Curriculum vitae

PERSONAL INFORMATION

Andrea Marrella

Dipartimento di Ingegneria Informatica, Automatica e Gestionale (DIAG),

| Nationality Italian

QUALIFICATIONS

2023 – Present **National Scientific Habilitation as Full Professor (Professore Ordinario)**

Sector 09/H1, Sistemi di Elaborazione delle Informazioni

WORK EXPERIENCE

2022 – Present **Associate Professor (Professore Associato)**

Institution DIAG, Sapienza Università di Roma, Italy

2019 – 2022 **Tenured Assistant Professor (RTD-B)**

Institution DIAG, Sapienza Università di Roma, Italy

2013 – 2019 **Research Fellow (Assegnista di Ricerca)**

Institution DIAG, Sapienza Università di Roma, Italy

2006 – 2008 **Research Assistant (Collaboratore di Ricerca)**

Institution DIAG, Sapienza Università di Roma, Italy

EDUCATION (in Sapienza Università di Roma)

2009-2013 **PhD in Computer Science and Engineering**

Thesis SmartPM: Automatic Adaptation of Dynamic Processes at Run-Time

2011 **Abilitazione all'esercizio della professione di Ing. dell'Informazione**

Description Italian Professional Qualification to practice as a Computer Science Engineer

2005-2009 **MsC in Engineering in Computer Science (Laurea Specialistica in Ingegneria Informatica)**

Thesis User-Centered Design Methodologies. The Approach and the Case of the WORKPAD Project, Mark 110/110

2001-2005 **Bachelor Degree in Engineering in Computer Science (Laurea di Primo Livello in Ingegneria Informatica)**

Thesis Un Ambiente per la Generazione Automatica di Interfacce Utente (An Environment for the Automated Generation of Graphical User Interfaces), Mark 107/110

RESEARCH STAYS

Oct 2016 - Nov 2016 **University of Tartu, Estonia**
Role Visiting Researcher, Institute of Computer Science

Jun 2013 - Aug 2013 **Ryerson University, Toronto, Canada**
Role Visiting Researcher, Department of Computer Science

Jan 2012 - Jun 2012 **York University, Toronto, Canada**
Role Visiting Researcher, Department of Computer Science and Engineering

PROJECT GRANTS (SELECTED)
For the full list, see HERE)

2024-2026 **FOND-AIBPM – Foundations of AI-Augmented Business Process Management**
Role Principal Investigator
Grant value € 37.600
Funding Institution Sapienza Università di Roma, Italy

2023-2025 **MOTOWN – Smart Production Planning and Control for Manufacturing of Electric Vehicle Powertrain in Industry 4.0**
Role Co-Principal Investigator
Grant value € 310.374
Funding Institution PRIN 2022, Ministero dell'Università e della Ricerca (MUR)

2023-2024 **SIMCER – Simulating Production Planning of Manufacturing Companies with Process Mining**
Role Principal Investigator Grant value € 35.000
Funding Institution Ceramica Catalano Spa (Contratto conto terzi con Sapienza)

2021-2023 **DATACLOUD – Enabling the Big Data Pipeline Lifecycle on the Computing Continuum**
Role Unit Leader and Principal Investigator for Sapienza
Grant value Overall funding from EU: € 4.999.996,25. Financing to Sapienza: €433.750
Funding Institution Horizon 2020 European Union Programme

2021-2023 **Cicero-Net - La rete turistica dei luoghi di Cicerone**
Role Project Coordinator and Principal Investigator for Sapienza
Grant value Overall funding: € 151.442,16. Financing to Sapienza: € 28.565,95
Funding Institution Regione Lazio (DTC)

2015-2018 **NEPTIS – Soluzioni ICT per la fruizione e l'esplorazione aumentata di Beni Culturali** Role
OR-4 Leader Grant value
€ 202.897
Funding Institution Programma Operativo Nazionale Ricerca e Competitività

RESEARCH AREAS

Business Process Management, Process Mining, Process Adaptation, Process Resilience, Robotic Process Automation, Automated Planning and Reasoning in Artificial Intelligence, Data Quality, Human-Computer Interaction, Human-Robot Interaction.

RESEARCH ACCOMPLISHMENTS

Andrea Marrella is the Co-Leader of the Processes, Services and Software Engineering research group at DIAG, and a member of the Human-Computer Interaction group. Since 2010, Andrea Marrella has developed a research program aimed at investigating how to integrate the solid theoretical foundations provided by Automated Planning and Reasoning techniques in Artificial Intelligence (AI) with the practical needs required by Business Process Management (BPM), Robotic Process Automation (RPA) and Process Mining solutions.

Thanks to the recognized results of his research, he is considered as one of the pioneers of the concrete application of AI techniques to untangle complex challenges from the BPM domain, such as the automated synthesis of process models, the automated adaptation of running processes, the analysis of process compliance with defined policies and the optimal alignment of execution traces against their underlying (procedural or declarative) process models. In 2017 he was the keynote speaker at the Int. Workshop on BP Innovation with AI (BPAI 17) in the range of BPM 2017, where he presented his research on Automated Planning for Business Process Management. On the same topic, he was invited to give a tutorial at BPM 2021. Since 2018, he has been co-organizer of the International Workshop on AI for Business Process Management (now in its 8th edition, AI4BPM 2024), which is the main forum for researchers interested in understanding the challenges and opportunities of moving from programmatic approaches for BPM to emerging forms of AI-enabled BPM. In 2022, he contributed to the Manifesto on AI-Augmented Business Process Management, presenting the vision and research challenges to make business processes more adaptable, proactive, explainable, and context-sensitive through AI. In 2023, he was appointed to organize and chair the AAAI 2023 Bridge Program on AI and BPM. From 2022, he coordinates the working group on AI and BPM of the AIxIA community. Since 2021, he is the Local Principal Investigator of H2020 project DataCloud, which focuses on empowering process mining with AI to develop a new breed of Big Data pipeline discovery solutions. In 2024, he organizes the Dagstuhl seminar on Improving Trust between Humans and Software Robots in Robotic Process Automation.

KEYNOTE AND INVITED TALKS

[2023] Panel Speaker at AI Forum 2023, 5 April 2023, Milan, Italy, on "AI Augmented BPM".

[2018] Keynote Speaker at Int. Workshop on BP Innovation with AI (BPAI'17), 11 Sept. 2018, Barcelona, Spain. "What Automated Planning can do for Business Process Management".

[2016] Invited talk on "The use of AI Planning for BPM" at University of Tartu, Estonia.

[2014] Invited talks on "Adaptive Process Management in Cyber-Physical Domains" at Vienna University of Economics and Business (Austria) and ULM University, Germany.

[2013] Invited talk on "Synthesis of Process Models through AI Planning" at Ryerson University, Toronto, Canada.

[2012] Invited talks on "Adaptive Process Management through Situation Calculus, Indigolog and Automated Planning" at Univ. of Toronto, Canada, and York University, Toronto, Canada.

TUTORIALS

[2022] Tutorial on "Mastering Robotic Process Automation with Process Mining" at 20th Int. Conf. on Business Process Management (BPM 2022), Münster, Germany.

[2021] Tutorial on "Applications of Automated Planning for Business Process Management" at 19th Int. Conf. on Business Process Management (BPM 2021), Rome, Italy.

[2019] Tutorial on "IoT for BPMers. Challenges, Case Studies and Successful Applications" at 17th Int. Conf. on Business Process Management (BPM 2019), Vienna, Austria.

[2018] Tutorial on "Process Mining: from Zero to Hero" at 18th Int. Conf. on Product-Focused Software Process Improvement (PROFES 2017), Innsbruck, Austria.

IMPACT MEASURES

Since 2007, Andrea Marrella regularly publishes the results of his research in top-level international journals and conferences. He co-authored over 110scienti□c papers, including:

- 27 journal articles, including ACM Trans. on Intelligent Systems and Technology, ACM Comp. Surveys, IEEE Trans. on Data and Knowledge Engineering, Expert Systems with Applications;
- 3 authored book chapters on the topics of Process Adaptation and Resilience in cyber-physical domains and Robotic Process Automation;
- 81 workshop and conference papers, including several class A*/A conferences such as AAAI, KR, ICAPS, IJCAI, CAiSE, BPM, ICPM, CoopIS, ICSOC.

His Google Scholar pro□le reports on January 2024 an h-index of 29 and an i10-index of 55, with 312 citations (cf. https://scholar.google.com/citations?user=8zZvFawAAAAJ).

COMMUNITY SERVICE

Andrea Marrella serves/has served regularly as a senior and program committee member for high-ranked conferences in the Information Systems, AI and Human-Comp. Int□elds (AAAI, IJCAI, BPM, CAISE, etc.). For the full list see HERE. In the last 5 years, he acted/is acting as:

Associate Editor (Editorial Board Member)

- ACM Computing Surveys (CSUR)
- ACM Journal on Data and Information Quality (JDIQ)

Guest Associate Editor

- Data & Knowledge Engineering Journal (DKE), Special Issue on Augmented Business Process Management, Elsevier, in progress
- Progress in Art□cial Intelligence (PRAI), Special Issue on Art□cial Intelligence for Business Process Management, Springer, 2022
- Journal on Data Semantics (JODS), Special Issue on Art□cial Intelligence for Business Process Management, Volume 10, Springer, 2020

General Chair

- 5th International Conference on Process Mining (ICPM 2023)

Program Chair

- 22nd International Conference on Business Process Management (BPM 2024)
- AAAI 2023 Bridge Program on AI and BPM
- Robotic Process Automation forum at the 20th edition of the BPM conf. (BPM 2022)
- Italian Forum on BPM (ITBPM 2021)
- 2019, 2020, 2022, 2023 and 2024 editions of Int. Workshop on AI for BPM (AI4BPM)

General Workshop Chair

- 19th International Conference on Business Process Management (BPM 2021)

Associate Chair

- 17th Int. Conference on Advanced Visual Interfaces (AVI 2024)
- 19th IFIP TC13 Int. Conference on Human-Computer Interaction (INTERACT 2023)
- 16th Int. Conference on Advanced Visual Interfaces (AVI 2022)
- 18th IFIP TC13 Int. Conference on Human-Computer Interaction (INTERACT 2021)
- 15th Int. Conference on Advanced Visual Interfaces (AVI 2020)

Organizing Chair

- 31st Int. Conference on Advanced Information Systems Engineering (CAiSE 2019)

Poster & Demo Chair

- 14th Int. Conference on Advanced Visual Interfaces (AVI 2018)

AWARDS

2023 My former PhD Student Simone Agostinelli won the Best Dissertation Award at 21st Int. Conf. on Business Process Management (BPM 2023), for his PhD thesis on Synthesizing Software Robots from UI Logs in Robotic Process Automation.

2019 Best Forum Paper Award at CAiSE 2019 (GII-GRIN/Core Class A) for the paper Achieving GDPR Compliance of BPMN Process Models.

2017 Best Paper Award at CAiSE 2017 (GII-GRIN/Core Class A) for the paper Multi-party Business Process Resilience By-Design: A Data-centric Perspective.

INSTITUTIONAL RESPONSIBILITIES

2023 – present Member of the University PhD Programme Commission, Sapienza Università di Roma.

2019 – present Member of the Board of Lecturers of the PhD Program in Computer Science and Engineering, Sapienza Università di Roma

2020 – 2023 Secretary of the Board of Lecturers of the PhD Program in Computer Science and Engineering, DIAG, Sapienza Università di Roma

2019 – 2022 Member of the Faculty Directorate (Giunta di Facoltà), Faculty of Information Engineering, Informatics, and Statistics, Sapienza Università di Roma

2019 – 2022 Member of the Department Directorate (Giunta di Dipartimento), DIAG, Sapienza

2019 – 2020 Member of the Admission Committee for the Bachelor Degree in Computer Science and Engineering, Sapienza Università di Roma

TEACHING EXPERIENCE

Andrea Marrella has a wide teaching experience. Within Sapienza, he is the teacher of the undergraduate course of Fondamenti di Informatica (ING/INF 05 – 6 CFU) since 2019, of the graduate course of Process Management and Mining (ING/INF 05 – 6 CFU) since 2018, and of the graduate course of Planning and Reasoning (ING/INF 05 – 6 CFU). Over the years, he acted as teacher of the graduate courses of Artificial Intelligence and Machine Learning (ING/INF 05 – 3 CFU), Enterprise Information Systems (ING/INF 05 – 6 CFU) and of the graduate course of Interaction Design (ING/INF 05 – 6 CFU) in 2017, and of the undergraduate course of Databases (ING/INF 05 – 3 CFU) in 2014. In Fall 2017, he taught as main lecturer the PhD course of Process Mining (3 CFU).

MSc & BSc SUPERVISION

Since 2010, within DIAG, Andrea Marrella supervised and co-supervised:

- 54 M.sc. student and 27 B.sc. students in Engineering in Management Science on the topics of BPM, process mining, data quality;
- 32 M.sc. students and 2 B.sc. students in Engineering in Computer Science on the topics of learnability in HCI, RPA, process mining, repair, adaptation, and resilience.
- 2 M.sc. students in Design, Multimedia and Visual Communication, on the topics of gamification, adaptive storytelling and word clouds design and generation.
- 2 M.sc theses in Computer Science for Software Engineering at the University of Tartu (Estonia) on the topics of process discovery and adaptation.

PHD SUPERVISION

Since 2017, he is (co-)supervising/has (co-)supervised 7 PhD Students at DIAG:

- Simone Agostinelli (PhD in May 2022) on mastering RPA via process mining techniques;
- Lauren S. Ferro (PhD in May 2022) on investigating human factors in cybersecurity;
- Dario Benvenuti (3rd year PhD student) on discovering and analyzing Big Data pipelines trough process mining in the range of the H2020 DataCloud project;
- Francesca De Luzi (3rd year PhD student) on developing novel IoT-aware BPM solutions.
- Giacomo Acitelli (2nd year PhD student) on developing scalable and flexible conformance checking solutions in process mining using automated planning in AI.
- Mattia Macrì (2nd year PhD student) on exploring new data quality metrics in process mining.
- Angelo Casciani (1st year PhD student) on defining foundations for AI-Augmented BPM.

20 SELECTED PUBLICATIONS

For the comprehensive list of publications please see https://www.diag.uniroma1.it/marrella/publications_by_type.html, or DBLP (https://dblp.org/pid/17/1681.html), or Google Scholar (https://scholar.google.com/citations?user=8zZvFawAAAAJ&hl).

1 F. M. Maggi, A. Marrella, F. Patrizi, V. Skydanienko: Data-Aware Declarative Process Mining with SAT, ACM Trans. on Intelligent Systems and Tech. (2023)

2 S. Agostinelli, F. Chiariello, F. M. Maggi, A. Marrella, F. Patrizi: Process Mining Meets Model Learning: Discovering Deterministic Finite State Automata from Event Logs for Business Process Analysis. Information Systems, Volume 114, Elsevier (2023)

3 M. Dumas, F. Fournier, L. Limonad, A. Marrella, M. Montali, J. Rehse et al.: AI-Augmented Business Process Management Systems: A Research Manifesto. ACM Trans. on Management Information Systems, to appear (2023)

4 A. Marrella, L. Wang, L. Iocchi, D. Nardi: A Methodology to Design and Evaluate HRI Teaming Tasks in Robotic Competitions. ACM Trans. on Human-Robot Int., pp. 1-22 (2022)

5 G. Acitelli, M. Angelini, S. Bonomi, F. M. Maggi, A. Marrella, A. Palma: Context-Aware Trace Alignment with Automated Planning. 4th Int. Conf. on Process Mining, ICPM'22, IEEE (2022)

6 S. Agostinelli, M. Lupia, A. Marrella, M. Mecella: Reactive synthesis of software robots in RPA from user interface logs. Computers in Industry 142, Elsevier (2022)

7 G. Desolda, L. S. Ferro, A. Marrella, T. Catarci, M. F. Costabile: Human Factors in Phishing Attacks: A Systematic Literature Review. ACM Comp. Surveys 54(8), pp. 173:1-173:35 (2022)

8 G. Bergami, F. M. Maggi, A. Marrella, M. Montali: Aligning Data-Aware Declarative Process Models and Event Logs. 19th Int. Conf. on Business Process Management, BPM 2021 (2021)

9 S. Agostinelli, F. Leotta, A. Marrella: Interactive Segmentation of User Interface Logs. 19th Int. Conf. on Service-Oriented Comp., ICSOC 2021, 65-80, Springer (2021)

10 A. Marrella, M. Mecella, B. Pernici, P. Plebani: A design-time data-centric maturity model for assessing resilience in multi-party business processes. Inf. Syst. 86, 62-78, Elsevier (2019)

11 A. Marrella: Automated Planning for Business Process Management. Journal on Data Semantics 8(2), pp. 79-98, Springer (2019)

12 S. Steinau, A. Marrella, K. Andrews, F. Leotta, M. Mecella, M. Reichert: DALEC: a framework for the systematic evaluation of data-centric approaches to process management software. Software & Systems Modeling 18, pp. 2679–2716, Springer (2019)

Luogo e data Roma 06/02/2024

Firma

Prof. Andrea MARRELLA

(firma autografa omessa ai sensi dell'art. 3 del D.lgs. n. 39/1993)