLE 2017 and ICT4S 2023
- **Program co-chair** for SLE 2014, ECMFA 2019, ICT4S 2020 and MODELS 2024
- **Co-organizer of the Dagstuhl Seminar 22362** "Model-Driven Engineering of Digital Twins"
- **Co-organizer of the Dagstuhl Seminar 17342** "SLEBOK: The Software Language Engineering Body of Knowledge"
- **Co-organizer of the Dagstuhl Seminar 14412** "Globalizing Domain-Specific Languages"
- **Co-organizer of the McGill Bellairs workshop series** (2016-2024)
- **Co-founder** and steering committee member of the EDT.Community Seminar Series (<https://edt.community/>).
- **Program Board** member for MODELS (2018, 2020-2023)
- **Program Committees**
 - Conferences: ECMFA (24-20, 18, 16-11), ICT4S (22), RE (22-21), EASE (22-21), ISEC (21), Eclipse SAAM Mobility 2021, FDL (22, 20), QUATIC (22, 20), CBI (20, 18), MODELS'17, ICMT (19-12), SLE'15, Tutorials@MODELS'15, SEFM (15, 13-12), ICSSP'15, APSEC (14-11), QSIC'13, ITSLE'11, IDM'11, INFORSID'11
 - Workshops: Eclipse SAAM Mobility (23, 21), ModDiT (24-23), DevOps4CPS-Testing@ICST'21, SRC@MODELS'20, CoMoDiTy@ER'20, MoSC@STAF'20, Doctoral Symposium@MODELS'19, PNSE (20-19), FlexMDE@MODELS'19, DevOps@MODELS'19, MLE@MODELS'19, DevOps'18, MiSE@ICSE (18-15), LaMod@Modularity'16, MoMo@Modularity'16, MDEbug@MODELS (18-17), EXE@MODELS (18-15), MPM (15-14), VOLT@ICST (14-13), CSP@WETICE (14-12), EduSymp@MODELS (21, 13), AMT (13-12), CMA@MODELS'13, CMA@RE'13, PMDE'12, FML'10, SafeModel'10, SéMo'08, SéMo'07, MP'07.
 - PC member for the Workshop Track at the 46th International Conference on Software Engineering (ICSE 2024)
- **Organizing Committees**
 - *Co-chair* of the workshop on the *Model-Driven Engineering of Digital Twins (ModDiT 2022)* @ MODELS 2022
 - *Journal-first chair* @ MODELS 2022, France
 - *Finance chair* @ ICPE 2021, France
 - *Tools & Demos co-chair* @ MODELS 2020, Canada
 - *Industry day co-organizer* @ MODELS 2018, Denmark
 - *Co-organizer* of the session "Application of Advanced Software Engineering Tools and Methods in the Environmental Sciences" at CMWR'18
 - *Panel co-chair* @ MODELS 2015, Canada
 - *Co-chair* of the workshop on the *Globalization of Modeling Languages (GEMOC 2015)* @ MODELS 2015, Canada
 - *Co-chair* of the workshop on the *Next Generation of Modularity Approaches for Multiple Dimensions of Sustainability (Sustainability 2015)* @ Modularity 2015, Fort Collins, USA
 - *Program co-chair* of the summer school MDD4DRES'14, France
 - *Demonstration co-chair* @ MODELS 2014, Spain
 - *Co-chair* of the workshop on the *Future* @ STAF 2020, Bergen, Norway
 - *Co-chair* of the workshop on the *Globalization of Modeling Languages (GEMOC)* @ MODELS'18, Copenhagen, Denmark

- *Co-chair* of the workshop on the *Globalization of Modeling Languages (GEMOC)* @ MODELS'14, Valencia, Spain
- *Co-chair* of the workshop on the *Globalization of Modeling Languages (GEMOC)* @ MODELS'13, Miami, USA
- *Co-chair* of the workshop on the *Globalization of Domain Specific Languages (GlobalDSL)* @ ECOOP, ECMFA, ECSA 2013, Montpellier, France
- *Co-chair* of the 8th International Educators' Symposium @ MoDELS 2012 (EduSymp 2012), Innsbruck, Austria
- *Founder of the series of workshops* SéMo (on modeling language semantics), GEMOC (on the globalization of modeling languages), MLE (on Modeling Language Engineering and Execution), and ModDiT (on Model-Driven Engineering of Digital Twins)
- *Sponsorship chair* of AOSD'10 (St Malo, Fr), and GDR-GPL'12 & CIEL'12 (Rennes, Fr)
- *Localization chair* of SLE'08 (Toulouse, Fr)
- Member of the organizing committee of the conferences, workshops and summer schools MDD4DRES'14, AOSD'10 (St Malo, Fr), SafeModel@IDM'10 (Pau, Fr), MtATL'09 (Nantes, Fr), SéMo'08 (Mulhouse, Fr), LMO'07, IDM'07 and SéMo'07 (Toulouse, Fr).
- **Coordinator of the international GEMOC initiative** (cf. <http://www.gemoc.org>), chair of the corresponding Research Consortium at the Eclipse Foundation, and leader of the Eclipse project for the GEMOC Studio. GEMOC coordinates research partners worldwide to develop breakthrough software language engineering approaches that support global software engineering through the use of multiple domain-specific languages.
- **PhD Committees (in addition to my PhD students)**
 - Hamza Bourbouh, ISAE-Supaéro (March, 2023), Reviewer
 - Valentin Besnard, ENSTA Bretagne (December 2020), Reviewer
 - Théo Zimmermann, Univ Paris (December 2019), Reviewer
 - Stephanie Challita, Univ Lille 1 (December 2018), Reviewer
 - Pablo Inostroza Valdera, Univ. Amsterdam & CWI (November 2018), The Netherlands
 - Ulyana Tikhonova, TU/e (November 2017), The Netherlands, Reviewer
 - Cyril Cecchinell, Univ. Nice (November 2017), Examiner
 - Blazo Nastov, Univ. Montpellier (November 2016), Reviewer
 - Florent Latombe, Univ Toulouse (June 2016), Examiner
 - Andreas Wortmann, Aachen University, Germany (June 2016), Reviewer
 - Matias Ezequiel Vara Larsen, Univ Nice (April 2016), Examiner
 - Paola Vallejo: University of Brest, Lab-STICC (December 15th, 2015), Examiner
 - Faiez Zalila: University of Toulouse, IRIT (December 9th, 2014), Examiner
 - Jean-Christophe Bach: Loria, Nancy (September 12th, 2014), Examiner
 - Moussa Amrani: Univ. Luxembourg (November 5th, 2013), Examiner
 - Laurent Wouters: LIP6, Paris (January 18th, 2013), Examiner
 - Robert Guduvan: ONERA, Toulouse (April 18th, 2013), Examiner
 - Mounira Kezadri: University of Toulouse, IRIT (July 11th, 2013), Examiner
- **National and International Expertises**
 - Prime d'Investissement Recherche de l'UPMC,
 - Conventions Industrielles de Formation par la Recherche (CIFRE),
 - European Research Council (ERC)
 - Engineering and Physical Sciences Research Council (EPSRC),
 - Netherlands Organisation for Scientific Research (NWO),
 - Portuguese Foundation for Science and Technology (FCT).
- **Workgroup Participation**
 - Member of the GDR GPL, cf. <http://gdr-gpl.imag.fr/>,
 - Member of the SysML France association, cf. <http://www.sysml-france.fr/>.
- **Other industrial dissemination**
 - Organization at Inria of a workshop about MDE for industry (Inria 5.7), Inria, May, 2012
 - Participation to the Inria Industry Days for the EPI TRISKELL/DiverSE, 2010, 2015
 - Co-Organizer with MEITO of a workshop on software modularity and agility for industry, ESIR, March, 2010

Publications of Benoit Combemale (November 29, 2023)

SUMMARY	International	French	Total
Book	2	1	3
Journal article	35	4	39
Journal editorials	6	0	6
Book chapter	3	0	3
Conference paper	76	11	87
Tool demonstration	7	0	7
Workshop paper	31	4	35
Proceedings	11	0	11
Total	171	20	191

GS 11/23	Total
Citations	4426
h-index	38
i10-index	102

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— Journals and Book Chapters —

International

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- [J2] Gauthier Lyan, Jean-Marc Jézéquel, David Gross-Amblard, Romain Lefeuvre, and Benoît Combemale. Reasoning over time into models with datatime. *Softw. Syst. Model.*, 22(5):1689–1712, 2023.
- [J3] Steffen Zschaler, Erwan Bousse, Julien Deantoni, and Benoît Combemale. A generic framework for representing and analyzing model concurrency. *Softw. Syst. Model.*, 22(4):1319–1340, 2023.
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- [J5] Dorian Leroy, June Sallou, Johann Bourcier, and Benoit Combemale. On the role of computer languages in scientific computing. *Computing in Science and Engineering*, pages 1–6, 2022.
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- [J8] Benoît Combemale, Jörg Kienzle, Gunter Mussbacher, Hyacinth Ali, Daniel Amyot, Mojtaba Bagherzadeh, Edouard Batot, Nelly Bencomo, Benjamin Benni, Jean-Michel Bruel, Jordi Cabot, Betty H. C. Cheng, Philippe Collet, Gregor Engels, Robert Heinrich, Jean-Marc Jézéquel, Anne Koziolk, Sébastien Mosser, Ralf H. Reussner, Houari A. Sahraoui, Rijul Saini, June Sallou, Serge Stinckwich, Eugene Syriani, and Manuel Wimmer. A hitchhiker’s guide to model-driven engineering for data-centric systems. *IEEE Softw.*, 38(4):71–84, 2021.
- [J9] Gunter Mussbacher, Benoît Combemale, Jörg Kienzle, Silvia Abrahão, Hyacinth Ali, Nelly Bencomo, Márton Búr, Loli Burgueño, Gregor Engels, Pierre Jeanjean, Jean-Marc Jézéquel, Thomas Kühne, Sébastien Mosser, Houari A. Sahraoui, Eugene Syriani, Dániel Varró, and Martin Weysow. Opportunities in intelligent modeling assistance. *Softw. Syst. Model.*, 19(5):1045–1053, 2020.

- [J10] Jörg Kienzle, Gunter Mussbacher, Benoit Combemale, Lucy Bastin, Nelly Bencomo, Jean-Michel Bruel, Christoph Becker, Stefanie Betz, Ruzanna Chitchyan, Betty Cheng, Sonja Klingert, Richard Paige, Birgit Penzenstadler, Norbert Seyff, Eugene Syriani, and Colin C Venters. Towards Model-Driven Sustainability Evaluation. *Communications of the ACM*, pages 1–10, 2020.
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- [J13] Andreas Wortmann, Olivier Barais, Benoit Combemale, and Manuel Wimmer. Modeling languages in industry 4.0: an extended systematic mapping study. *Software and Systems Modeling*, 19(1):67–94, 2020.
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— Conferences —

International

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