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# 1 Research highlights

## 1.1 Short bio

Since 2010, I hold an Assitant Professor (Maitre Assistant) position in the Department of Automation, Production and Computer Science at IMT Atlantique (formerly Ecole des Mines de Nantes). I'm deputy team leader of the Naomod team (LS2N, UMR CNRS 6004).

I obtained my M.Sc. in Computer Science and Engineering at Politecnico di Milano in 2005 (100/100) and my Ph.D. in Information Engineering (mark A) in April 2009, with a thesis on Model Transformations for Artifact Generation in Model-Driven Environments (advisor prof. Piero Fraternali).

Since the beginning of my career, my research focused on the design, implementation and evaluation of novel methods and tools for modeling software systems and reasoning on software models. The scientific work, which resulted in high-profile publications, has always been supported by substantial implementation and demonstration efforts, and by a continuous interaction with industry. While during my doctoral studies I was focused on modeling a precise application domain (data-intensive Web applications), moving to IMT Atlantique I expanded the spectrum of modeled applications. Recently I have started to look outside of purely software systems, by considering hybrid hardware/software models for cyber-physical systems.

During my doctoral studies I have been visiting researcher at the McGill university (Montreal, Canada, 2007), where I came in contact with multi-paradigm heterogeneous modeling. Later I have been several times a visiting researcher at the National Institute of Informatics (NII) in Tokyo, Japan, where I collaborated on advancing the state of the art in bidirectional transformations.

## 1.2 Publications and visibility

I am widely recognized as an expert in model transformation, notably for extending the model-transformation paradigm to higher-order model transformations, and for my contributions to the ATL language since 2010. In particular, my article "On the Use of Higher-Order Model Transformations" has collected 252 citations since 2009 (up to June 2023 - Google Scholar). I have an h-index of 26 (June 2023 - Google Scholar).

My top five publications are:

- Zheng Cheng, Massimo Tisi, Remi Douence. CoqTL: a Coq DSL for rule-based model transformation. *Software and Systems Modeling* 19 (2), 2020, pages 425-439, Springer.
- Amine Benelallam, Abel Gómez, Massimo Tisi, and Jordi Cabot. Distributing relational model transformation on MapReduce. *Journal of Systems and Software*, 142:1–20, 2018. Elsevier.
- Soichiro Hidaka, Frederic Jouault, Massimo Tisi: On Additivity in Transformation Languages. *Proceedings of the International Conference on Modeling Languages and Systems, MODELS 2017*, Springer.
- Soichiro Hidaka, Massimo Tisi, Jordi Cabot, Zhenjiang Hu: Feature-based classification of bidirectional transformation approaches. *Software and System Modeling*, Volume 15(3), 2016, Pages 907-928, Springer.
- Massimo Tisi, Frédéric Jouault, Piero Fraternali, Stefano Ceri, Jean Bézivin: On the Use of Higher-Order Model Transformations. *Proceedings of the 5th European Conference on Model Driven Architecture - Foundations and Applications*, 2009, Pages 18–33, Springer.

Awards:

- Nominee for Best Paper Award in the European Joint Conferences on Theory and Practice of Software 2017 (ETAPS 2017) for the article: Zheng Cheng, Massimo Tisi, A Deductive Approach for Fault Localization in ATL Model Transformations.
- Nominee for Best Paper Award in the International Conference for Software Testing 2017 (ICST 2017) for the article: Zheng Cheng, Massimo Tisi, Incremental Deductive Verification for Relational Model Transformations.
- Best Performance Award for the ATL solution to the Transformation Tool Contest 2017 (TTC 2017), at the Software Technologies: Applications and Foundations Conference 2017 (STAF 2017).
- Best paper award in the International Conference on Web Engineering 2009 (ICWE 2009) for the article: Fraternali, P., Tisi, M.: A higher-order generative framework for weaving traceability links into a code generator for Web application testing.

- Best paper award in the International Workshop on Model Driven Web Engineering 2008 (MDWE 2008) for the article: Brambilla, M., Fraternali, P., Tisi, M.: A Metamodel Transformation Framework for the Migration of WebML Models to MDA.

### 1.3 Funding and Project Management

I have worked in several national (Italian and French), and European research projects, as well as with several companies for research exploitation and technology transfer (including Sodifrance, Atos, Thales, and several SMEs). I have secured more than 1.5M Euro in fundings from European and national projects.

Highlights:

- Coordinator for the Lowcomote project: Training the Next Generation of Experts in Scalable Low-Code Engineering Platforms (2019-2023: Marie Curie International Training Network).
- Work-package leader in the MONDO project: Scalable Modeling and Model Management on the Cloud (2013-2016: 7th Framework Programme, STREP 2012). Mention: **Excellent**.
- Principal investigator for Ecole des Mines de Nantes in the AutoMobile project: Automated Mobile App Development (2013-2015: 7th Framework Programme, Research for SMEs). Mention: **Excellent**.

### 1.4 Research Community Service

I have served as General Chair of the Software Technologies: Applications and Foundations 2022 (STAF 2022) Federated Conference. I co-organized succesful workshop series on Scalability in Model Driven Engineering (Big-MDE) and Modeling in Low-Code Development Platforms (LowCode). I have served in the program committee of several international conferences and workshops in software engineering, including the leading conferences on modeling (MODELS), model transformation (ICMT) and software language engineering (SLE). I was Artifact Chair in MODELS, and co-organizer of the Project Showcase at STAF.

I reviewed for top journals in software engineering, including Transactions of Software Engineering, Journal of Software: Evolution and Process, Software and System Modeling, Science of Computer Programming. I was editor for a special section of the Software and System Modeling journal.

I am member of the Monitoring and Evaluation Committee at the Pôle Images & Réseaux.

### 1.5 Teaching and Academic Supervision

Since 2013 I am lecturer of Domain-Specific Languages and Model-Driven Engineering (master level) and of Databases (bachelor level) at IMT Atlantique. I co-advised 10 PhD students and 7 postdocs and research engineers. I am member of the council of the SPIN doctoral school, and of co-responsible of the Doctoral Affairs at the LS2N laboratory.

### 1.6 Main research areas

#### *Model Transformation Languages*

In the scope of model-driven engineering, model transformation aims to provide a mean to specify the way to produce target models from a number of source models. For this purpose, it enables developers to define the way source model elements must be matched and navigated in order to initialize the target model elements. Formally, a model transformation has to define the way for generating a model Mb, conforming to a metamodel MMB, from a model Ma conforming to a metamodel MMA. In practice, model transformations are widely used in model-driven engineering, e.g. during code generation (their originally intended use case), translation among modeling languages, data translation for interoperability, controlled updates over a model at runtime.

I have investigated different paradigms for model transformation, including the relational paradigm (exemplified by the ATL transformation language), the functional paradigm (exemplified by the OCL language), the data-flow paradigm (exemplified by the fUML language). I have studied correspondences between these paradigms and translations among them.

I have contributed at clarifying the properties of transformation languages, especially bidirectionality (by feature modeling the design space of bidirectional transformations) and recently additivity, a property relating the syntactic constructs of the transformation specification to their semantic output. Finally I have distinguished the important class of higher-order transformations, i.e. transformations that manipulate other transformations.

### *Model Transformation Verification*

With the increasing use of model-driven engineering in safety-critical domains (e.g., in automotive industry, medical data processing, aviation), it is crucial to develop techniques and tools that prevent incorrect model transformations from generating faulty models. The effects of such faulty models could be unpredictably propagated into subsequent MDE steps, e.g. code generation.

For this reason, there is a great need of mechanisms to ensure quality and the absence of errors in models and model transformations. Verification is one of the effective techniques that are typically used to achieve this.

Verification of models and model transformations refers to the ability of these elements to satisfy one or more correctness properties. These properties express certain characteristics that the element under analysis must feature in order to be considered correct. It is typical for verification tools to use formal methods to determine whether the model or model transformation under analysis satisfies the correctness properties under scrutiny.

I have contributed to formalize the execution semantics of the ATL language by translation to the Boogie intermediate verification language. Based on this semantics I have designed a fault localization method, capable of pinpointing the faulty lines of a transformation that does not respect a contract.

I have designed a new technique for the decomposition of transformation contracts, to improve the efficiency of the automatic verification process on a SMT solver. I have contributed an incremental verification technique, so that after a change to the system, only the impacted part needs to be reverified. This idea greatly increases the applicability of transformation verification in industrial scenarios.

### *Scalability of Model-Driven Engineering*

The increasing adoption of Model-Driven Engineering in industrial contexts highlights scalability as a critical limitation. Indeed, several Model-driven tools show critical efficiency limitations in handling very large models (VLMs), e.g. models made by millions of model elements, not unusual in real-life industrial scenarios. Examples of such models appear both at development time, e.g. while reverse-engineering big systems and at runtime, e.g. coming from a set of sensors, from OpenData repositories or when building applications on social networks. Moreover, the proliferation of models produced as input-outputs of software engineering tasks at development/maintenance time also highlights scalability problems in the management of the model artifacts.

In order to tackle the scalability problem I research solutions on three main axes:

- **Efficient Transformation.** Performing only the strictly required computation on models improves scalability, as only parts of VLM need to be loaded and manipulated. I provided the following support for the efficient execution of model-to-model transformations: 1) An engine for the incremental execution of model-to-model transformations, performing only the necessary re-computations; 2) A lazy execution semantics for model transformations, delaying the computation to when it is strictly needed; 3) An engine for the event-driven reactive execution of model transformations, where the engine performs only the computation needed to react to model updates and requests from the user application.
- **Parallel Transformation.** The previous techniques increase efficiency by avoiding unnecessary computation. However, this is not always possible, as several transformations perform global algorithms on the whole model. In this scenario, a solution for the scalability problem would be the parallelization of the transformation with the aim of decomposing it in smaller independent problems, more easily manageable with current tools. In this context, I conceived 1) A shared-memory implicit parallel execution engine for the ATL transformation language and 2) A distributed framework for model transformation on the Map-Reduce programming model. In particular automatic model distribution is performed within the cluster, by a streaming partitioning algorithm over the input model.
- **Efficient Model Persistence.** Very large models need high-performance mechanism for their storage and access. Traditional approaches are file-based, especially XML-based, or rely on relational databases. I investigated innovative mechanisms for model storage, by relying on map-databases, graph-databases and distributed hash-tables. These approaches have recently converged in the NeoEMF model persistence tool.

## 2 Research projects

I participated for the NaoMod team to the following funded collaborative projects:

- RODIC: ANR project on Rapid reConfiguration of manufacturing systems (Co-investigator, 2022-2026)
- SEPTIME: Institut Carnot F2E project on a Sensor-Enhanced Projection Tool Informed by an Epidemiological Model (Principal Investigator, 2022-2024)
- AIDOaRT: H2020-ECSEL project on AI-augmented automation supporting modeling, coding, testing, monitoring, and continuous development in Cyber-Physical Systems (Co-investigator, 2021-2024)
- CyprIoT: a RFI Atlantic2020 collaboration with UQAC on Model-Driven Engineering for the Internet of Things (Principal Investigator, 2020)
- Lowcomote: Marie Curie European Training Network (ETN) on Low-Code Engineering Platforms (Coordinator, 2019-2023)
- CYCLOPS: ANR MRSEI project on Domain-Specific Model-Centric Engineering of Smart Cyber-Physical Systems of Systems (Coordinator, 2019-2021)
- MegaM@RT2: ECSEL project on a scalable model-based framework for continuous development and run-time validation of complex systems (Co-investigator, 2017-2020)

With the AtlanMod team I have been principal investigator for the following funded collaborative projects (besides participating in several others):

- MONDO: EC FP7 STREP project on scalable model-driven engineering (Principal Investigator, 2013-2016)
- AutoMobile: EC FP7 Research for SMEs project on Automated Mobile App Development (Principal Investigator, 2013-2015)
- StreamMaster: Pole Images et Reseaux PME 2011 project on Smart Management of Document Streams (Principal Investigator, 2012-2014)
- OPEES: ITEA 2 Call 3 project on Open Platform for the Engineering of Embedded Systems (Principal Investigator, 2009-2012)

When I was in Politecnico di Milano, I participated in several research projects, including:

- Energy CH-IT
- SECO: Search Computing
- BISF: Business e Innovazione senza Frontiere
- AutonomaMente

### 3 Supervision

Since 2022 I am member of the council of the SPIN Doctoral School and co-responsible for Doctoral Affairs at LS2N (UMR CNRS 6004).

I have co-supervised the following PhD students:

- Matthew Coyle, 2022-ongoing, Title: “Automated reconfiguration by AI-augmented model transformation”, Supervision 30%, Director: Samir Loudni, LS2N
- James Pontes Miranda, 2022-ongoing, Title: “AI-Augmented Support for Model Views”, Supervision 30%, Director: Gerson Sunyè, LS2N
- Josselin Enet, 2021-ongoing, Title: “Protocol-based Generic Tooling for Domain-Specific Languages”, Supervision 30%, Director: Gerson Sunyè, LS2N. Publications: [IJ1]
- Zahra Rajaei, 2018-ongoing, Title: “A model-driven framework for leveraging graph deep learning in model-driven engineering”, Advisor, Director: Shekoufeh Kolahdouz-Rahimi, University of Isfahan, Iran. Publications: [IW1]
- Jolan Philippe, 2020-2022, Title: “Contribution to the Analysis of the Design-Space of a Distributed Transformation Engine”, Supervision 30%, Director: Gerson Sunyè, LS2N. Now postdoc at IMT Atlantique. Publications: [IC1], [IW2]
- Joachim Hotonnier, 2018-2021 (abandoned), Title: “Deep Specification for Domain-Specific Modeling”, Supervision 30%, Director: Gerson Sunyè, LS2N. Now employed by Magicplan. Publications: [IC4]
- Thibault Béziers la Fosse, 2018-2021, Title: “Model-driven Methods for Dynamic Analysis applied to Energy-Aware Software Engineering”, Supervision 30%, Director: Gerson Sunyè, LS2N. Now employed by Obeo. Publications: [IW5], [IW8], [IJ9], [IW3], [IC3]
- Imad Berrouyne, 2018-2021, Title: “A Model-Driven Methodology to Unify Software Engineering in the Internet of Things”, Supervision 30%, Director: Gerson Sunyè, Cotutelle IMT Atlantique et Université du Québec à Chicoutimi (UQAC), **Mention UQAC: excellent**. Now postdoc at University of Luxemburg. Publications: [IW7], [IC6], [IC5], [IJ2]
- Amine Benelallam, 2014-2016, Title: “Model transformation on distributed platforms: decentralized persistence and distributed processing”, Supervision 30%, Director: Jordi Cabot, Ecole des Mines de Nantes. Now employed by Mathworks. Publications: [IC18], [IW15], [IW10], [IC15], [IW11], [IC13], [IJ12], [IJ11]

I have supervised the following postdocs and research engineers:

- Gwendal Daniel (research engineer)
- Zheng Cheng (post-doc researcher)
- Salvador Martinez Pérez (post-doc researcher)
- Valerio Cosentino (post-doc researcher)
- Zied Saidi (research engineer)
- Abel Gómez Llana (post-doc researcher)
- Hassene Choura (research engineer)

I have participated to the thesis review or defense jury of the following phd students:

- Antonio Garmendía (jury member, 8 November 2019, Universidad Autonoma de Madrid)
- Gwendal Daniel (invited jury member, 14 November 2017, IMT Atlantique)
- Romeo Marinelli (thesis reviewer, 2016, Università dell’Aquila)
- Loli Burgueño (thesis reviewer, 2016, Universidad de Málaga)
- Elena Planas Hortal (thesis reviewer, 2013, Universitat Oberta de Catalunya)
- Medhi Iraqi (jury member, 15 September 2014, Ecole Nationale Supérieure d’Arts et Métiers - CER d’Aix-en-Provence)

I have participated to the supervision committee (CSI) of the following phd students:

- Chahrazed Boudjemila (IMT Atlantique)
- Maxime Mere (INSA Rennes)
- Vianney Sicard (INRAE)
- Theo Le Calvar (ESEIO Angers)

## 4 Conference organization and referee service

I have served as co-organizer and reviewer for the following venues.

### 2023

- Monitoring and Evaluation Committee at the Pôle Images & Réseaux (Member)
- International Conference on Model Driven Engineering Languages and Systems (MODELS) (Workshops PC)
- Software and System Modeling (SoSyM) (Journal reviewer)

### 2022

- Monitoring and Evaluation Committee at the Pôle Images & Réseaux (Member)
- Software Technologies: Applications and Foundations (STAF) (General Chair)
- Lowcode Workshop (Lowcode) (Organizer)
- International Workshop on Games and Software Engineering (GAS) (PC)
- International Workshop on Modeling Language Engineering (MLE) (PC)
- Software and System Modeling (SoSyM) (Theme section editor, Journal reviewer)

### 2021

- Monitoring and Evaluation Committee at the Pôle Images & Réseaux (Member)
- International Conference on Model Driven Engineering Languages and Systems (MODELS) (PC, Artifact Evaluation Chair)
- Lowcode Workshop (Lowcode) (Organizer)
- Advances in Production Management Systems (APMS) (Special Session Organizer)
- European Conference on Modelling Foundations and Applications (ECMFA) (PC)
- International Workshop on Model-Driven Engineering of Digital Twins (MODDIT) (PC)
- IEEE Transactions of Software Engineering (TSE) (Journal Reviewer)
- Software and System Modeling (SoSyM) (Journal reviewer)

### 2020

- Monitoring and Evaluation Committee at the Pôle Images & Réseaux (Member)
- Lowcode Workshop (Lowcode) (Organizer)
- International Conference on Model Driven Engineering Languages and Systems (MODELS) (PC)
- European Conference on Modelling Foundations and Applications (ECMFA) (PC)
- Workshop on Software Foundations for Data Interoperability @VLDB (SFDI) (PC)
- Software and System Modeling (SoSyM) (Journal reviewer)
- Interaction Design and Architecture(s) Journal (IXD&A) (Journal reviewer)

### 2019

- Software Technologies: Applications and Foundations (STAF) (Workshop Chair)
- Monitoring and Evaluation Committee at the Pôle Images & Réseaux (Member)
- International Conference on Model Driven Engineering Languages and Systems (MODELS) (PC)
- European Conference on Modelling Foundations and Applications (ECMFA) (PC)
- International Conference on Model Transformation (ICMT) (PC)
- STAF Junior Researcher Community Event (JRC) (PC)
- STAF Research Project Showcase Workshop (PC)
- Software and System Modeling (SoSyM) (Journal reviewer)
- Journal of Systems and Software (JSS) (Journal reviewer)

**2018**

- Monitoring and Evaluation Committee at the Pôle Images & Réseaux (Member)
- MEASURE Industrial Workshop (Keynote speaker)
- European Conference on Modelling Foundations and Applications (ECMFA) (PC, Session chair)
- International Conference on Web Engineering (ICWE) (PC)
- International Conference on Model Transformation (ICMT) (PC, Session chair)
- Transformation Tool Contest (TTC) (PC)
- Short Papers Track at the International Conference on Web Engineering (ICWE) (PC)
- Workshop on Model-Driven Engineering for Design-Runtime Interaction in Complex Systems (MDE@DeRun) (PC)
- Workshop on Models and Evolution (ME) (PC)
- Workshop on Model-Driven Requirements Engineering (MoDRE) (PC)
- Workshop on the Object Constraint Language (OCL) (PC)
- Workshop on Debugging in Model-Driven Engineering (MDEbug) (PC)
- Workshop on Executable Modeling (EXE) (PC)
- Science of Computer Programming (SciCO) (Journal reviewer)
- Software and System Modeling (SoSyM) (Journal reviewer)
- Journal of Systems and Software (JSS) (Journal reviewer)

**2017**

- Monitoring and Evaluation Committee at the Pôle Images & Réseaux (Member)
- Project Showcase at Software Technologies: Applications and Foundations (STAF) (Co-organizer)
- Workshop on Scalable Model-Driven Engineering (BigMDE) (Co-organizer)
- International Conference on Model Transformation (ICMT) (PC)
- International Conference on Web Engineering (ICWE) (PC)
- Tools and Demos at MoDELS Conference (MoDELS) (PC)
- Short Papers Track at the International Conference on Web Engineering (ICWE) (PC)
- Conférence en Ingénierie du Logiciel (CIEL) (PC)
- Transformation Tool Contest (TTC) (PC)
- Workshop on Model-Driven Requirements Engineering (MoDRE) (PC)
- Workshop on the Object Constraint Language (OCL) (PC)
- Workshop on Debugging in Model-Driven Engineering (MDEbug) (PC)
- Workshop on Executable Modeling (EXE) (PC)
- Science of Computer Programming (SciCO) (Journal reviewer)
- Original Software Publications in Science of Computer Programming (Journal reviewer)
- Software and System Modeling (SoSyM) (Journal reviewer)
- Journal of Systems and Software (JSS) (Journal reviewer)

**2016**

- Workshop on Scalable Model-Driven Engineering (BigMDE) (Co-organizer)
- International Conference on Model Transformation (ICMT) (PC)
- Industry Track for Software Language Engineering (ITSLE) (PC)
- Transformation Tool Contest (TTC) (PC)
- Tool Demonstrations at the MoDELS Conference (PC)
- Workshop on Model-Driven Requirements Engineering (MoDRE) (PC)
- Workshop on the Object Constraint Language (OCL) (PC)
- Workshop on Executable Modeling (EXE) (PC)
- Workshop on Models and Evolution (ME) (PC)
- IEEE Transactions on Software Engineering (TSE) (Journal reviewer)
- Software and System Modeling (SoSyM) (Journal reviewer)
- Science of Computer Programming (SciCO) (Journal reviewer)



**2015**

- Workshop on Scalable Model-Driven Engineering (BigMDE) (Co-organizer)
- International Conference on Model Transformation (ICMT) (PC)
- International Conf. on Current Trends in Theory and Practice of Computer Science (SOFSEM) (PC)
- Workshop on Model-Driven Requirements Engineering (MoDRE) (PC)
- Workshop on Executable Modeling (EXE) (PC)
- IEEE Transactions on Software Engineering (TSE) (Journal reviewer)
- Journal of Software: Evolution and Process (Journal reviewer)
- Software and System Modeling (SoSyM) (Journal reviewer)

**2014**

- Workshop on Scalable Model-Driven Engineering (BigMDE) (Co-organizer)
- Education of Language Engineers at SLE (Panelist)
- Model-Driven Engineering at Journées RT3 (Panelist)
- International Conference on Model Transformation (ICMT) (PC)
- International Conf. on Current Trends in Theory and Practice of Computer Science (SOFSEM) (PC)
- Industry Track for Software Language Engineering (ITSLE) (PC)
- Transformation Tool Contest (TTC) (PC)
- Journal of Logic and Algebraic Programming (JLAP) (Journal reviewer)
- NeuroComputing (Journal reviewer)
- Journal of Web Engineering (JWE) (Journal reviewer)
- European Conference on Modelling Foundations and Applications (ECMFA) (Reviewer)

**2013 and before**

- Workshop on Scalable Model-Driven Engineering (BigMDE) 2013 (Co-organizer)
- Workshop on Model transformations with ATL (MtATL) 2010 (Co-organizer)
- Workshop on Model transformations with ATL (MtATL) 2009 (Co-organizer)
- International Conference on Model Transformation (ICMT) 2013 (PC)
- Demos and Posters Track at the International Conference on Web Engineering 2010 (ICWE) 2010 (PC)
- IEEE Transactions on Software Engineering (TSE) (Journal reviewer)
- Science of Computer Programming (SciCO) (Journal reviewer)
- Journal of Logic and Algebraic Programming (JLAP) (Journal reviewer)
- IEEE Software (Journal reviewer)
- Journal of Systems and Software (JSS) (Journal reviewer)
- Software and System Modeling (SoSyM) (Journal reviewer)
- Software: Practice and Experience (Journal reviewer)
- Journal of Web Engineering (JWE) (Journal reviewer)
- Information Processing Letters (IPL) (Journal reviewer)
- International Conference on Model Driven Engineering Languages and Systems (MoDELS) 2010 (Reviewer)
- International Conference on Model Transformation (ICMT) 2010 (Reviewer)
- International Conference on Web Engineering (ICWE) 2010 (Reviewer)
- International Conference on Data Engineering (ICDE) 2009 (Reviewer)
- International Conference on Model Transformation (ICMT) 2009 (Reviewer)
- International Conference on Web Services (ICWS) 2009 (Reviewer)
- International World Wide Web Conference (WWW) 2008 (Reviewer)
- International Conference on Web Engineering (ICWE) 2008 (Reviewer)
- International Conference on Web Services (ICWS) 2008 (Reviewer)
- International Conference on Web Engineering (ICWE) 2008 (Reviewer)
- International Conference on Web Information Systems Engineering (WISE) 2007 (Reviewer)

## 5 Teaching activities

I have been responsible for the following courses and student projects at IMT Atlantique, formerly at Ecole de Mines de Nantes (a student account is required to access most of the links).

### 2022-2023

- Software Engineering and Modeling (FIT-A2)
- Domain-Specific Languages and Model-Driven Engineering (FIL-A3)
- Databases (FING-A1)
- Sensibilization to Research: MDE (FIL-A3)
- Collaborative Development (FING-A1)
- PFE Project (FING-A3)
- PFE Project (FIL-A3)

### 2021-2022

- Software Engineering and Modeling (FIT-A2)
- Domain-Specific Languages and Model-Driven Engineering (FIL-A3)
- Databases (FING-A1)
- Sensibilization to Research: MDE (FIL-A3)
- Collaborative Development (FING-A1)
- PFE Project (FING-A3)
- PFE Project (FIL-A3)

### 2020-2021

- Domain-Specific Languages and Model-Driven Engineering (FING-A3-GSI, FIL-A3)
- Databases (FING-A1)
- Sensibilization to Research: MDE (FIL-A3)
- Collaborative Development (FING-A1)
- PFE Project (FING-A3)
- PFE Project (FIL-A3)

### 2019-2020

- Domain-Specific Languages (FING-A3-GSI, FIL-A3)
- Model-Driven Engineering (FIL-A3)
- Databases (FING-A1)
- Sensibilization to Research: MDE (FIL-A3)
- Collaborative Development (FING-A1)
- PFE Project (FING-A3)
- PFE Project (FIL-A3)

### 2018-2019

- Domain-Specific Languages (FING-A3-GSI, FIL-A3)
- Model-Driven Engineering (FIL-A3)
- Databases (FING-A1)
- Sensibilization to Research: MDE (FIL-A3)
- PRIME Project (FING-A1)
- PFE Project (FING-A3)
- PFE Project (FIL-A3)

**2017-2018**

- Domain-Specific Languages (FING-A3-GSI, FIL-A3)
- Model-Driven Engineering (FIL-A3)
- Databases (FING-A1)
- Sensibilization to Research: MDE (FIL-A3)
- PRIME Project (FING-A1)
- PIST Project (FING-A2)
- PFE Project (FING-A3)
- PFE Project (FIL-A3)

**2016-2017**

- Domain-Specific Languages (FING-A3-GSI, FIL-A3)
- Model-Driven Engineering (FIL-A3)
- Databases (FING-A1)
- Sensibilization to Research: MDE (FIL-A3)
- PRIME Project (FING-A1)
- PIST Project (FING-A2)
- PFE Project (FING-A3)
- PFE Project (FIL-A3)

**2015-2016**

- Domain-Specific Languages (FING-A3-GSI, FIL-A3)
- Model-Driven Engineering (FIL-A3)
- Databases (FING-A2)
- Databases (FING-A1)
- Sensibilization to Research: MDE (FIL-A3)
- PRIME Project (FING-A1)
- PIST Project (FING-A2)
- PFE Project (FING-A3)
- PFE Project (FIL-A3)

**2014-2015**

- Domain-Specific Languages (FING-A3-GSI, FIL-A3)
- Databases (FING-A2)
- Sensibilization to Research: MDE (FIL-A3)
- PRIME Project (FING-A1)
- IPIPIP Project (FING-A1)
- PFE Project (FING) (FING-A3)
- PFE Project (FIL) (FIL-A3)

**2013-2014**

- Domain-Specific Languages (FING-A3-GSI, FIL-A3)
- Databases (FING-A2)
- Sensibilization to Research: MDE (FIL-A3)
- PRIME Project (FING-A1)
- IPIPIP Project (FING-A1)
- PIST Project (FING-A2)
- PFE Project (FING-A3)
- PFE Project (FIL-A3)

**2012-2013**

- Databases (FING-A2)
- PRIME Project (FING-A1)
- IPIPIP Project (FING-A1)

**2011-2012**

- IPIPIP Project (FING-A1)

**2010-2011**

- Higher-order Transformations (MDE Diploma)
- IPIPIP Project (FING-A1)

**2009 and before** I have given lessons in the following courses at Politecnico di Milano.

- Operating Systems Project, Lecturer, 2006-2007, 2008-2009
- Technological culture, Lecturer, 2007-2008
- Software Engineering, Teaching Assistant, 2008-2009
- Web Technologies, Teaching Assistant, 2007-2008, 2008-2009
- Computer Science 3 (Algorithms and Data Structures), Teaching Assistant, 2006-2007, 2007-2008, 2008-2009
- Web Technologies, Teaching Assistant for the post-university master on Service Oriented Architectures, 2006-2007, 2007-2008
- Information Systems, Teaching Assistant for the on-line degree, 2005-2006

## 6 Publication list

### *International Journal Papers*

- [IJ1] Josselin Enet, Erwan Bousse, Massimo Tisi, and Gerson Sunyé. Protocol-Based Interactive Debugging for Domain-Specific Languages. *The Journal of Object Technology*, 22(2), 2023.
- [IJ2] Imad Berrouyne, Mehdi Adda, Jean-Marie Mottu, and Massimo Tisi. A Model-Driven Methodology to Accelerate Software Engineering in the Internet of Things. *IEEE Internet of Things Journal*, 9(20):19757–19772, October 2022.
- [IJ3] Mohammadhadi Dehghani, Shekoufeh Kolahdouz-Rahimi, Massimo Tisi, and Dalila Tamzalit. Facilitating the Migration to the Microservice Architecture via Model-Driven Reverse Engineering and Reinforcement Learning. *Software and Systems Modeling*, 21(3):1115–1133, June 2022.
- [IJ4] Zheng Cheng and Massimo Tisi. Deep specification and proof preservation for the CoqTL transformation language. *Software and Systems Modeling*, May 2022.
- [IJ5] Davide Di Ruscio, Dimitris Kolovos, Juan de Lara, Alfonso Pierantonio, Massimo Tisi, and Manuel Wimmer. Low-code development and model-driven engineering: Two sides of the same coin? *Software and Systems Modeling*, 21(2):437–446, April 2022.
- [IJ6] Georg Hinkel, Antonio Garcia-Dominguez, René Schöne, Artur Boronat, Massimo Tisi, Théo Le Calvar, Frederic Jouault, József Marton, Tamás Nyíri, János Benjamin Antal, Márton Elekes, and Gábor Szárnyas. A cross-technology benchmark for incremental graph queries. *Software and Systems Modeling*, 21(2):755–804, April 2022.
- [IJ7] Antonio Bucchiarone, Federico Ciccozzi, Leen Lambers, Alfonso Pierantonio, Matthias Tichy, Massimo Tisi, Andreas Wortmann, and Vadim Zaytsev. What Is the Future of Modeling? *IEEE Software*, 38(2):119–127, March 2021.
- [IJ8] Zheng Cheng, Massimo Tisi, and Rémi Douence. CoqTL: A Coq DSL for rule-based model transformation. *Software and Systems Modeling*, 19(2):425–439, March 2020.
- [IJ9] Thibault Béziers la Fosse, Jean-Marie Mottu, Massimo Tisi, and Sunyé Sunyé. Source-Code Level Regression Test Selection: The Model-Driven Way. *The Journal of Object Technology*, 18(2):13:1, 2019.
- [IJ10] Zheng Cheng and Massimo Tisi. Slicing ATL model transformations for scalable deductive verification and fault localization. *International Journal on Software Tools for Technology Transfer*, 20(6):645–663, November 2018.
- [IJ11] Amine Benelallam, Abel Gómez, Massimo Tisi, and Jordi Cabot. Distributing relational model transformation on MapReduce. *Journal of Systems and Software*, 142:1–20, August 2018.
- [IJ12] Gwendal Daniel, Gerson Sunyé, Amine Benelallam, Massimo Tisi, Yoann Vernageau, Abel Gómez, and Jordi Cabot. NeoEMF: A multi-database model persistence framework for very large models. *Science of Computer Programming*, 149:9–14, December 2017.
- [IJ13] Salvador Martínez, Massimo Tisi, and Rémi Douence. Reactive model transformation with ATL. *Science of Computer Programming*, 136:1–16, 2017.
- [IJ14] Soichiro Hidaka, Massimo Tisi, Jordi Cabot, and Zhenjiang Hu. Feature-based classification of bidirectional transformation approaches. *Software and Systems Modeling*, 15(3):907–928, 2016.
- [IJ15] Hamza Ed-Douibi, J.L.C. Javier Luis Cánovas Izquierdo, A. Gómez, Massimo Tisi, Jordi Cabot, Abel Gómez, Massimo Tisi, and Jordi Cabot. EMF-REST Generation of RESTful APIs from Models. *Proceedings of the ACM Symposium on Applied Computing*, abs/1504.0:39–43, 2015.

- [IJ16] D.S. Kolovos, L.M. Rose, R.F. Paige, E. Guerra, J.S. Cuadrado, J. De Lara, I. R?th, D. Varr?, G. Suny?, and M. Tisi. MONDO: Scalable Modelling and model management on the cloud. *CEUR Workshop Proceedings*, 1400, 2015.
- [IJ17] J Cabot and M Tisi. The MDE diploma: First international postgraduate specialization in model-driven engineering. *Computer Science Education*, 23, 2011.
- [IJ18] Piero Fraternali and Massimo Tisi. Using traceability links and higher-order transformations for easing regression testing of web applications. *Journal of Web Engineering*, 10(1):1–20, 2011.
- [IJ19] Wieland Schwinger, Werner Retschitzegger, Andrea Schauerhuber, Gerti Kappel, Manuel Wimmer, Birgit Pröll, Cristina Cachero Castro, Sven Casteleyn, Olga De Troyer, Piero Fraternali, Irene Garrigos, Franca Garzotto, Athula Ginige, Geert-Jan Houben, Nora Koch, Nathalie Moreno, Oscar Pastor, Paolo Paolini, Vicente Pelechano Ferragud, Gustavo Rossi, Daniel Schwabe, Massimo Tisi, Antonio Vallecillo, Kees Van Der Sluijs, and Gefei Zhang. A Survey on Web Modeling Approaches for Ubiquitous Web Applications. *International Journal of Web Information Systems*, 4(3):234–305, 2008.

### Book Chapters

- [BC1] M. Tisi and P. Fraternali. Building community-based Web applications with a Model-Driven approach and design patterns. volume Handbook o. IGI Global, 2008.

### Editing

- [ED1] Davide Di Ruscio, Esther Guerra, and Massimo Tisi. Editorial to theme section on modeling in low-code development platforms. *Software and Systems Modeling*, 21(5):1957–1958, October 2022.
- [ED2] Davide Di Ruscio, Dimitris Kolovos, Juan De Lara, Massimo Tisi, and Manuel Wimmer. LowCode 2021: 2nd Workshop on Modeling in Low-Code Development Platforms. In *2021 ACM/IEEE International Conference on Model Driven Engineering Languages and Systems Companion (MODELS-C)*, pages 45–46, October 2021.
- [ED3] Proceedings of the 4rd Workshop on Scalable Model Driven Engineering part of the Software Technologies: Applications and Foundations {(STAF} 2016) federation of conferences, Vienna, Austria, July 8, 2016. volume 1652. CEUR-WS.org, 2016.
- [ED4] Proceedings of the 3rd Workshop on Scalable Model Driven Engineering part of the Software Technologies: Applications and Foundations {(STAF} 2015) federation of conferences, L’Aquila, Italy, July 23, 2015. volume 1406. CEUR-WS.org, 2015.
- [ED5] Proceedings of the 2nd Workshop on Scalability in Model Driven Engineering co-located with the Software Technologies: Applications and Foundations Conference, BigMDE@STAF2014, York, UK, July 24, 2014. volume 1206. CEUR-WS.org, 2014.

### International Conference Papers

- [IC1] Jolan Philippe, Massimo Tisi, Hélène Coullon, and Gerson Sunyé. Executing certified model transformations on Apache Spark. In *Proceedings of the 14th ACM SIGPLAN International Conference on Software Language Engineering*, pages 36–48, Chicago IL USA, October 2021. ACM.
- [IC2] Massimo Tisi, Hugo Bruneliere, Juan de Lara, Davide Di Ruscio, and Dimitris Kolovos. Towards Twin-Driven Engineering: Overview of the State-of-The-Art and Research Directions. In Alexandre Dolgui, Alain Bernard, David Lemoine, Gregor von Cieminski, and David Romero, editors, *Advances in Production Management Systems. Artificial Intelligence for Sustainable and Resilient Production Systems*, volume 630, pages 351–359, Cham, 2021. Springer International Publishing.
- [IC3] Thibault Béziers la Fosse, Massimo Tisi, Jean-Marie Mottu, and Gerson Sunyé. Annotating executable DSLs with energy estimation formulas. In *Proceedings of the 13th ACM SIGPLAN International Conference on Software Language Engineering*, pages 22–38, Virtual USA, November 2020. ACM.

- [IC4] Zheng Cheng, Massimo Tisi, and Joachim Hotonnier. Certifying a rule-based model transformation engine for proof preservation. In *Proceedings of the 23rd ACM/IEEE International Conference on Model Driven Engineering Languages and Systems*, pages 297–307, Virtual Event Canada, October 2020. ACM.
- [IC5] Imad Berrouyne, Mehdi Adda, Jean-Marie Mottu, Jean-Claude Royer, and Massimo Tisi. A Model-Driven Approach to Unravel the Interoperability Problem of the Internet of Things. In Leonard Barolli, Flora Amato, Francesco Moscato, Tomoya Enokido, and Makoto Takizawa, editors, *Advanced Information Networking and Applications*, volume 1151, pages 1162–1175, Cham, 2020. Springer International Publishing.
- [IC6] Imad Berrouyne, Mehdi Adda, Jean-Marie Mottu, Jean-Claude Royer, and Massimo Tisi. CyprIoT: Framework for modelling and controlling network-based IoT applications. In *Proceedings of the 34th ACM/SIGAPP Symposium on Applied Computing*, pages 832–841, Limassol Cyprus, April 2019. ACM.
- [IC7] Zheng Cheng, Jean-Claude Royer, and Massimo Tisi. Removing Problems in Rule-Based Policies. In Gurpreet Dhillon, Fredrik Karlsson, Karin Hedström, and André Zúquete, editors, *ICT Systems Security and Privacy Protection*, volume 562, pages 120–133, Cham, 2019. Springer International Publishing.
- [IC8] Zheng Cheng, Jean-Claude Royer, and Massimo Tisi. Efficiently Characterizing the Undefined Requests of a Rule-Based System. In *IFM 2018 - 14th International Conference on Integrated Formal Methods*, volume 11023 of LNCS, pages 69–88, Maynooth, Ireland, September 2018. Springer.
- [IC9] Massimo Tisi and Zheng Cheng. CoqTL: An internal DSL for model transformation in Coq. In *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, volume 10888 LNCS, pages 142–156, 2018.
- [IC10] Sochiro Hidaka, Frederic Jouault, and Massimo Tisi. On Additivity in Transformation Languages. In *2017 ACM/IEEE 20th International Conference on Model Driven Engineering Languages and Systems (MODELS)*, pages 23–33, Austin, Texas, United States, September 2017. IEEE.
- [IC11] Massimo Tisi and Zheng Cheng. A Deductive Approach for Fault Localization in ATL Model Transformations. In *FASE 2017 - 20th International Conference on Fundamental Approaches to Software Engineering*, Uppsala, Sweden, April 2017.
- [IC12] Zheng Cheng and Massimo Tisi. Incremental Deductive Verification for Relational Model Transformations. In *ICST 2017 - 10th IEEE International Conference on Software Testing, Verification and Validation*, Tokyo, Japan, March 2017.
- [IC13] Amine Benelallam, Massimo Tisi, Jesús Sánchez Cuadrado, Juan de Lara, and Jordi Cabot. Efficient Model Partitioning for Distributed Model Transformations. In *Proceedings of the 2016 International Conference of Software Language Engineering*, October 2016.
- [IC14] Massimo Tisi, Frédéric Jouault, Zied Saidi, and Jérôme Delatour. Enabling OCL and fUML integration by transformation. In *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, volume 9764, pages 156–172, 2016.
- [IC15] Amine Benelallam, Abel Gómez, Massimo Tisi, and Jordi Cabot. Distributed model-to-model transformation with ATL on MapReduce. In *Proceedings of the 2015 ACM SIGPLAN International Conference on Software Language Engineering, SLE 2015, Pittsburgh, PA, USA, October 25-27, 2015*, pages 37–48, 2015.
- [IC16] Valerio Cosentino, Massimo Tisi, and Javier Luis Cánovas Izquierdo. A model-driven approach to generate external DSLs from object-oriented APIs. In Giuseppe F. Italiano, Tiziana Margaria-Steffen, Jaroslav Pokorný, Jean-Jacques Quisquater, and Roger Wattenhofer, editors, *SOFSEM 2015: Theory and Practice of Computer Science*, pages 423–435, Berlin, Heidelberg, 2015. Springer Berlin Heidelberg.
- [IC17] Abel Gómez, Massimo Tisi, Gerson Sunyé, and Jordi Cabot. Map-Based Transparent Persistence for Very Large Models. In *Fundamental Approaches to Software Engineering*, volume 9033, pages 19–34, 2015.
- [IC18] Amine Benelallam, Abel Gómez, Gerson Sunyé, Massimo Tisi, and David Launay. Neo4EMF, A scalable persistence layer for EMF models. In *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, volume 8569 LNCS, pages 230–241, 2014.

- [IC19] Massimo Tisi, Frédéric Jouault, Jérôme Delatour, Zied Saidi, and Hassene Choura. fUML as an Assembly Language for Model Transformation. In *Software Language ...*, pages 171–190, 2014.
- [IC20] Massimo Tisi, Salvador Martínez, and Hassene Choura. Parallel execution of ATL transformation rules. In *Model-Driven Engineering Languages and Systems: 16th International Conference, MODELS 2013, Miami, FL, USA, September 29 – October 4, 2013. Proceedings*, volume 8107 LNCS, pages 656–672, 2013.
- [IC21] J.-M. Mottu, S. Sen, M. Tisi, and J. Cabot. Static analysis of model transformations for effective test generation. In *Proceedings - International Symposium on Software Reliability Engineering, ISSRE*, 2012.
- [IC22] Sagar Sen, Jean Marie Mottu, Massimo Tisi, and Jordi Cabot. Using models of partial knowledge to test model transformations. In *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, volume 7307 LNCS, pages 24–39, 2012.
- [IC23] Massimo Tisi, Salvador Martínez, Frédéric Jouault, and Jordi Cabot. Lazy execution of model-to-model transformations. In *Model Driven Engineering Languages and Systems, 14th International Conference, MOD-ELS 2011*, volume 6981 LNCS, pages 32–46, Wellington, Nouvelle-Zélande, October 2011.
- [IC24] D Wagelaar, M Tisi, J Cabot, and F Jouault. Towards a general composition semantics for rule-based model transformation. In *Model Driven Engineering Languages and Systems: 14th International Conference, MODELS 2011, Wellington, New Zealand, October 16-21, 2011. Proceedings*, 2011.
- [IC25] Marco Brambilla, Stefano Ceri, and Massimo Tisi. Search computing: A model-driven perspective. In *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, volume 6142 LNCS, pages 1–15. Springer, 2010.
- [IC26] Piero Pa Fraternali and Massimo M.b Tisi. Multi-level Tests for Model Driven Web Applications. In *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, volume 6189 {LNCS, pages 158–172, 2010.
- [IC27] Frédéric Jouault and Massimo Tisi. Towards incremental execution of ATL transformations. In *Theory and Practice of Model Transformations*, pages 123–137. Springer, 2010.
- [IC28] Massimo Tisi, Jordi Cabot, and Frédéric Jouault. Improving higher-order transformations support in ATL. In *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, volume 6142 LNCS, pages 215–229. Springer, 2010.
- [IC29] Marco Brambilla, Piero Fraternali, and Massimo Tisi. A transformation framework to bridge domain specific languages to MDA. In *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, volume 5421, pages 167–180. Lecture Notes In Computer Science, Springer, 2009.
- [IC30] Piero Fraternali and Massimo Tisi. A higher order generative framework for weaving traceability links into a code generator for web application testing. In *International Conference on Web Engineering*, volume 5648 LNCS, pages 340–354, 2009.
- [IC31] Massimo Tisi, F. Jouault, P. Fraternali, S. Ceri, and J. Bézivin. On the Use of Higher-Order Model Transformations. In *Proceedings of the Fifth European Conference on Model-Driven Architecture Foundations and Applications (ECMDA)*, pages 18–33. Springer, 2009.
- [IC32] Piero Fraternali and Massimo Tisi. Identifying Cultural Markers for Web Application Design Targeted to a Multi-cultural Audience. In *Eighth International Conference on Web Engineering*, pages 231–239. Ieee, July 2008.
- [IC33] Marco Brambilla, Piero Fraternali, Matteo Silva, and Massimo Tisi. ICT Education as a Key Emancipation Factor for Young People in Marginal Quarters of Developing Countries. In *Marginalized Young People: Inclusion Through ICT, Workshop at IDC2008*, pages 1–4, 2008.



- [IC34] R. Acerbis, A. Bongio, M. Brambilla, Massimo Tisi, S. Ceri, and E. Tosetti. Developing eBusiness Solutions with a Model Driven Approach: The Case of Acer EMEA. In *Proceedings of ICWE2007*, volume 4607, page 539. LNCS, 2007.
- [IC35] Piero Fraternali, Stefano Ceri, Massimo Tisi, and Emanuele Tosetti. Developing eBusiness Solutions with a Model Driven Approach. In *Proceedings of IMP2006*, 2006.
- [IC36] Piero Fraternali, Massimo Tisi, and Aldo Bongio. Automating Function Point Analysis with Model Driven Development. In *Proceedings of the 2006 Conference of the Center for Advanced Studies on Collaborative Research - CASCON '06*, page 18, New York, New York, USA, 2006. ACM Press.
- [IC37] L. Baresi, P. Fraternali, M. Tisi, and S. Morasca. Towards model-driven testing of a Web application generator. In *Web Engineering, Proceedings*, volume 3579, pages 75–86. Springer, 2005.

## International Workshop Papers

- [IW1] Zahra Rajaei, Shekoufeh Kolahdouz-Rahimi, Massimo Tisi, and Frédéric Jouault. A DSL for encoding models for graph-learning processes. In *20th International Workshop on OCL and Textual Modeling*, Bergen, Norway, June 2021.
- [IW2] Jolan Philippe, Hélène Coullon, Massimo Tisi, and Gerson Sunyé. Towards Transparent Combination of Model Management Execution Strategies for Low-Code Development Platforms. In *23rd ACM/IEEE International Conference on Model Driven Engineering Languages and Systems: Companion Proceedings*, Montreal (Virtually), Canada, October 2020. ACM.
- [IW3] Thibault Beziers la Fosse, Massimo Tisi, Erwan Bousse, Jean-Marie Mottu, and Gerson Sunye. Towards Platform Specific Energy Estimation for Executable Domain-Specific Modeling Languages. In *2019 ACM/IEEE 22nd International Conference on Model Driven Engineering Languages and Systems Companion (MODELS-C)*, pages 314–317, Munich, Germany, September 2019. IEEE.
- [IW4] Massimo Tisi, Jean-Marie Mottu, Dimitrios S. Kolovos, Juan De Lara, Esther M Guerra, Davide Di Ruscio, Alfonso Pierantonio, and Manuel Wimmer. Lowcomote: Training the next generation of experts in scalable low-code engineering platforms. In *STAF 2019 Co-Located Events Joint Proceedings: 1st Junior Researcher Community Event, 2nd International Workshop on Model-Driven Engineering for Design-Runtime Interaction in Complex Systems, and 1st Research Project Showcase Workshop Co-Located with Software Technologies: Applications and Foundations (STAF 2019)*, CEUR Workshop Proceedings (CEUR-WS.Org), Eindhoven, Netherlands, July 2019.
- [IW5] Thibault Béziers la Fosse, Jean-Marie Mottu, Massimo Tisi, and Gerson Sunyé. Characterizing a source code model with energy measurements. In *Workshop on Measurement and Metrics for Green and Sustainable Software Systems (MeGSuS)*, Oulu, Finland, October 2018.
- [IW6] Valentin Besnard, Frédéric Jouault, Théo Le Calvar, and Massimo Tisi. The TTC 2018 social media case, by ATL and AOF. In *11th Transformation Tool Contest, Co-Located with the 2018 Software Technologies: Applications and Foundations (STAF 2018)*, Toulouse, France, June 2018.
- [IW7] Imad Berrouyne, Mehdi Adda, Jean-Marie Mottu, Jean-Claude Royer, and Massimo Tisi. Towards Model-Based Communication Control for the Internet of Things. In Manuel Mazzara, Iulian Ober, and Gwen Salaün, editors, *Software Technologies: Applications and Foundations*, volume 11176, pages 644–655, Cham, 2018. Springer International Publishing.
- [IW8] Thibault Béziers la Fosse, Massimo Tisi, and Jean-Marie Mottu. Injecting Execution Traces into a Model-Driven Framework for Program Analysis. In Martina Seidl and Steffen Zschaler, editors, *Software Technologies: Applications and Foundations*, volume 10748, pages 3–13. Springer International Publishing, Cham, 2018.
- [IW9] Zheng Cheng and Massimo Tisi. Towards Incremental Deductive Verification for ATL. In *Verification of Model Transformation*, volume PAME-VOLT, pages 38–47, Saint-Malo, France, October 2016.

- [IW10] Amine Benelallam, Abel Gómez, and Massimo Tisi. ATL-MR : Model Transformation on MapReduce. In *SEPS 2015 - Proceedings of the 2nd International Workshop on Software Engineering for Parallel Systems*, pages 45–49, 2015.
- [IW11] Abel Gómez, Amine Benelallam, and Massimo Tisi. Decentralized model persistence for distributed computing. In *CEUR Workshop Proceedings*, volume 1406, pages 42–51, 2015.
- [IW12] Massimo Tisi, Rémi Douence, and Dennis Wagelaar. Lazy evaluation for OCL. In *CEUR Workshop Proceedings*, volume 1512, pages 46–61, 2015.
- [IW13] Frédéric Jouault, Massimo Tisi, and Jérôme Delatour. fUML as an assembly language for MDA. In *Proceedings of the 6th International Workshop on Modeling in Software Engineering - MiSE 2014*, pages 61–64, New York, New York, USA, June 2014. ACM Press.
- [IW14] Amine Benelallam, Massimo Tisi, István Ráth, Benedek Izsó, and Dimitrios S. Kolovos. Towards an open set of real-world benchmarks for model queries and transformations. In *CEUR Workshop Proceedings*, volume 1206, pages 14–22, 2014.
- [IW15] Gwendal Daniel, Gerson Sunyé, Amine Benelallam, and Massimo Tisi. Improving memory efficiency for processing large-scale models. In *CEUR Workshop Proceedings*, volume 1206, pages 31–39, 2014.
- [IW16] Valerio Cosentino, Massimo Tisi, and Fabian Büttner. Analyzing Flowgraphs with ATL. In *Electronic Proceedings in Theoretical Computer Science*, volume 135, pages 32–36, 2013.
- [IW17] Dimitrios S. Kolovos, Massimo Tisi, Jordi Cabot, Louis M. Rose, Nicholas Matragkas, Richard E Paige, Esther Guerra, Jesús Sánchez Cuadrado, Juan De Lara, István Ráth, and Dániel Varró. A research roadmap towards achieving scalability in model driven engineering. In *Proceedings of the Workshop on Scalability in Model Driven Engineering - BigMDE '13*, pages 1–10, 2013.
- [IW18] Cauê Clasen, Marcos Didonet Del Fabro, Massimo Tisi, MD Del Fabro, and Massimo Tisi. Transforming Very Large Models in the Cloud: A Research Roadmap. In *First International Workshop on Model-Driven Engineering on and for the Cloud*, 2012.
- [IW19] Hugo Brunelière, Jordi Cabot, Frédéric Jouault, Massimo Tisi, and Jean Bézivin. Industrialization of Research Tools: The ATL Case. In *Third International Workshop on Academic Software Development Tools and Techniques - WASDeTT-3 (Co-Located with the 25th IEEE/ACM International Conference on Automated Software Engineering - ASE'2010)*, pages 1–14, 2010.
- [IW20] Piero Fraternali and Massimo Tisi. Mutation Analysis for Model Transformations in ATL. In *Model Transformation with ATL Workshop (MtATL2009)*, page 145, 2009.
- [IW21] A Bozzon, S Comai, P Fraternali, and M Tisi. Current research on the design of Web 2.0 applications based on model-driven approaches. In *{CEUR} Workshop Proceedings*, volume 445, pages 19–25, 2008.
- [IW22] M. Brambilla, P. Fraternali, and Massimo Tisi. A Metamodel Transformation Framework for the Migration of WebML Models to MDA. In CEUR-WS. Org, editor, *MDWE, CEUR Workshop Proceedings (Best Paper Award)*, pages 91–105, 2008.

## Technical Reports

- [TR1] Jean-Claude Royer and Massimo Tisi. Automatically Summarizing all the Problems of a Rule-Based System. Research Report, IMT Atlantique, January 2020.
- [TR2] Massimo Tisi, Salvador Martínez, Frédéric Jouault, and Jordi Cabot. Refining Models with Rule-based Model Transformations. Rapport de recherche, INRIA, March 2011.