

# Curriculum Vitae et Studiorum

Dr. Massimiliano de Leoni

July 24, 2019

## 1 Personal Data

- Born in Naples (Italy) on 18 March 1980. Italian Citizenship. Marital status: married. Military status: exempt.
- Resident in Padua (Italy), Via Gaspara Stampa, 3. Email: [deleoni@math.unipd.it](mailto:deleoni@math.unipd.it).
- Spoken Languages: Italian (Native), English (C1+), Dutch (B1).<sup>1</sup>

## 2 Education and Qualifications

**December 2017** Italian Scientific Habilitations to the rank of Associate Professor in Computer Science and in Computer Engineering [Abitazione Scientifica Nazionale MIUR - Settori Concorsuali: 01/B1 (Informatica) e 09/H1 (Sistemi di elaborazione delle informazioni)].

**October 2014-July 2017** University Teaching Qualification (in Dutch, BKO - Basiskwalificatie Onderwijs) at Eindhoven University of Technology

- The University Teaching Qualification is a proof of didactic competence for lecturers in academic education.
- Lecturers with this certificate are considered to be qualified for academic teaching.
- During the process to acquire the qualification, Dr. de Leoni attended the following courses to be updated about the last developments in the area of didactics methods to teach in higher educations:
  - Teaching and Learning in Higher Education
  - Designing Courses and Projects
  - Assessment
  - Teaching Skills
  - Evaluation

**2005-2009** Ph.D Degree in in *Computer Engineering*, Sapienza University of Rome, Italy.

- Thesis Title: *Adaptive Process Management in Highly Dynamic and Pervasive Scenarios* [T3]
- Internal Thesis committee: Prof. Tiziana Catarci (supervisor), Prof. Giuseppe De Giacomo, Prof. Massimo Mecella.
- External reviewers: Dr. Alfredo Gabaldon (New University of Lisbon, Portugal) and Prof. Jan Mendling (Wirtschaftsuniversität Wien, Austria).
- Defence Date: 30 September 2009

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<sup>1</sup>The levels are officially assessed by a CEFR recognised language centre (Dutch) or by an official assessor of Eindhoven University of Technology (English).

**2002-2005** Master Degree in *Computer Engineering*, Sapienza University of Rome, Italy with marks 110/110 cum laude.

□ Thesis Title: *Design and Implementation of Techniques for Workflow Adaptation in Mobile Ad-hoc Networks* [Progettazione ed Implementazione di Tecniche per la Gestione Adattiva dei Workflow su Reti Mobili Ad-hoc], [T2]

□ Supervisor: Prof. Massimo Mecella

□ Defence Date: 18 July 2005

**1999-2002** Bachelor Degree in *Computer Engineering* at Sapienza University of Rome, Italy with marks 110/110 cum laude.

□ Thesis Title: *The structure of the Web Graph* [La Struttura del Grafo del Web], [T1]

□ Supervisor: Dr. Luca Becchetti

□ Defence Date: 18 December 2002

## 3 Activities Concerning Scientific Research

### 3.1 Current and Past Positions

**From January 2019.** Assistant Professor [Ricercatore a Tempo Determinato di Tipo B], Department of Mathematics, University of Padua.

**September 2014 - December 2018.** Assistant Professor in Computer Science, Faculty of Mathematics and Computer Science, Eindhoven University of Technology. Member of the Data Science Center Eindhoven (DSC/e).<sup>2</sup>

**June 2013 - August 2014.** Postdoctoral researcher at the Department of Mathematics, University of Padua, Italy [Assegno di Ricerca di cui all'art. 22 della Legge 240/2010]. Responsible Person: Prof. Alessandro Sperduti (University of Padua).

**June 2010 - May 2013.** Postdoctoral researcher in the Architecture of Information Systems (AIS) group, Faculty of Mathematics and Computer Science, Eindhoven University of Technology. Group Leader: Prof. Wil M. P. van der Aalst.

**October 2009 - May 2010.** Postdoctoral researcher in the Department of Computer, Control, and Management Engineering [Dipartimento di Ingegneria informatica automatica e gestionale “Antonio Ruberti”], Sapienza University of Rome, Italy. Group Leader: Prof. Tiziana Catarci.

**November 2005 - September 2009.** Ph.D. candidate in Computer Engineering, Department of Computer, Control, and Management Engineering [Dipartimento di Ingegneria informatica automatica e gestionale “Antonio Ruberti”], Sapienza University of Rome, Italy.

**September - October 2005.** Collaboration with Department of Computer, Control, and Management Engineering [Dipartimento di Ingegneria informatica automatica e gestionale “Antonio Ruberti”], Sapienza University of Rome, Italy.

### 3.2 Research Interests

The research of dr. de Leoni is set around Information Systems and Business Process Management, on the hand, and Data Science, on the other hand. Traditionally, the field that crosses Business Process Management and Data Science is called *Process Mining*. The techniques in this field provide new means to discover, monitor and improve processes in a variety of application domains. For instance, along

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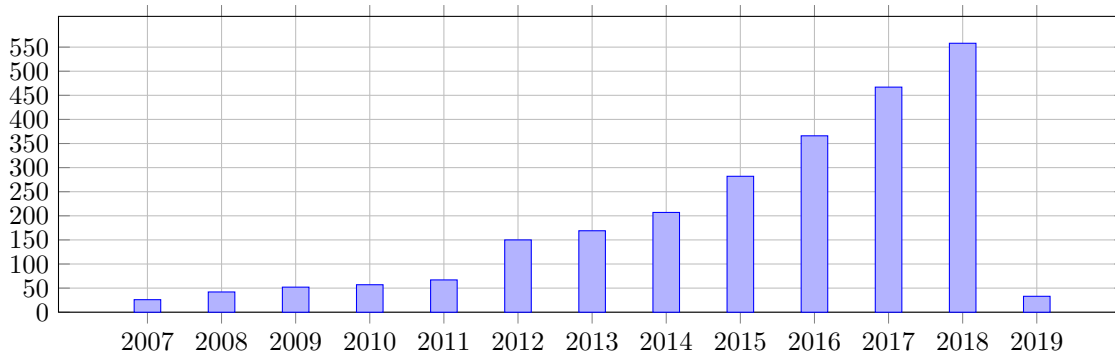
<sup>2</sup><https://www.tue.nl/en/university/departments/mathematics-and-computer-science/research/research-institutes/data-science-center-eindhoven-dsce/>

with industrial partners (e.g., Celonis, Telefonica Spain, Suncorp, KPN, ABN AMRO, UWV), dr. de Leoni applied Process Mining in, e.g., banks, financial institutions, software houses, logistic companies. Within the field of Process Mining, the research of dr. de Leoni distinguishes from the other Process-Mining research in the fact that the full payload associated with events is used. Typically, most of the past research in Process Mining only focusses on the activity names, thereby only using one specific characteristic associable with events. This was mostly due to the fact that the amount of information associated with events used to be scarce and, hence, one could not expect to have a much richer payload.

However, in the new era of Big Data, the situation is quickly changing and event data are much richer in terms of information attached to single events. The large availability of process data is more than just a matter of volume and all the related challenges. Compared with traditional Business Intelligence, it is an opportunity to gain actionable insights to aid organisations to make better business decisions and become more effective and competitive.

The use of the entire payload allows dr. de Leoni to conduct research on multi-perspective process mining, in which models are richer and contain information related to time, data and resources. In addition, it enables my research work to provide more accurate predictions and recommendations for process-aware decision support systems.

According to Google Scholar, to this date, the research work of dr. de Leoni has been cited around 2510 times, leading to an H index equal to 27. Below is the distribution of his citations over the years:



The significant growth of the number of citations over the years illustrates that the research of dr. de Leoni is increasingly being acknowledged and appreciated in his fields of expertise. This is further confirmed in the sections below, analyzing the growing list of conference awards, programme-committee memberships and leaderships, the participation to Ph.D. assessments, and the invited visits at different universities world-wide mostly funded by the hosting universities. The sections from 3.2.1 till Section 3.2.5 provide further details on the major directions of research of dr. de Leoni.

### 3.2.1 Planner-based Conformance Checking

A typical problem of process mining is to perform a check of the conformance of process executions against company rules, (inter)national regulations, norms, etc. For instance, conformance checking is relevant during the procedures of auditing or, also, when a company is applied for ISO certifications. Dr. de Leoni is doing research to tackle this problem. As a matter of fact, the problem is challenging because companies are interested to not only being informed about which executions are not conforming but to also obtaining precise diagnostics of the deviations. The latter is an optimization problem because, due to the nature of processes, they are different potential reasons to explain the non-conformance. One wants to obtain the most reasonable explanation, which is assumed to be the simplest, in accordance with the principle of the Ocrum Razor. There were already several techniques that are ad-hoc implementations of existing general-purpose techniques to compute optimal plans. Unfortunately, in the era of big data, these ad-hoc implementations do not scale sufficiently compared with robust, well-established planning systems. Based on this consideration, dr. de Leoni is currently researching on

how instances of these ad-hoc problems can be translated into planning problems, which can be solved through off-the-shelf planners. Paper [J14] shows how instances of the conformance checking problem can be represented as classical planning problems in PDDL and reports on an operationalization based on the Fastdownard planner and a set of experiments with different planning techniques available in the planner. If conformance checking problems are converted into planning problems, one can seamlessly update to the recent versions of the best performing automated planners, with evident advantages in term of versatility and customization. In [C32] the work has been extended to consider events logs that consist of traces where events may be partially ordered.

### 3.2.2 Multi-perspective Process Mining

As indicated, the scarce amount of information stored in event logs only allowed in the past for techniques that focused on the control-flow, i.e. the activities allowed for performance and the ordering with which they can occur. These techniques do not take into account other perspectives, such as the perspectives on resource, time and data. Therefore, they ignore other important factors, namely the resource constraints (who is allowed to execute what), the data aspects (in which conditions certain activities and entire branches are allowed or disallowed) and the time constraints (e.g., deadlines or maximum/minimum duration of activities). Leaving these aspects aside make the analysis focus on an underspecified (and underfitting) process model. For instance, it would not be possible that, e.g., the loan applications for gold customers follow a partly different procedure than silver customers or the assessment needs to be repeated if the customer has certain risk levels. The research of dr. de Leoni along this direction is to discover multi-perspective process models (i.e., including data-driven decisions and, also, time and resource constraints) [C28]. When multi-perspective process models are provided, dr. de Leoni has developed techniques to check the conformance of these models against the event logs to pinpoint where deviations occur, how severe they are and which are their root causes [C18, J11]. The aim of multi-perspective process mining is to discover models that are sound: for any non-final process' state that can be reached from the initial process' state, there should be a way to reach a final process' state without being blocked in a deadlock. Indeed, if the process is blocked in a non-final state, this is equivalent to say that, e.g., the application for a loan cannot be completed to reach an acceptance or a rejection, thus negatively affecting the customer satisfaction. Dr. de Leoni has recently worked to develop a technique to check the soundness of multi-perspective process models and to identify the expressiveness boundaries beyond which the problem becomes undecidable [C34]. Soundness is also a requirement for conformance checking: if the model is not sound, it is not possible to pinpoint the deviations or those returned might not be meaningful.

### 3.2.3 Visual Analytics and Process Mining

Dealing with large event logs and big data is not only an opportunity; it also represents a challenge. When dealing with extremely large amount of data, process analysts need to be guided where to focus their attention so as to properly tune the process-mining techniques. The guidance can only be provided if process mining techniques are combined with human judgment and creativity to find interesting and relevant patterns. Dr. de Leoni contributed to the proposal of a framework that integrates techniques for Visual Analytics and for process mining to dynamically visualize event data on intuitive models [J12]. This has subsequently continued through the Professional-Doctorate thesis of Neha Gupta (cf. Section 4.3), who worked with the UWV agency in the Netherlands to extend the framework and the tool to make it closer to the needs of business stakeholders, by leveraging on methodologies mediated from human-computer interactions.

### 3.2.4 Process Cubes and Analytical Workflows

Big Data is heavily connected with variability. This applies to also the domain of process mining: event logs record heterogeneity of the behavior recorded- If there are multiple classes of cases exhibiting markedly different behaviors, it is hard to discover a single process model that accurately and precisely summarizes the observed behavior. Also, if one focuses on performance questions (such as are applications dealt with within the expected/legal deadlines?) and/or on conformance aspects (is

the process generally carried on as it was expected and without violating norms and protocols?), it is impossible and/or worthless from a business viewpoint to try to answer these questions for all the executions independently of the exhibited behavior. For instance, the executions for certain class of customers tend to be executed within the deadlines without violating the norms, whereas for other classes this is not the case. This research starts from the belief that different process variations should be analyzed separately and compared to each other from different perspectives to obtain meaningful insights about the different behavior embedded in the process. To do so, the event data are projected in a process cube (similar to the OLAP cubes) where the event logs can be diced, sliced, etc. to deal with the heterogeneity. Each cell becomes a sub event log, which can be used, for instance, to discover a different process model. Also, the process model of a cell can be compared with the event log of a different cell via conformance checking to pinpoint the differences between cells. In this respect, dr. de Leoni contributes to the framework to compare different cells of a process cube to pinpoint statistical differences in temporal performances, frequencies of occurrences of certain process' paths and other KPI indicators [C25, J15]. If the number of process-cube cells is large and the procedure needs to be repeated for each cell, it is tedious and error prone to manually perform the analysis for each cell. Dr. de Leoni contributed to defining and implementing a framework for analytical workflow systems [J13] based on RapidMiner: a designer defines a complex workflow, which is automatically repeated for each cell of the process cube. Dr. de Leoni also worked on using process cubes and analytical workflows for educational mining [C24]. In particular, by combining process cubes and analytical workflows with process mining, we report that it is possible to generate 1000 reports, one for as many courses, that correlate the final grade with their studying behavior.

### 3.2.5 Process Enhancement

While the lion's share of attention of process mining has often been about gaining knowledge about the processes being executed within organizations, it is the ultimate goal to improve how processes are being executed. This problem can be regarded as business process re-engineering, namely to improve the policies that are used to drive the new executions of processes, or to provide support as run-time about the executions that are already being carried on. Dr. de Leoni is leading a project on this topic, by co-supervising Marcus Dees, a Ph.D. student at Eindhoven University of Technology, where techniques for process enhancement are developed for the UWV agency in the Netherlands for the provision of unemployment benefits and for job reintegration (cf. Sections 3.6 and 4.3). The first results about process enhancement are reported in [C31], which leverages on a previous framework reported in [C20, J10]. The starting point is a process model that encodes policies and regulations to be improved and an event log that records the actual executions. The executions that deviate from the provided models are correlated with a customizable KPI to find those that lead to better KPIs; the model is ultimately updated to incorporate the behavior that were not originally allowed but that yield good KPI values. For what concerns run-time support, we are currently developing a recommender system, which is intended as a special class of Process-aware Information System that analyzes the instances of process that are carried on via the system and uses different machine-learning techniques in order to (1) predict the instances that have higher risk to fail or to produce unsatisfactory results and (2) to try to put forward remedies to recover those instances. Within this research, the focus is on describing the risk, on defining techniques that can predict the outcome of a process instance and that can suggest what to do next to turn the negative outcome into a positive. This research builds on previous results of other research of dr. de Leoni, reported in [C17, J8].

## 3.3 Invited Talks/Panels

**19 April 2018.** Invited Talk for the DIBRIS Department [Dipartimento di Informatica, Bioingegneria, Robotica e Ingegneria dei Sistemi], University of Genoa [Università degli Studi di Genova], Italy. Title: "When Data Science meets Process Intelligence: Process Mining".

**24 November 2017.** Invited to give a keynote speech at the KPN Data-Science Summit, Rotterdam, the Netherlands. Title: "Process Mining: Big Data Meets Process Science".

- 14 September 2017.** Invited to give a tutorial at the 15th International Conference on Business Process Management (BPM 2017), Barcelona, Spain. The tutorial is given together with Dr. Boudewijn van Dongen (Eindhoven University of Technology) and Prof. Jorge Munoz-Gama (Pontificia Universidad de Chile). Title: “Conformance Checking: What does your process do when you are not watching?”.
- 11 September 2017.** Member of the panel “BP meet IoT: new wine in old bottles?”, 1st International Workshop on BP-Meet-IoT, co-located with the 15th International Conference on Business Process Management (BPM 2017), Barcelona, Spain.
- 22 April 2016.** Invited Talk at session “Big Data and Logistics”, Big Data Small World, Amsterdam, The Netherlands. Title: “When Logistics Meet Process Mining: Lessons Learnt from a Case Study and Open Challenges”.
- 10 December 2015.** Invited Talk for the Department of Informatics, Automatics and Management Research, University of Rome – SAPIENZA, Rome, Italy. Title: “Data- and Resource-aware Conformance Checking”
- 30 April 2014.** Invited Talk for the Institute for Information Business, Vienna University of Economics and Business, Austria. Title: “Multi-perspective Process Mining”.
- 7 April 2014.** Invited Talk for the Department of Electrical Engineering and Information Technology, University of Naples, Italy. Title: “Mine your own business”.
- 29 November 2013.** Invited Talk for Dagstuhl Seminar 13481 – *Unleashing Operational Process Mining*, Wadern, Germany. Title: “Turning Event Logs into Process Movies”.
- 28 November 2013.** Leader of panel “Conformance Checking for Compliance, Security and Auditing” for Dagstuhl Seminar 13481 – *Unleashing Operational Process Mining*, Wadern, Germany.
- 16 October 2013.** Invited Talk for the BPM Discipline, Queensland University of Technology, Brisbane, Australia. Title: “Multi-perspective Process Mining”.
- 29 November 2012.** Invited Talk for the BPM Discipline, Queensland University of Technology, Brisbane, Australia. Title: “Facilitating Process Analysis through Visualising Process History”.
- 13 December 2010.** Keynote Speaker for the *International Workshop on Emergency Management through Service Oriented Architectures* (EMSOA 2010), Ghent, Belgium. Title: “Process-aware Information Systems for Emergency Management”.
- 27 March 2008.** Invited Talk for the Business Process Discipline, Queensland University of Technology, Brisbane, Australia. Title: “Visual Support for Work Assignment in Process-aware Information”

### 3.4 Academic Visits and Active Collaborations

- 18 June-18 July 2018.** Visiting Professor, Department of Computer, Management and Automaton Engineering [Dipartimento di Ingegneria Informatica, Gestionale e dell’Automazione], Technical University of Marche [Università Politecnica delle Marche], Italy. Funds from the hosting university. Local contact: Prof. Claudia Diamantini.
- 18-20 April 2018.** DIBRIS Department [Dipartimento di Informatica, Bioingegneria, Robotica e Ingegneria dei Sistemi], University of Genoa [Università degli Studi di Genova], Italy. Funds from the hosting university. Local contact: Prof. Giovanna Guerrini.
- 15 January-26 January 2018.** KRDB Research Centre for Knowledge and Data, Faculty of Computer Science, Free University of Bozen, Italy, financially supported through the CORE project, Eindhoven University of Technology. Local contact: Prof. Marco Montali.

- 28 August-1 September 2017.** KRDB Research Centre for Knowledge and Data, Faculty of Computer Science, Free University of Bozen, Italy, financially supported by the hosting university. Local contact: Prof. Marco Montali.
- 25 November-4 December 2015.** DIAG Department [Dipartimento di Ingegneria Informatica, Automatica and Gestionale], SAPIENZA University of Rome [SAPIENZA - Università di Roma], Italy, financially supported through the CORE project, Eindhoven University of Technology. Local Contact: Prof. Massimo Mecella.
- 28 April-3 May 2014.** Institute for Information Business, Vienna University of Economics and Business, Austria, financially supported by the hosting university. Local Contact: Prof. Jan Mendling.
- 7-11 April 2014.** Department of Electrical Engineering and Information Technology, University of Naples [Università di Napoli - Federico II], Italy, financially supported through Erasmus Exchange Program for Staff. Local Contact: Prof. Alessandro Pepino.
- 7-25 October 2013.** BPM Discipline, Queensland University of Technology, Brisbane, Australia, financially supported by the hosting university. Local Contacts: Profs. Arthur ter Hofstede.
- 12-30 November 2012.** BPM Discipline, Queensland University of Technology, Brisbane, Australia, financially supported by the hosting university. Local Contact: Prof. Arthur ter Hofstede.
- 5-15 December 2008.** Intelligent Agents Group, RMIT University, Melbourne, Australia, financially supported by Sapienza University of Rome, Italy. Local Contact: Dr. Sebastian Sardina.
- September 2007-April 2008.** Business Process Management group, Queensland University of Technology, Brisbane (Australia), financially supported by Sapienza University of Rome, Italy. Local Contact: Prof. Arthur ter Hofstede.

Dr. de Leoni has several collaborations, of which the following are the most common:

- Aachen University, Germany (Prof. van der Aalst);
- Free University of Bolzano, Italy (Prof. Montali);
- Hasselt University, Belgium (Prof. Depaire);
- Polytechnical University of Catalonia, Spain (Prof. Carmona);
- Queensland University of Technology, Australia (Prof. ter Hofstede);
- SAPIENZA - University of Rome, Italy (Profs. De Giacomo e Mecella);
- Tartu University, Estonia (Prof. Dumas);
- Vrije Universiteit Amsterdam, The Netherlands (Prof. Reijers);
- Università Politecnica della Marche, Italy (Prof. Diamantini);
- University of Melbourne, Australia (Prof. La Rosa).

### 3.5 Awards and Scholarship

- Visiting Professorship, Department of Computer and Management and Automation Engineering [Dipartimento di Ingegneria Informatica, Gestionale e dell'Automazione], Technical University of Marche [Università Politecnica delle Marche], Italy, 2018
- Award for Excellent Course Evaluation Academic Year 2016/2017 for the course Business Information System (see Section 4.1.1), Eindhoven University of Technology.

- Best student-paper award for work [C27] at *Business Process Management Conference (BPM 2016)* with F. Mannhardt and H. A. Reijers, W. M. P. van der Aalst and P.J. Toussaint.
- Best demo-paper award for work [W22] at *Business Process Management Conference (BPM 2015)* with F. Mannhardt and H. A. Reijers.
- Best-paper award for work [C20] at *Business Process Management Conference (BPM 2014)* with W. M. P. van der Aalst and M. Dees.
- Best-paper award for work [C11] at *Business Information Systems Conference (BIS 2011)* with D. Fahland and B. F. van Dongen and W. M. P. van der Aalst.
- Best-paper award for work [W1] at the *International Workshops on Enabling Technologies: Infrastructures for Collaborative Enterprises (WETICE 2006)* with F. De Rosa and M. Mecella.
- Recipient of a Ph.D. scholarship offered by Sapienza University of Rome, Italy for 36 months from November 2005 to October 2008.

### 3.6 Participation to Research Projects

**CORE - Consistently Optimised REsiliEnt** (1 May 2014 - 30 June 2018), EU IP project.

- Responsible for the unit of Eindhoven University of Technology in regards to the project management. The project is extremely large and comprises 70 parts; as result, the management of the project even as a single partner is very complex because it requires several interactions with around a dozen of partners, both for the financial aspects and for the scientific contents
- Collaboration on the scientific topics of the project, mainly focusing on prediction techniques and decision support systems in the context of logistic and supply-chain processes (see Section 3.2).

**PROMPT - Process Mining for Business Process Improvement** (1 January 2012 - 31 December 2014), Eurostars-Eureka Project, project coordinator Prof. Alessandro Sperduti (University of Padua).

- Collaboration on the scientific topics of the project, mainly focusing on multi-perspective process mining as well as process- and context-aware operational support (see Section 3.2).

**ACSI - Artifact-Centric Service Interoperation** (1 June 2010 - 31 May 2013), EU STREP project, project coordinator Dr. Lior Limonad (IBM).

- Collaboration on the scientific topics of the project, mainly focusing on Mining of Artifact-centric Business Processes and Multi-perspective Process mining (see Section 3.2 and also [C11, C12]).
- Contributor to several project deliverables.

**WORKPAD** (1 September 2006 - 30 August 2009), EU STREP project, project coordinator Prof. Tiziana Catarci (Sapienza University of Rome, Italy).

- Collaboration on the scientific topics of the project, mainly focusing on process management for adaptive and pervasive scenarios, such as automatic adaptation, mobile process management and mobile network infrastructure (see, e.g., [J1]).
- Leader of work package WP2 and Editor of the project deliverables related to the work package

**eG4M - eGovernment for Mediterranean Countries** (1 November 2005 - 30 April 2009), Italian Project (FIRB 2003), project coordinator Prof. Carlo Batini.



- Collaboration on the scientific topics of the project, mainly focusing on providing and customising service-oriented architectures and systems for developing countries (in particular, Morocco and Tunisia).

**MAIS - Multichannel Adaptive Informative Systems** (5 November 2002 - 4 July 2006), Italian Project (FIRB 2001), project coordinator Prof. Barbara Pernici.

- The work of Dr. de Leoni was focused on the same topics as in the WORKPAD project, i.e. process management for adaptive and pervasive scenarios.

### 3.7 Program Chairship, Programme Committee Membership, Scientific Paper Reviewing

- Co-chair of the Demonstration Track of the *16th International Conference on Business Process Management (BPM 2018)*, 9-14 September 2018, Sydney, Australia.
- Co-organizer of the:
  - Second Process Discovery Contest, held in conjunction with the 15th International Conference on Business Process Management (BPM 2017), 11 September 2017;<sup>3</sup>
  - First Process Discovery Contest, held in conjunction with the 14th International Conference on Business Process Management (BPM 2016), 18 September 2016.<sup>4</sup>
- Co-chair of the special session on Process Mining at the *IEEE World Congress on Computational Intelligence (IEEE WCCI 2014)*, Beijing, China, 6-11 July 2014.
- Co-chair of the *International Workshop on Process Management for Highly Dynamic and Pervasive Scenarios (PM4HDPS) [W10]*, held in conjunction with the 6th International Conference on Business Process Management (BPM'08), 1-4 September 2008.
- Member of the Programme Committee of the following conferences:
  - *1st International Conference on Process Mining (ICPM 2019)*, 23-28 June, 2019, Aachen, Germany.
  - *7th International Conference - Analysis of Images, Social networks and Texts (AIST 2018)*, 5-7 July 2018, Moscow, Russia.
  - *4th International Conference on Behavior, Economic and Socio-Cultural Computing (BESC 2018)*, 12-14 November, 2018, Taiwan.
  - *16th International Conference on Business Process Management (BPM 2018)*, 9-14 September 2018, Sydney, Australia.
  - *14th International Conference on Intelligent Environments (IE'18)*, 25-28 June, 2018, Rome, Italy.
  - *4th International Conference on Behavior, Economic and Socio-Cultural Computing (BESC 2017)*, 16-18 October, 2017, Krakow, Poland
  - *15th International Conference on Business Process Management (BPM 2017)*, 10-15 September 2017, Barcelona, Spain.
  - *3rd International Conference on Behavior, Economic and Socio-Cultural Computing (BESC 2016)*, 11-13 November, 2016, Durham, USA.
  - *14th International Conference on Business Process Management (BPM 2016)*, 18-22 September 2015, Rio De Janeiro, Brazil.

<sup>3</sup>[https://www.win.tue.nl/ieetfpm/doku.php?id=shared:process\\_discovery\\_contest](https://www.win.tue.nl/ieetfpm/doku.php?id=shared:process_discovery_contest)

<sup>4</sup>[http://www.win.tue.nl/ieetfpm/doku.php?id=shared:edition\\_2016](http://www.win.tue.nl/ieetfpm/doku.php?id=shared:edition_2016)

- *15th International Conference on Perspectives in Business Informatics Research (BIR 2016)*, 14-16 September, 2016, Prague, Czech Republic.
- *18th IEEE Conference on Business Informatics (CBI 2016)*, 29 August - 1 September, Paris, France.
- *13th IEEE International Conference on Services Computing (SCC 2016)*, 27 June - 2 July, 2016, San Francisco, USA.
- *8th IEEE International Conference on Service-Oriented Computing and Applications (SOCA 2015)*, November 2015, Rome, Italy.
- *2nd International Conference on Behavior, Economic and Socio-Cultural Computing (BESC 2015)*, October, 2015, Nanjing, Cina.
- *14th International Conference on Perspectives in Business Informatics Research (BIR 2015)*, 26-28 August, 2015, Tartu, Estonia
- *7th IEEE International Conference on Service-Oriented Computing and Applications (SOCA 2014)*, November 2014, Matsue, Japan.
- *2014 International Conference on Behavioral, Economic, and Socio-Cultural Computing (BESC 2014)*, October-November 2014, Shanghai, China.
- *6th IEEE International Conference on Service-Oriented Computing and Applications (SOCA 2013)*, December 2013, Kauai, Hawaii, USA.
- *9th International Conference on Business Process Management (BPM 2011)* - Demonstration Track, August-September 2011, Clermont-Ferrand, France.
- *8th International Conference on Business Process Management (BPM 2010)* - Demonstration Track, September 2010, Hoboken, USA.
- *5th International Conference on Information Systems for Crisis Response and Management (ISCRAM2008)* - Special Session on “Process- and Geo-aware Systems for Crisis Management”, May 2008, Washington, USA.

□ Member of the Programme Committee of the following symposia and workshops:

- *6th International Workshop on Declarative/Decision/Hybrid Mining and Modelling for Business Processes (DeHMiMoP 2018)* co-located with the 16th International Conference on Business Process Management (BPM 2018), 9-14 September 2018, Sydney, Australia.
- *3rd International Workshop on Process Querying (PQ 2018)* co-located with the 16th International Conference on Business Process Management (BPM 2018), 9-14 September 2018, Sydney, Australia.
- *7th International Symposium on Data-driven Process Discovery and Analysis (SIMPDA 2017)*, 6-7 December, 2017, Neuchatel, Switzerland.
- *5th International Workshop on Declarative/Decision/Hybrid Mining and Modelling for Business Processes (DeHMiMoP 2017)* co-located with the 15th International Conference on Business Process Management (BPM 2017), 10-15 September 2017, Barcelona, Spain.
- *2nd International Workshop on Process Querying (PQ 2017)* co-located with the 15th International Conference on Business Process Management (BPM 2017), 10-15 September 2017, Rio De Janeiro, Brazil.
- *6th International Workshop on Theory and Applications of Process Visualization (TaProViz 2017)* co-located with the 15th International Conference on Business Process Management (BPM 2017), 10-15 September 2017, Rio De Janeiro, Brazil.
- *6th International Symposium on Data-driven Process Discovery and Analysis (SIMPDA 2016)*, 14-16 December, 2016, Graz, Austria.
- *5th International Workshop on Theory and Applications of Process Visualization (TaProViz 2016)* co-located with the 14th International Conference on Business Process Management (BPM 2016), 18-22 September 2015, Rio De Janeiro, Brazil.

- *4th International Workshop on Theory and Applications of Process Visualization (TaProViz 2015)* co-located with the 13th International Conference on Business Process Management (BPM 2015), September 2015, Innsbruck, Austria.
- *The International Workshop on Artificial Intelligence meets Business Processes and Services (AIBPS2014@SOCA)* co-located with the 7th IEEE International Conference on Service-Oriented Computing and Applications (SOCA 2014), November 2014, Matsue, Japan.
- *4th International Symposium on Data-driven Process Discovery and Analysis (SIMPDA 2014)*, November 2014, Milan, Italy.
- *3th International Workshop on Theory and Applications of Process Visualization (TaProViz 2014)* co-located with the 12th International Conference on Business Process Management (BPM 2014), September 2014, Eindhoven, The Netherlands.
- *2nd International Workshop on Knowledge-intensive Business Processes (KiBP 2013)* co-located with the 6th IEEE International Conference on Service-Oriented Computing and Applications (SOCA 2013), December 2013, Kauai, Hawaii, USA.
- *YAWL Symposium 2013*, June 2013, Bonn-Rhein-Sieg, Germany.
- *2013 IEEE Symposium on Computational Intelligence and Data Mining (CIDM 2013)* - Special Session on Process Mining, April 2013, Singapore.
- *1st International Workshop on Theory and Applications of Process Visualization (TaProViz 2012)* co-located with the 10th International Conference on Business Process Management (BPM 2012), September 2012, Tallin, Estonia.
- *1st International Workshop on Knowledge-intensive Business Processes (KiBP 2012)* co-located with the 13th International Conference on Principles of Knowledge Representation and Reasoning (KR 2012), June 2012, Rome, Italy.
- *3rd Workshop on the Pervasive Application of Wireless Technologies*, September 2011, Enschede, The Netherlands
- *International Workshop on Collaborations in Emergency Response and Disaster Management (ERDM 2011)* co-located with the 2011 International Conference on Collaboration Technologies and Systems (CTS 2011), May 2011, Philadelphia, USA.
- *2nd IEEE workshop Interdisciplinary Aspects of Coordination Applied to Pervasive Environments: Models and Applications* at the 16th International Workshops on Enabling Technologies: Infrastructures for Collaborative Enterprises (WETICE 2008), June 2008, Rome, Italy.
- *International Workshop on MOBILE and DIstributed approaches in Emergency Scenarios (MODIES)* co-located with the 2nd International Conference on Pervasive Computing Technologies for Healthcare, January 2008, Tampere, Finland.
- *IEEE workshop Interdisciplinary Aspects of Coordination Applied to Pervasive Environments: Models and Applications* at the 16th International Workshops on Enabling Technologies: Infrastructures for Collaborative Enterprises (WETICE 2007), June 2007, Evry, France.

### 3.8 Participation to Conferences and Workshops as Presenter and/or Chair

- *15th International Conference on Business Information Systems (BPM 2017)* (Barcelona, Spain, September 18-22 2017) where (i) chairing the Second Process Discovery Contest, (ii) chairing one session of the main conference, (iii) participating to the “BP meet IoT: new wine in old bottles?” panel, (iv) giving a tutorial on “Conformance Checking: What does your process do when you are not watching?”, (v) presenting work [W25] at the demo session.<sup>5</sup>
- *25th Italian Symposium on Advanced Database (SEBD 2017)* (Squillace Lido, Italy, 25-29 June 2017), presenting work [C29].

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<sup>5</sup>For point (i), see also Section 3.7; for points (iii), (iv), refer also to Section 3.3.

- *14th International Conference on Business Information Systems (BPM 2016)* (Rio De Janeiro, Brazil, 18-22 September 2016), chairing the First Process Discovery Contest (see also Section 3.7).
- *12th International Conference on Business Information Systems (BPM 2014)* (Eindhoven, the Netherlands, September 2014), presenting work [C20].
- *11th International Conference on Business Information Systems (BPM 2013)* (Beijing, China, 26-30 August, 2013), presenting work [C18].
- *28th Symposium On Applied Computing (SAC 2013)* (Coimbra, Portugal, 18-20 March 2013), presenting work [C15].
- *10th International Conference on Business Information Systems (BPM 2012)* (Tallin, Estonia, 3-6 June, 2012), presenting work [C14].
- *15th International Conference on Business Information Systems (BIS 2012)* (Vilnius, Lithuania 21-23 May, 2012), presenting work [C13].
- *Towards a Service-Based Internet - Third European Conference, (ServiceWave 2010)* (Ghent, Belgium, 13-15 December 2010), being the keynote speaker of the co-located *International Workshop on Emergency Management through Service Oriented Architectures (EMSOA 2010)*.
- *7th IEEE 2010 International Conference on Services Computing (SCC 2010)* (Miami, USA, 5-10 July 2010), presenting work [C10].
- *Information Systems For Crisis Response and Management (ISCRAM 2010)* (Seattle, USA, 2-5 May 2010), presenting work [C9].
- *7th International Conference on Business Process Management (BPM 2009)* (Ulm, Germany, 10-14 September 2009), presenting work [W12] at the demo session.
- *4th European Young Researchers Workshop on Service-Oriented Computing (YR-SOC 2009)* (Pisa, Italy, 17-19 June 2009), presenting work [W11].
- *24th ACM Symposium on Applied Computing (SAC 2009)* (Honolulu, USA, 8-12 March 2009), presenting work [C8].
- *6th International Conference on Service Oriented Computing (ICSOC 2008)* (Sydney, Australia, 1-4 December 2008), presenting work [W9].
- *6th International Conference on Business Process Management (BPM 2008)* (Milan, Italy, 1-4 September 2008), presenting work [W10] and chairing *The First International Workshop on Process Management for Highly Dynamic and Pervasive Scenarios (PM4HDPS)* on 1 September 2008.
- *17th IEEE International Workshops on Enabling Technologies: Infrastructures for Collaborative Enterprises (WETICE 2008)* (Rome, Italy, 23-25 June, 2008), presenting works [W6, W7].
- *5th International Conference on Business Process Management (BPM 2007)* (Brisbane, Australia, 24-28 September 2007), presenting work [C2].
- *16th IEEE International Workshops on Enabling Technologies: Infrastructures for Collaborative Enterprises (WETICE 2007)* (Evry, France, 18-29 June, 2007), presenting works [W4, W5].
- *5th ACM International Conference on Mobile Systems, Applications, and Services (MobiSys 2007)* (San Juan, Puerto Rico, 11-14 June 2007), presenting work [W3] at the co-located workshop *MobiEval : System Evaluation for Mobile Platforms Metrics, Methods, Tools and Platforms*
- *4th International Conference on Information Systems for Crisis Response and Management (IS-CRAM 2007)* (Delft, the Netherlands, 13-16 May, 2007), presenting work [C4].

- *2nd International IEEE Conference on Collaborative Computing: Networking, Applications and Worksharing (COLLABORATECOM 2006)* (Atlanta, USA, 17-20 November, 2006), presenting work [W2].
- *15th IEEE International Workshops on Enabling Technologies: Infrastructures for Collaborative Enterprises (WETICE 2006)* (Manchester, UK, 26-28 June, 2006), presenting work [W1].

## 4 Teaching Activities

### 4.1 Academic Teaching Experiences

Section 4.1.1 reports on the teaching experience while being Assistant Professor at Eindhoven University of Technology. Section 4.1.2 summarises the previous teaching experiences.

#### 4.1.1 Teaching Experience from Academic Year 2014-2015

At Eindhoven University of Technology, an academic year is divided into two semesters, each of which composed by two quarters. Each quarter is composed of 8 weeks. Within a quarter, eight contact hours are allocated per week for each Bachelor course. These eight hours are divided into four slots of two hours. Traditionally, two slots (four hours) are used as frontal lectures to introduce the course concepts; the other two slots are used for instructions. During the instructions, the tutor uses part of the available time to introduce students to the practical application of the course concepts: (s)he carries out exercises on the blackboard. In the second part of the instructions, students do the exercises independently: tutors are available on requests to answer any student's questions about exercises and course topics. Conversely, two slots (four hours) are allocated to master courses per week, instead of four slots. The use of these two weekly slots vary depending on the courses.

**June-July 2018.** *Process Mining*, Ph.D. Program in Information Engineering, Technical University of Marche [Università Politecnica delle Marche]

- *Topics:* Petri Nets and Business Process Management, Process Discovery, Conformance and Compliance Checking, Application of Process Mining techniques in real settings using the ProM software tool.

**A.Y. (Academic Year) 2017-2018, 2018-2019.** *Process Mining*, Professional Doctorate in Data Science, Academic of Data Science, 's-Hertogenbosch, the Netherlands

- The course is divided in two parts. During the first two weeks, students acquire the basic knowledge on Process Mining. In the subsequent five weeks, students form groups and carry on real-life projects with the industry. In this second phase, students weekly meet Dr. de Leoni and company representatives to discuss the project progresses. Students are also expected to prepare a report with the project outcomes. During the last week, students present the results to the audience through a presentation. The projects are evaluated by Dr. de Leoni on the basis of the quality of the reports and the presentations.
- *Topics:* Petri Nets and Business Process Management, Process Discovery, Conformance and Compliance Checking, Application of Process Mining techniques in real settings using the tools ProM and Celonis.
- *Role:* Dr. de Leoni is the responsible, in charge of preparing the teaching material and the project descriptions, providing intermediate feedback on the project progresses and, finally, grading the project.

**A.Y. 2017-2018.** *DBL Information System*, Bachelor in Computer Science (2nd year)

- The course aims to teach students how to design, develop and implement simple information systems that pre-process, elaborate and visualise process data generated by information

systems. Students will form groups and carry on a project (the same project for all groups) related to pre-processing, elaboration and visualisation of process data. The course will use real data extracted from the information system of Jan De Rijk.

- *Topics:* Database, Visual Interfaces and Information Systems.
- *Role:* Dr. de Leoni is the responsible, in charge of preparing the teaching material and the project description, providing intermediate feedback on the project progresses and, finally, grading the project.

**A.Ys. 2014-2015 and 2015-2016.** *Business Process Intelligence*, Bachelor in Computer Science (3rd year)

- The course is introductory to Process Mining and Business Process Intelligence.
- *Topics:* Process Discovery, Conformance and Compliance Checking, the ProM framework, Application of Process Mining techniques in real settings using ProM.
- *Role:* Giving instructions, arranging the instructions' material and the exercise bundle, preparing and grading exams and assignments.

**A.Ys. 2015-2016, 2016-2017.** *Introduction to Process Mining*, Masters "Business Information Systems" and "Digital Data Science" (1st year).

- The course is introductory to Process Mining and Business Process Intelligence. The difference with the *Business Process Intelligence* course is only related to the audience, which is composed by Master students (instead of Bachelor students).
- *Topics:* Process Discovery, Conformance and Compliance Checking, the ProM framework, Application of Process Mining techniques in real settings using ProM.
- *Role:* Giving instructions, arranging the instructions' material and the exercise bundle, preparing and grading exams and assignments.

**From A.Y. 2014-2015** *Business Information System* (Edition Quarter 1), Bachelor in Computer Science (2nd year), Master "Business Information Systems" (1st year).

- This course touches on topics related to modelling, simulation and analysis of Business Processes. The concepts are applicable to any modelling notation; however, to make the concepts more concrete, this course employs Petri nets.
- *Topics:* Modelling, Simulation and Analysis of Business Processes.
- *Role:* Until A.Y. 2015-2016, Dr. de Leoni was in charge of the practical sessions. From A.Y. 2016-2017, he has become responsible. Responsibilities when playing the respective roles:

**Until A.Y. 2015-2016.** Teaching the practical sessions, arranging the material of these sessions, preparing and grading exams and assignments.

**From A.Y. 2016-2017.** Organising the course schedule. Synchronising a team of five people: two teachers in charge of the practical sessions, two student assistants providing support for the practical sessions, and myself. Supervising the preparation and grading of exams and assignments.

**From A.Y. 2014-2015.** *Business Information System* (Edition Quarter 3), Master "Business Information Systems" (1st year).

- This course is the second edition that is given in the third quarter between January and April. It is intended a preparatory course to the master program in Business Information System for those students who enroll during the second semester. The topics coincide with those of the Quarter-1 edition. Differently from the edition of quartile 1, this edition is based on four hours per week, instead of eight hours. This is due to the limited amount of resources that can be allocated to this course. To address this limitation, Dr. de Leoni employed a flipped-classroom approach where the four weekly hours that were allocated to explaining the theoretical concepts are replaced by video-lectures.

- *Role:* Responsible. Organising the course schedule. Preparing the material for instructions. Preparing and grading of exams and assignments.

**A.Y. 2014-2015** *Seminar Architecture of Information Systems*, Master “Business Information Systems” (2nd year).

- *Topics:* Familiarise with the most recent topics in Business Process Management through lectures by staff members and guest lecturers from industry. The exam consists in a literature study. The course aims is to prepare students to a Master project in Business Process Management.
- *Role:* Co-lecturer. Dr. de Leoni was in charge of giving lectures on Declarative Process Modelling, arranging assignments and supervising students while carrying on the assignments and, finally, grading the assignments.

The following table reports the average student evaluation for the different courses in which Dr. de Leoni was involved and for which the student evaluation was conducted at least one year:<sup>6</sup>

Course	A.Y. 2014-2015	2015-2016	2016-2017	2017-2018
Business Information System (Quarter 1)	3.4 / 5	2.7 / 5	<b>8.1 / 10</b>	<b>7.1 / 10</b>
Business Information System (Quarter 3)	<b>9.3 / 10</b>	<b>7.3 / 10</b>	<b>8.0 / 10</b>	<b>N.A.</b>
Business Process Intelligence	3.9 / 5	3.7 / 5	–	–
Introduction to Process Mining	–	7.8 / 10	7.7 / 10	–
DBL Information Systems	–	–	–	<b>7.4 / 10</b>

The averages are sometimes given in fifth and other times in tenth. The values in bold refer to the courses for which Dr. de Leoni was responsible. The other values are the average student evaluations of the subjects in which Dr. de Leoni was involved but not acting as responsible.

Business Information System (Quarter 1) for A.Y. 2016-2017 and Introduction to Process Mining for A.Y. 2015-2016 obtained a prize by the Computer-Science Graduate Program for the excellent student evaluations.

#### 4.1.2 Previous Academic Teaching Experiences

**Semester 1, A.Y. (Academic Year) 2013-2014.** *Process Mining*, Professional Doctorate in Engineering, Faculty of Mathematics and Computer Science, Eindhoven University of Technology, the Netherlands.

- Preparation of teaching material and face-to-face lectures (24 teaching hours), including practical sessions.
- Topic of lectures: Petri Nets and Business Process Management, Process Discovery, Conformance and Compliance Checking, the ProM framework, Application of Process Mining techniques in real settings using ProM.
- Dr. de Leoni was responsible.

**Semester 2, A.Y. (Academic Year) 2013-2014.** *Information Systems for Health Care* [Sistemi Informativi Sanitari], Master Degree in Biomedical Engineer, University of Naples, Italy.

- Preparation of teaching material and face-to-face lectures (6 teaching hours), including a practical session.
- Topic of lectures: Petri Nets and YAWL Workflow system.
- Responsible: Prof. A. Pepino.

<sup>6</sup>Indication N.A. (Not Applicable) refers to courses for which the questionnaire-based student evaluations were not conducted.

**Semester 2, A.Y. (Academic Year) 2013-2014.** *Business Process Management Systems*, Master Degree in Computer Science and Master Degree in Business Information System, Eindhoven University of Technology, the Netherlands.

- Preparation of teaching material and face-to-face lectures (4 teaching hours).
- Topic of lectures: YAWL Workflow system and Workflow Patterns.
- Responsible: Dr. D. Fahland.

**Semester 2, A.Y. 2012-2013.** Mini-course on *Process Mining*, Honor-Program Course, Eindhoven University of Technology, the Netherlands.

- Preparation of teaching material and face-to-face lectures (4 teaching hours).
- Topic of lectures: application of the latest techniques of Process Mining to real-life case studies. In particular, existing process-mining tools (specifically, Disco and ProM) were used.
- Responsible: Prof. W. M. P. van der Aalst.

**Semester 1, A.Y. 2009-2010.** *Elective in Software and Services*, Master Degree in Computer Engineering, Sapienza University of Rome, Italy

- Preparation of teaching material and face-to-face lectures (4 teaching hours)
- Topic of lectures: Petri Nets and YAWL Workflow system.
- Responsibilities: profs. G. De Giacomo and M. Lenzerini.

**Semester 2, A.Ys. 2008-2009 and 2009-2010.** Laboratory course of *System Design* [Progettazione del Software], Bachelor Degree in Computer Engineering, Sapienza University of Rome, Italy

- Dr. de Leoni was the responsible.
- Preparation of teaching material, laboratory exercises and exams, face-to-face lectures (50 teaching hours per year), and marking the exams.
- Topic of lectures: Advanced aspects of Java Programming (Swing and Thread), Design patterns, UML, Software Design and Realisation using UML.

**Semester 2, A.Ys. 2005-2006 and 2006-2007 and 2007-2008.** *Advanced System Design* [Progettazione del Software 2], Bachelor and Master Degree in Computer Engineering, Sapienza University of Rome, Italy

- Responsible: Prof. M. Mecella.
- Preparation of teaching material and face-to-face lectures (18 teaching hours per year) concerning the laboratory part of the course.
- Topic of lectures: J2EE and deployment of J2EE modules in the JBoss Application Server.

**Semester 2, A.Ys. 2004-2005 and 2005-2006.** *System Design* [Progettazione del Software], Bachelor Degree in Computer Engineering, Sapienza University of Rome, Italy

- Responsible: Prof. M. Mecella.
- Preparation of teaching material and face-to-face lectures (10 teaching hours per year) concerning the laboratory part of the course
- Topic of lectures: Basic concepts on Java programming.



## 4.2 Corporate Training Experiences

**May 2010.** Two half-day seminars at Selex - Sistemi Integrati, Roma, Italy, on Human-Computer Interaction Techniques.

**16-18 July 2007.** One-week full training course at Alcatel-Lucent's branch in Rieti (Italy) on XML Languages (XPath, XQuery, etc.) and their use in programming languages.

**16-18 June 2007.** One-week full training course at Alcatel-Lucent's branch in Battipaglia (Italy) on XML Languages (XPath, XQuery, etc.) and their use in programming languages.

**2-6 October 2006.** One-week full training course at Alcatel-Lucent's branch in Battipaglia (Italy) on the development of Web Applications with Apache e MySQL.

**30-31 March 2006.** One-week full training course at Alcatel-Lucent's branch in Battipaglia (Italy) on Middleware and Distributed Systems.

## 4.3 Supervision of Students and Participation into Juries for Assessment of Students

- Daily supervisor and co-promotor of the Ph.D. projects of the following students:
  1. F. Mannhardt on research topics related to Multi-perspective Process Mining (see also Section 3.2). First Promotor: H. A. Reijers; Second Promotor: W. M. P. van der Aalst. Ongoing. Defended on 7 February 2018.
  2. A. Bolt on research topics related to Analytical Workflows and Process Cubes (see also Section 3.2). Promotor: W. M. P. van der Aalst. Ongoing. Expected Completion: End of 2018.
  3. M. Dees on research topics related to Process-centric Decision Support (see also Section 3.2). Promotor: W. M. P. van der Aalst. Ongoing. Expected Completion: 2019.
- Member of the Assessment Committee of Toon Jouck, Ph.D. candidate at the Faculty of Business Economics, University of Hasselt, Belgium. Defense Date: 31 August 2018.
- Member of the Assessment Committee of the following Ph.D. candidates in Computer Engineering, at the Technical University of March [University Politecnica of Marche], Italy (Defended on 4 March 2016):
  1. L. Genga, *From Event Logs to Subprocesses: Supporting the Analysis of Unstructured Processes*.
  2. S. Iarlori, *Monitoring and Analysis of Movements in Subjects with Cognitive and Motor Diseases by Machine-Learning Methods*.
  3. P. Sernani, *Design and Virtualization of Intelligent Systems for the Management of Assistive Environments*.
- University Supervisor for the final graduation project of N. Gupta, *Interactive visualization of business processes*, Professional Doctorate in Engineering (PDEng), degree programme in Software Technology, Eindhoven University of Technology. Completion: September 2015.
- Main supervisor for the graduation projects of the following master students:
  1. M. H. M. Schouten, *Declarative vs Procedural Languages for Data-aware Compliance Checking: A Case Study in Finance*, Master Degree in Business Information Systems, Eindhoven University of Technology. October 2015. Final grade: 7.5 (out of 10).
  2. R. H. V. van Balkom, *A Graphical Language for Expressing Process Constraints for multiple perspective: Design, Implementation and Validation on a Real-life Ticketing Systems*, Master Degree in Business Information Systems, Eindhoven University of Technology. September 2016. Final grade: 8.5.

3. P. H. Klees, *Application of Process Mining in Logistics*, Master Degree in Business Information Systems, Eindhoven University of Technology. August 2017. Final grade: 6.
4. A. Syring, *The Application of Process Mining To Analyze and Improve Processes at a Debt Collection Agency* (provisional title). May 2018. Final grade: 9.
5. H. Aklecha, *Run-time Predictions of Process KPIs in the suite Process Gold: Framework, Implementation and Case Studies*. October 2018. Final grade: 6.
6. S. Dundar, *Clustering Low-Level Events into Activities: A Time-Based Approach*. October 2018. Final grade: 7.5.
7. L. T. W. Reulink, *Design, Implementation and Evaluation of a KPI-driven Recommender System based on Predictive Process Monitoring*. December 2018. Final grade: 8.5.

□ Daily supervisor for the graduation project of the following Bachelor and Master students:<sup>7</sup>

1. F. D'Aprano, *Emulation of Mobile Ad-hoc Network by NS-2* [Emulazione di Reti Mobili Ad-hoc con NS-2], Bachelor Degree in Computer Engineering, Sapienza University of Rome, Italy. Main Supervisor: Prof. Massimo Mecella. February 2006
2. S. Saltarelli, *Testing J2EE Technologies on the JBOSS Platform* [Sperimentazione di Tecnologie J2EE sulla Piattaforma JBOSS], Bachelor Degree in Computer Engineering, Sapienza University of Rome, Italy. Main Supervisor: Prof. Massimo Mecella. October 2006
3. A. Sabatino, *Design of a Graphical User Interface to define workflow processes* [Progettazione di una Interfaccia Grafica per la definizione di process di workflow], Bachelor Degree in Computer Engineering, Sapienza University of Rome, Italy. Main Supervisor: Prof. Massimo Mecella. February 2007
4. A. Raffa, *Design and Implementation of a Software Application on Mobile Devices for Local Police Departments* [Progettazione e Implementazione di una Applicazione Software su Dispositivi Mobili per Polizie Locali], Bachelor Degree in Computer Engineering, Sapienza University of Rome, Italy. Main Supervisor: Prof. Massimo Mecella. February 2007
5. L. Iannaioli, *Modelling Wireless Channels in Emulators of Mobile Ad hoc Networks* [Modelazione di Canali Wireless in Emulatori di Reti Mobili Ad-hoc], Bachelor Degree in Computer Engineering, Sapienza University of Rome, Italy. Main Supervisor: Prof. Massimo Mecella. May 2007
6. M. Guarnacci, *Integration of Printing Features in a Software Application for Local Polices using Bluetooth Mobile Printers* [Integrazione di funzionalità di Stampa in un'Applicazione Software per Polizie Locali usando Stampanti Mobili Bluetooth], Bachelor Degree in Computer Engineering, Sapienza University of Rome, Italy. Main Supervisor: Prof. Tiziana Catarci. July 2007
7. G. Bertelli, *Mobile Ad-hoc Networks for Collaborative and Mission-critical Mobile Scenarios: a Practical Study*, Master Degree in Computer Engineering, Sapienza University of Rome, Italy. Main Supervisor: Prof. Massimo Mecella. May 2008
8. A. De Gaetanis, *ROME4EU. A System for Handling Workflow Processes on Mobile Devices: Integrating Services and External Application*, Master Degree in Computer Engineering, Sapienza University of Rome, Italy. Main supervisor: Prof. Massimo Mecella. May 2008
9. A. Pezzullo, *ROME4EU. A System for Handling Workflow Processes on Mobile Devices: a Web-Service based middleware*, Master Degree in Computer Engineering, Sapienza University of Rome, Italy. Main Supervisor: Prof. Massimo Mecella. May 2008
10. G. La Medica, *Design and implementation of a configuration tool for a visual support for the activity assignment in business processes* [Progettazione e Implementazione di un Tool di Configurazione per il Supporto Visuale per l'assegnamento di Attività in Processi di Business], Bachelor Degree in Computer Engineering, Sapienza University of Rome, Italy. Main Supervisor: Prof. Massimo Mecella. May 2008

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<sup>7</sup>When the report (and the title) of a graduation project was in Italian, the English transition is reported, with the Italian title in square brackets.

11. F. Cardi, *A Visualization Framework for Work-item Assignment in Process-aware Information Systems*, Master Degree in Computer Engineering, Sapienza University of Rome, Italy. Main Supervisor: Prof. Massimo Mecella. March 2009
12. J.V. Franchi, *ROME4EU. The Roman Orchestration Mobile Engine for Emergency Units. Process Restructuring*, Master Degree in Computer Engineering, Sapienza University of Rome, Italy. Main Supervisor: Massimo Mecella. March 2009
13. D. Graziano, *ROME4EU. The Roman Orchestration Mobile Engine for Emergency Units. Adaptive Management Techniques*, Master Degree in Computer Engineering, Sapienza University of Rome, Italy. Main Supervisor: Prof. Massimo Mecella. March 2009
14. P. Manfrè, *ROME4EU. The Roman Orchestration Mobile Engine for Emergency Units. Integration with Context Monitoring Services*, Master Degree in Computer Engineering, Sapienza University of Rome, Italy. Main Supervisor: Prof. Massimo Mecella. March 2009
15. M. Marrella, *User-Centered Design Methodologies: the Approach and the Case of the WORKPAD Project*, Master Degree in Computer Engineering, Sapienza University of Rome, Italy. Main Supervisor: Prof. Massimo Mecella. October 2009
16. A. Di Toppa, *Visual Support to the Execution of Business Processes: Analysis and Testing on a Use Case* [Supporto Visuale all'Esecuzione di Processi di Business: Analisi e Sperimentazione di un Tool tramite un Caso d'Uso], Bachelor Degree in Computer Engineering, Sapienza University of Rome, Italy. Main Supervisor: Prof. Massimo Mecella. December 2010
17. C. Eren, *Predictions Using Contextual Information*, Master Degree in Business Information Systems, Eindhoven University of Technology. Main Supervisor: Prof. Wil M.P. van der Aalst. January 2013
18. S. Candel, *Discovery of Precise Guards and Invariants for Process Tasks: a Novel Algorithm and a Real-life Case Study*, Master Degree in Business Information Systems, Eindhoven University of Technology. Main Supervisor: Prof. Wil M.P. van der Aalst. July 2014
19. G. Lanciano, *Alignment-Based Conformance Checking of Partially-Ordered Traces and Process Models Using Automated Planning*, Master Degree in Computer Engineering, Sapienza University of Rome, Italy. Erasmus Student. Acting as Local and Daily Supervisor. Main Supervisor: Prof. Giuseppe De Giacomo. January 2018.

## 5 Funding Acquisition

**1 January 2015 - Present** Root Cause Analysis and Recommender Systems at UWV.

- Co-Responsible for this research, funded by UWV, a Dutch governmental agency that provides financial supports for job reintegration, work-related disable and other benefits of this sort.
- Financed by UWV to support the salary of Mr. Dees, who is working on his Ph.D. project for 50% of his time (cf. Section 4.3).

**2015.** Acquisition of funding from UWV to support N. Gupta, Professional Doctorate in Engineering (PDEng), degree programme in Software Technology, Eindhoven University of Technology. The funding acquisition amounted to 54450 Euros, which was integrated with the travel costs to visit Amsterdam, where the UWV headquarter is located.

**2009.** Support to the acquisition of funding for Sapienza University of Rome, Italy through the FP7 EU Framework Programme for Research and Innovation to support the opening of one Postdoc and one Ph.D. position.<sup>8</sup>

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<sup>8</sup>At that time, Dr. de Leoni was a Postdoc researcher and, hence, could not play any formal role in the proposal as member of Sapienza University of Rome, Italy.

- The SMART VORTEX project was accepted as 4-year Large Integrated Project co-financed by the European Union: 14 Partners from 5 EU member states, of which seven were scientific research institutions and seven were manufacturing and/or advance service companies.
- Sapienza University of Rome, Italy was given the leadership of one of the project workpackages. During the preparation phase, Dr. de Leoni coordinated the contribution to the proposal for the other partners (three partners) involved in the workpackage, including a state-of-the-art analysis.
- Dr. de Leoni prepared the financial statements for Sapienza University of Rome, Italy as support for funding requests.
- The EU contribution to the research unit of Sapienza University of Rome, Italy was 250K Euros out of an overall EUR contribution of 7.8M Euros for the entire project.

## 6 Publications

When possible to assess, the journals where Dr. de Leoni has published are accompanied with their respective impact factors at the time when the respective articles were accepted. Conference papers are associated with the acceptance rate for the specific year.

### Journal Articles

- [J18] A. Kalenkova, A. Burattin, M. de Leoni, W.M.P. van der Aalst, A. Sperduti. Discovering High-level BPMN Process Models from Event Data. *Business Process Management Journal*, Emerald Publishing. To Appear. **Journal Impact Factor 1.308**.
- [J17] F. Mannhardt, M. de Leoni, H.A. Reijers, W.M.P. van der Aalst, P.J. Toussaint. Process Variant Comparison: Using Event Logs to Detect Differences in Behavior and Business Rules. *Information Systems*, Elsevier, 76: 1-18, 2018. **Journal Impact Factor 2.777**. Extended Version of [C27].
- [J16] M. Polato, A. Sperduti, A. Burattin, M. de Leoni. Time and Activity Sequence Prediction of Business Process Instances. *Computing*, Springer, Computing, 100(9): 1005–1031, 2018. **Journal Impact Factor 1.589**. Extended Version of [C19].
- [J15] A. Bolt, M. de Leoni, W.M.P. van der Aalst. Process Variant Comparison: Using Event Logs to Detect Differences in Behavior and Business Rules. *Information Systems*, Elsevier, 74: 53–66, 2018. **Journal Impact Factor 2.777**. Extended Version of [C25].
- [J14] M. de Leoni, A. Marrella. Aligning Real Process Executions and Prescriptive Process Models through Automated Planning. *Expert System with Application*, Elsevier, 82: 162–183, 2017. **Journal Impact Factor 3.928**.
- [J13] A. Bolt, M. de Leoni, W.M.P. van der Aalst, Scientific Workflows for Process Mining: Building Blocks, Scenarios, and Implementation *International Journal on Software Tools for Technology Transfer*, Springer, 18(6):607–628, 2016. **Journal Impact Factor 1.612**.
- [J12] M. de Leoni. S. Suriadi, A. H. M. ter Hofstde, W. M. P. van der Aalst. Turning Event Logs into Process Movies: Animating What Has Really Happened. *International Journal on Software and Systems Modeling (SoSyM)*, Springer, 15(3):707–732, 2016. **Journal Impact Factor 1.654**.
- [J11] F. Mannhardt, M. de Leoni, H.A. Reijers, W.M.P. van der Aalst. Balanced Multi-Perspective Checking of Process Conformance. *Computing*, Springer, 98(4):407–437, 2016. **Journal Impact Factor 1.589**.
- [J10] M. de Leoni, W.M.P. van der Aalst, M. Dees. A General Process Mining Framework for Correlating, Predicting and Clustering Dynamic Behavior based on Event Logs. *Information Systems*, Springer, 56:258–277, 2016. **Journal Impact Factor 1.832**. Extended Version of [C20]

- [J9] M. Rovani, F. Maggi, M. de Leoni, W. M. P. van der Aalst. Declarative process mining in healthcare. *Expert System with Application*, Elsevier, 42(23):9236–9251, 2015. **Journal Impact Factor 2.981.**
- [J8] R. Conforti, M. de Leoni, M. La Rosa, W. M. P. van der Aalst, A. H. M. ter Hofstede. A Recommendation System for Predicting Risks across Multiple Business Process Instances. *Decision Support Systems*, Elsevier, 69:345–361, 2015. **Journal Impact Factor 2.6.**
- [J7] M. de Leoni, F. Maggi, W.M.P. van der Aalst. An Alignment-based Framework to Check the Conformance of Declarative Process Models and to Preprocess Logging Data. *Information Systems*, Elsevier, 47:258–277, 2015. **Journal Impact Factor 1.832.** Extended Version of [C14].
- [J6] M. de Leoni, M. Adams, W. M. P. van der Aalst, and A. H. M. ter Hofstede. Visual Support for Work Assignment in Process-Aware Information Systems: Framework Formalisation and Implementation. *Decision Support Systems*, Elsevier, 54:345–361, 2012. **Journal Impact Factor 2.6.** Extended Version of [C5].
- [J5] A. Russo, M. Mecella, M. de Leoni. ROME4EU - A Service Oriented Process-aware Information System for Mobile Devices. *Software: Practice & Experience*, Wiley, 42(10): 1275–1314, 2012. **Journal Impact Factor 1.008.** Extended Version of [C10].
- [J4] T. Catarci, M. de Leoni, A. Marrella, M. Mecella, A. Russo, R. Steinmann, M. Bortenschlager. WORKPAD: Process Management and Geo-Collaboration Help Disaster Response. *International Journal of Information Systems for Crisis Response and Management (IJISCRAM)* 3(1):32–49, 2011. Extended Version of [C9].
- [J3] S. R. Humayoun, T. Catarci, M. de Leoni, A. Marrella, M. Mecella, M. Bortenschlager, and R. Steinmann. Designing Mobile Systems in Highly Dynamic Scenarios. The WORKPAD Methodology. *Journal on Knowledge, Technology & Policy*, Springer, 22(1):25–43, 2009.
- [J2] M. de Leoni, S. R. Humayoun, M. Mecella, and R. Russo. A Bayesian Approach for Disconnection Management in Mobile Ad Hoc Networks. *Ubiquitous Computing and Communication Journal*, CPE, March 2008. *Special Issue ‘Coordination in Pervasive Environments’* Extended Version of [W4].
- [J1] T. Catarci, M. de Leoni, A. Marrella, M. Mecella, G. Vetere, B. Salvatore, S. Dustdar, L. Juszczyk, A. Manzoor, and Hong-Linh Truong. Pervasive Software Environments for Supporting Disaster Responses. *IEEE Internet Computing*, 12(1):26–37, 2008. **Journal Impact Factor 2.0.**

## Conference Papers

- [C34] M. de Leoni, P. Felli, M. Montali. A Holistic Approach for Soundness Verification of Decision-Aware Process Models. In *Proc. of the 37th International Conference on Conceptual Modeling (ER 2018)*, Lecture Notes In Computer Science, Xi’an, China, 22-25 October 2018, **Acceptance rate: 19%**.
- [C33] I. Teinemaa, N. Tax, M. de Leoni, M. Dumas, F. M. Maggi. Alarm-Based Prescriptive Process Monitoring. In *Proc. of the Business Process Management Forum*, 16th International Conference on Business Process Management (BPM 2018), Lecture Notes in Business Information Processing, Sydney, NSW, Australia, September 9-14, 2018 **Acceptance rate: 30%**.
- [C32] M. de Leoni, G. Lanciano, A. Marrella. Aligning Partially-Ordered Process-Execution Traces and Models Using Automated Planning. In *Proc. of the 28th International Conference on Automated Planning and Scheduling (ICAPS 2018)*, Delft, the Netherlands, 24-29 June 2018. **Acceptance rate: 27%**.

- [C31] M. Dees, M. de Leoni, F. Mannhardt. Enhancing Process Models to Improve Business Performance: A Methodology and Case Studies. In *Proc. of 25th International Conference on Cooperative Information Systems (CoopIS 2017)*, Lecture Notes In Computer Science, Rhodes, Greece, 25-27 October 2017 **Acceptance rate: 30%**.
- [C30] A. Bolt, W.M.P. van der Aalst, M. de Leoni. Finding Process Variants in Event Logs. In *Proc. of 25th International Conference on Cooperative Information Systems (CoopIS 2017)*, Lecture Notes In Computer Science, Rhodes, Greece, 25-27 October 2017
- [C29] M. de Leoni, A. Marrella. Aligning Real Process Executions and Prescriptive Process Models through Automated Planning. How Planning Techniques Can Help Process Mining: The Conformance-Checking Case In *Proc. of the 25th Italian Symposium on Advanced Database (SEBD 2017)*, Squillace Lido, Italy, 25-29 June 2017. Extended abstract of [J14].
- [C28] F. Mannhardt, M. de Leoni, H.A. Reijers, W.M.P. van der Aalst. Heuristic Mining Revamped: An Interactive, Data-aware, and Conformance-aware Miner. In *Proc. of the 29th International Conference on Advanced Information Systems Engineering (CAiSE 2017)*, Lecture Notes In Computer Science, Essen, Germany, 12-16 June 2017 **Acceptance rate: 21%**.
- [C27] F. Mannhardt, M. de Leoni, H.A. Reijers, W.M.P. van der Aalst, P.J. Toussaint. From Low-Level Events to Activities - A Pattern-based Approach In *Proc. of the 14th International Conference on Business Process Management (BPM 2016)*, Lecture Notes In Computer Science, Rio De Janeiro, Brazil, September 18-22, 2016. **Acceptance rate: 17%**.
- [C26] F. Mannhardt, M. de Leoni, H.A. Reijers, W.M.P. van der Aalst. Decision Mining Revisited - Discovering Overlapping Rules In *Proc. of the 28th International Conference on Advanced Information Systems Engineering (CAiSE 2016)*, Lecture Notes In Computer Science, Ljubljana, Slovenia, 13-17 June 2016 **Acceptance rate: 18%**.
- [C25] A. Bolt, M. de Leoni, W.M.P. van der Aalst. A Visual Approach to Spot Statistically-Significant Differences in Event Logs Based on Configurable Metrics In *Proc. of the 28th International Conference on Advanced Information Systems Engineering (CAiSE 2016)*, Lecture Notes In Computer Science, Ljubljana, Slovenia, 13-17 June 2016 **Acceptance rate: 18%**.
- [C24] A. Bolt, M. de Leoni, W.M.P. van der Aalst. Exploiting Process Cubes, Analytic Workflows and Process Mining for Business Process Reporting: A Case Study in Education. In *Proc. of 5th International Symposium on Data-driven Process Discovery and Analysis (SIMPDA 2015)*, Lecture Notes in Business Information Processing, Vienna, Austria, 9-11 December 2015. **Acceptance rate: 33%**.
- [C23] M. Alizadeh, M. de Leoni, N. Zannone. Constructing Probable Explanations of Nonconformity: A Data-aware and History-based Approach. In *Proc. of the 2015 IEEE Symposium on Computational Intelligence and Data Mining Symposium (CIDM 15)*, IEEE Society, Cape Town, South Africa, 7-10 December 2015.
- [C22] M. de Leoni, J. Munoz-Gama, J. Carmona, W.M.P. van der Aalst. Decomposing Alignment-based Conformance Checking of Data-aware Process Models In *Proc. of 22nd International Conference on Cooperative Information Systems (CoopIS 2014)*, Lecture Notes In Computer Science, Amantea, Italy, 27-31 October 2014. **Acceptance rate: 35%**.
- [C21] M. Alizadeh, M. de Leoni, N. Zannone. History-based Construction of Log-Process Alignments for Conformance Checking: Formalization and Implementation In *Proc. of the 4th International Symposium on Data-driven Process Discovery and Analysis (SIMPDA 2014)* (Revised Selected Papers), Lecture Notes in Business Information Processing, Milan, Italy, 19-21 November, 2014. **Acceptance rate: 21%**.

- [C20] M. de Leoni, W.M.P. van der Aalst, M. Dees. A General Framework for Correlating Business Process Characteristics In *Proc. of the 12th International Conference on Business Process Management (BPM 2014)*, Lecture Notes In Computer Science, Haifa, Israel, September 7-11, 2014. **Acceptance rate: 17%**.
- [C19] M. Polato, A. Sperduti, B. Burattin, M. de Leoni. Data-Aware Remaining Time Prediction of Business Process Instances. In *Proc. of the 2014 International Joint Conference on Neural Networks (IJCNN 2014)*, IEEE, Beijing, China, July 6-11, 2014.
- [C18] M. de Leoni, W.M.P. van der Aalst. Aligning Event Logs and Process Models for Multi-perspective Conformance Checking: An Approach Based on Integer Linear Programming. In *Proc. of the 11th International Conference on Business Process Management (BPM 2013)*, Lecture Notes In Computer Science, Springer, Beijing, China, September 3-6, 2013. **Acceptance rate: 14.4%**.
- [C17] R. Conforti, M. de Leoni, M. La Rosa, W.M.P. van der Aalst. Supporting Risk-Informed Decisions during Business Process Execution. In *Proceedings of 25th International Conference on Advanced Information Systems Engineering (CAISE 2013)*, Lecture Notes In Computer Science, Springer, Valencia, Spain, June 17-21, 2013 Also available as Technical Report [R5]. **Acceptance Rate: 16.6%**.
- [C16] M. de Leoni, M. Dumas, L. García-Bañuelos. Discovering Branching Conditions from Business Process Execution Logs. In *Proc. of 16th International Conference on Fundamental Approaches to Software Engineering (FASE 2013)*, Lecture Notes In Computer Science, Springer, Rome, Italy, March 16-24, 2013. **Acceptance rate: 23%**.
- [C15] M. de Leoni, W.M.P. van der Aalst. Data-Aware Process Mining: Discovering Decisions in Processes Using Alignments. In *Proc. of the 28th ACM Symposium on Applied Computing (SAC 2013)*, ACM, Coimbra, Portugal, March 18-22, 2013. **Acceptance Rate: 24%**.
- [C14] M. de Leoni, F.M. Maggi, W.M.P. van der Aalst. Aligning Event Logs and Declarative Process Models for Conformance Checking. In *Proc. of the 10th International Conference on Business Process Management (BPM 2012)*, Lecture Notes In Computer Science, Springer, Tallinn, Estonia, September 3-6, 2012. **Acceptance rate: 15%**.
- [C13] M. de Leoni, W.M.P. van der Aalst, B.F. van Dongen. Data- and Resource-aware Conformance Checking of Business Processes. In *Proc. of the 15th International Conference on Business Information Systems (BIS 2012)*, Lecture Notes in Business Information Processing, Springer, Vilnius, Lithuania, May 21-23, 2012. **Acceptance rate: 37%**.
- [C12] D. Fahland, M. de Leoni, B.F. van Dongen, W.M.P. van der Aalst. Conformance Checking of Interacting Processes With Overlapping Instances In *Proc. of the 9th International Conference on Business Process Management (BPM 2011)*, Lecture Notes In Computer Science, Springer Clermont-Ferrand, France, August 28 to September 2, 2011. **Acceptance rate: 14%**.
- [C11] D. Fahland, M. de Leoni, B.F. van Dongen, W.M.P. van der Aalst. Behavioral Conformance of Artifact-Centric Process Models In *Proc. of the 14th International Conference on Business Information Systems (BIS 2011)*, Lecture Notes in Business Information Processing, Springer, Poznan, Poland, June 15-17, 2011. **Acceptance rate: 29%**.
- [C10] M. de Leoni, M. Mecella. Mobile Process Management through Web Services. In *Proceedings of the 7th IEEE 2010 International Conference on Services Computing (SCC 2010)*, IEEE Computer Society, Miami, USA, July 5-10, 2010. **Acceptance rate: 18%**.
- [C9] M. Mecella, M. de Leoni, A. Marrella, T. Catarci, M. Bortenschlager, and R. Steinmann. The WORKPAD Project Experience: Improving the Disaster Response through Process Management and Geo Collaboration. In *Proceedings of the 7th International Conference on Information Systems for Crisis Response and Management (ISCRAM2010)*, Seattle, USA, May 2-5, 2010.

- [C8] M. de Leoni, G. De Giacomo, Y. Lespérance, and M. Mecella. On-line Adaptation of Sequential Mobile Processes Running Concurrently. In *Proceedings of the 2009 ACM symposium on Applied Computing (SAC 2009)*, ACM, Honolulu, USA, March 8-12, 2009. **Acceptance rate: 29%**.
- [C7] M. de Leoni, M. Mecella, P. Manfre', J. V. Franchi, and D. Graziano. Disconnection prediction in mobile P2P networks using publish/subscribe. In *International Conference on Ultra Modern Telecommunications & Workshops (ICUMT 2009)*, IEEE, S. Pietersburg, Russia, October 12-14, 2009.
- [C6] S. Humayoun, T. Catarci, M. Leoni, A. Marrella, M. Mecella, Manfred Bortenschlager, and Renate Steinmann. The WORKPAD User Interface and Methodology: Developing Smart and Effective Mobile Applications for Emergency Operators. In *Proceedings of the 5th International Conference on Universal Access in Human-Computer Interaction (HCI 2009): Part III*, Lecture Notes In Computer Science, Springer, San Diego, USA, July 19-24, 2009.
- [C5] M. de Leoni, W. M. P. van der Aalst, and A. H. M. ter Hofstede. Visual Support for Work Assignment in Process-Aware Information Systems. In *Proceedings of the 6th International Conference on Business Process Management (BPM'08)*, Lecture Notes In Computer Science, Springer, Milan, Italy, September 1-4, 2008. **Acceptance rate: 14.9%**.
- [C4] M. de Leoni, F. De Rosa, A. Marrella, A. Poggi, A. Krek, and F. Manti. Emergency Management: from User Requirements to a Flexible P2P Architecture. In *Proceedings of the 4th International Conference on Information Systems for Crisis Response and Management IS-CRAM2007*, Delft, the Netherlands, May 13-16, 2007.
- [C3] M. de Leoni, F. De Rosa, S. Dustdar, and M. Mecella. Resource disconnection management in MANET driven by process time plan. In *Proceedings of the 1st ACM/ICST International Conference on Autonomic Computing and Communication Systems (2007)*, ACM, Rome, Italy, October 28-30, 2007.
- [C2] M. de Leoni, M. Mecella, and G. De Giacomo. Highly Dynamic Adaptation in Process Management Systems Through Execution Monitoring. In *Proceedings of the 5th International Conference on Business Process Management (BPM'07)*, Lecture Notes In Computer Science, Springer, Brisbane, Australia, September, 24-28 2007. **Acceptance rate: 14.5%**.
- [C1] G. De Giacomo, M. de Leoni, M. Mecella, and F. Patrizi. Automatic Workflows Composition of Mobile Services. In *Proceedings of the 2007 IEEE International Conference on Web Services (ICWS 2007)*, IEEE Computer Society, Salt Lake City, USA, July 9-13, 2007. **Acceptance rate: 18%**.

## Workshop and Demo Papers

- [W26] Generating Decision-Aware Models & Logs: Towards an Evaluation of Decision Mining. In *Proc. of the 6th International Workshop on Declarative/Decision/Hybrid Mining and Modelling for Business Processes (DeHMiMoP 2018)*, co-located with the 16th International Conference on Business Process Management, Lecture Notes In Computer Science, Springer, Sydney, Australia, 10 September 2018.
- [W25] F. Mannhardt, M. de Leoni and H. A. Reijers. Heuristic Mining Revamped: An Interactive, Data-aware, and Conformance-aware Miner. In *Proc. of the BPM Demo Sessions 2017*, CEUR-WS.org, Barcelona, Spain, September 2017.
- [W24] M. de Leoni, G. Lanciano, A. Marrella. A Tool for Aligning Event Logs and Prescriptive Process Models through Automated Planning. In *Proc. of the BPM Demo Sessions 2017*, CEUR-WS.org, Barcelona, Spain, September 2017.



- [W23] C. Di Ciccio, M.H.M. Schouten, M. de Leoni, J. Mendling. Declarative Process Discovery with MINERful in ProM. In *Proc. of the BPM Demo Sessions 2015*, CEUR-WS.org, Innsbruck, Austria, 31 August 2015.
- [W22] F. Mannhardt, M. de Leoni, H. A. Reijers. The Multi-perspective Process Explorer. In *Proc. of the BPM Demo Sessions 2015*, CEUR-WS.org, Innsbruck, Austria, 31 August 2015.
- [W21] F. Mannhardt, M. de Leoni, H. A. Reijers, W.M.P. van der Aalst . Measuring the Precision of Multi-perspective Process Models In *Proc. of the 11th International Workshop on Business Process Intelligence 2015 (BPI 2015)*, co-located with the 12th International Conference on Business Process Management, Lecture Notes In Computer Science, Springer, Innsbruck, Austria, 31 August 2015.
- [W20] F. Mannhardt, M. de Leoni, H. A. Reijers. Extending Process Logs with Events from Supplementary Sources In *Proc. of 3rd workshop on Data- & Artifact-centric BPM (DAB)*, co-located with the 11th International Conference on Business Process Management, Lecture Notes in Business Information Processing, Haifa, Israel, 8 September, 2014.
- [W19] M. de Leoni, W.M.P. van der Aalst. The FeaturePrediction Package in ProM: Correlating Business Process Characteristics In *Proc. of the BPM Demo Sessions 2014*, CEUR-WS.org, Haifa, Israel, 7-11 September, 2014.
- [W18] A. Kalenkova, M. de Leoni, W.M.P. van der Aalst. Discovering, Analyzing and Enhancing BPMN Models Using ProM In *Proc. of the BPM Demo Sessions 2014*, CEUR-WS.org, Haifa, Israel, 7-11 September, 2014 .
- [W17] R. Conforti, M. La Rosa, A.H.M. ter Hofstede, G. Fortino, M. de Leoni, W.M.P. van der Aalst and M. Adams. A Software Framework for Risk-Aware Business Process Management In *Proc. of the CAISE Forum 2013*, CEUR-WS.org, Valencia, Spain, June 20, 2013.
- [W16] IEEE Task Force on Process Mining (including M. de Leoni). Process Mining Manifesto In *Proc. of the Business Process Management Workshops 2011*, Lecture Notes in Business Information Processing, Springer, Clermont-Ferrand, France, August 28, 2011.
- [W15] D. Fahland, M. de Leoni, B.F. van Dongen, W.M.P. van der Aalst. Many-to-Many: Some Observations on Interactions in Artifact Choreographies In *Proc. of the 3rd Central-European Workshop on Services and their Composition (ZEUS 2011)*, CEUR-WS.org, Karlsruhe, Germany, February 21-22, 2011.
- [W14] M. de Leoni, A. Marrella, A. Russo. Process-aware Information Systems for Emergency Management. In *Proceedings of International Workshop on Emergency Management through Service Oriented Architectures (EMSOA 2010)*, Lecture Notes In Computer Science, Springer Ghent, Belgium, December 1, 2010.
- [W13] J. Hortelano, J.C. Cano, C. T. Calafate, P. Manzoni, M. de Leoni, M. Mecella. Bayesian filter-based Approach for Detecting Black-hole Attacks in MANETs. In *Proceedings of Fifth International Workshop on MOBILE and NETWORKING Technologies for social applications (MONET 2010) OnTheMove Federated Conferences and Workshop*, Lecture Notes In Computer Science, Springer, Crete, Greece, October 25-29, 2010
- [W12] F. Cardi, M. de Leoni, M. Adams, W. M. P. van der Aalst, and A. H. M. ter Hofstede. Visual Support for Work Assignment in YAWL. In *Proceedings of the Business Process Management Demonstration Track (BPM Demos 2009)*, CEUR-WS.org, Ulm, Germany, September 8, 2009.
- [W11] M. de Leoni. Adaptive Process Management in Highly Dynamic and Pervasive Scenarios. In *Proceedings Fourth European Young Researchers Workshop on Service Oriented Computing (YR-SOC 2009)*, Electronic Proceedings in Theoretical Computer Science, Pisa, Italy, June 17-19, 2009.

- [W10] M. de Leoni, S. Dustdar, and A. H. M. ter Hofstede. Introduction to the 1st International Workshop on Process Management for Highly Dynamic and Pervasive Scenarios (PM4HDPS 2008). In *BPM 2008 Workshops*, Lecture Notes in Business Information Processing, Springer, Milan, Italy, September, 1-4 2008.
- [W9] D. Battista, M. de Leoni, A. Gaetanis, M. Mecella, A. Pezzullo, A. Russo, and Costantino Saponaro. ROME4EU: A Web Service-Based Process-Aware System for Smart Devices. In *Proceedings of the 6th International Conference on Service-Oriented Computing (ICSOC 2008)*, Demo Session, Lecture Notes In Computer Science, Springer, Sydney, Australia, December 1-4, 2008.
- [W8] T. Catarci, F. Cincotti, M. de Leoni, M. Mecella, and G. Santucci. Smart homes for all: Collaborating services in a for-all architecture for domotics (Invited Paper) In *Proc. of The 4th International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom 2008)*, IEEE Computer Society, Orlando, USA, November 13-16, 2008.
- [W7] G. Bertelli, M de Leoni, M. Mecella, and J. Dean. Mobile Ad hoc Networks for Collaborative and Mission-critical Mobile Scenarios: a Practical Study. In *Proceedings of the 17th IEEE International Workshops on Enabling Technologies: Infrastructure for collaboration enterprises (WETICE 2008)*, IEEE Computer Society, Rome, Italy, June 23-25, 2008.
- [W6] M. de Leoni, A. Marrella, M. Mecella, S. Valentini, and Sebastian Sardina. Coordinating Mobile Actors in Pervasive and Mobile Scenarios: An AI-based Approach. In *Proceedings of the 17th IEEE International Workshops on Enabling Technologies: Infrastructure for collaboration enterprises (WETICE 2008)*, IEEE Computer Society, Rome, Italy, June 23-25, 2008.
- [W5] T. Catarci, M. de Leoni, F. De Rosa, M. Mecella, A. Poggi, S. Dustdar, L. Juszczak, H.L. Truong, and G. Vetere. The WORKPAD P2P Service-Oriented Infrastructure for Emergency Management. In *Proceedings of the 16th IEEE International Workshops on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE 2007)*, IEEE Computer Society, Evry, France, June 18-20, 2007.
- [W4] M. de Leoni, M. Mecella, and Ruggero Russo. A Bayesian Approach for Disconnection Management in Mobile Ad Hoc Networks. In *Proceedings of the 16th IEEE International Workshops on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE 2007)*, IEEE Computer Society, Evry, France, June 18-20, 2007.
- [W3] F. D'Aprano, M. de Leoni, and M. Mecella. Emulating mobile ad-hoc networks of hand-held devices: the octopus virtual environment. In *MobiEval '07: Proceedings of the 1st international workshop on System evaluation for mobile platforms*, ACM, San Juan, Puerto Rico, June 11-14, 2007.
- [W2] T. Catarci, F. De Rosa, M. de Leoni, M. Mecella, M. Angelaccio, S. Dustdar, A. Krek, G. Vetere, Z. M. Zalis, B. Gonzalez, and G. Iiritano. WORKPAD: 2-Layered Peer-to-Peer for Emergency Management through Adaptive Processes (Invited Paper). In *Proceedings of the 2nd International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom 2006)*, IEEE Computer Society, Atlanta, USA, November 17-20, 2006
- [W1] M. de Leoni, F. De Rosa, and M. Mecella. MOBIDIS: A Pervasive Architecture for Emergency Management. In *Proceedings of the 15th IEEE International Workshops on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE 2006)*, IEEE Computer Society, Manchester, UK, June 26-28, 2006.

## Technical Reports.

- [R6] M. de Leoni, J. Buijs, W. M. P. van der Aalst, and A. H. M. ter Hofstede. Facilitating Process Analysis through Visualising Process History: Experiences with a Dutch Municipality. BPM Center Report BPM-12-24, BPMcenter.org, 2012.

- [R5] R. Conforti, M. de Leoni, M. La Rosa, W.M.P. van der Aalst. Supporting Risk-Informed Decisions during Business Process Execution. BPM Center Report BPM-12-22, BPMcenter.org, 2012.
- [R4] M. de Leoni, W. M. P. van der Aalst, and A. H. M. ter Hofstede. Process Mining and Visual Analytics: Breathing Life into Business Process Models. BPM Center Report BPM-11-16, BPMcenter.org, 2011.
- [R3] M. de Leoni, A. Marrella, M. Mecella, S. Sardina SmartPM - Featuring Automatic Adaptation to Unplanned Exceptions Department of Computer and System Sciences Antonio Ruberti Technical Reports, SAPIENZA University of Rome, Vol 3, n.4 (2011)
- [R2] D. Battista, D. Graziano, J. V. Franchi, A. Russo, M. de Leoni, and M. Mecella. A Web Service-based Process-aware Information System for Smart Devices. Department of Computer and System Sciences Antonio Ruberti Technical Reports (2009)
- [R1] M. de Leoni, W. M. P. van der Aalst, and A. H. M. ter Hofstede. Visual Support for Work Assignment in Process-Aware Information Systems: Framework, Formalization, Operationalisation. BPM Center Report BPM-08-06, BPMcenter.org, 2008. Extended Version of [C5].

## Theses

- [T3] M. de Leoni. Adaptive Process Management in Highly Dynamic and Pervasive Scenarios. Ph.D. thesis, Sapienza University of Rome, Italy, 2009.
- [T2] M. de Leoni. Design and Implementation of techniques for an adaptive management of workflows on Mobile Ad-hoc Network. [Progettazione ed implementazione di tecniche per la gestione adattiva dei workflow su reti mobili ad-hoc.] Master Thesis, Sapienza University of Rome, Italy, 2005.
- [T1] M. de Leoni. The structure of the web graph. [La struttura del grafo del web.] Bachelor Thesis, Sapienza University of Rome, Italy, 2002.