

Alessandro Pellegrini

Curriculum Vitæ

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Personal Information

first name Alessandro
last name Pellegrini
place/date of birth Roma (Italy), Wednesday 7th January, 1987
nationality Italian
Abilitazione ☐ 01/B1—II fascia (abilitato il 23/11/2020)
Scientifica Nazionale ☐ 09/H1—II fascia (abilitato il 09/09/2019)
☐ 09/H1—I fascia (abilitato il 17/12/2023)

Academic Positions

March 2025 **Associate Professor**, *Tor Vergata University of Rome*
present
May 2022 **Member of the Doctoral Board**, *Tor Vergata University of Rome*, PhD Program
present in Computer Science, Control and Geoinformation.
March 2022 **Tenure-Track Assistant Professor (RTDb)**, *Tor Vergata University of Rome*
February 2025

Education

November 2010 **PhD Course**, *Sapienza, University of Rome*, Judgment: *Top 5% (Outstanding)*
September 2014 Thesis Title: *Techniques for Transparent Parallelization of Discrete Event Simulation Models*.
December 2010 **Professional Qualification as Information Engineer**, Professional license obtained
by passing the Italian State Exam
February 2009 **Master's Degree in Computer Engineering**, *Sapienza, University of Rome*, Mark:
September 2010 *110/110*
Thesis Title: *Autonomic State Saving of Simulation Objects in Optimistic Simulation Systems*.
September 2005 **Bachelor's Degree in Computer Engineering**, *Sapienza, University of Rome*,
February 2009 Mark: *105/110*
Thesis Title: *Efficient and Transparent Tracking of Dynamic Memory Updates with Arbitrary Granularity in Optimistic Simulation Architectures*.
September 2000 **Classical Lyceum Diploma**, *Pontificio Istituto Apollinare*, Rome, Italy,
July 2005 Mark: *100/100*

Research Activities

Coordination, Organization and Participation in Research Groups

Coordinator, *HPCS Lab*, High Performance Computing & Simulation Group
Research Group at Tor Vergata University of Rome.

Member, *NAM Lab*, National Laboratory of Network Assessment, Assurance and Monitoring
CNIT Research Laboratory.

- April 2024 **Associated Researcher**, *IASI*, National Research Council, Rome, Italy
present Associate with a collaboration appointment at the “Antonio Ruberti” Institute of Systems Analysis and Computer Science.
- March 2020 **Research Fellow**, *IASI*, National Research Council, Rome, Italy
- February 2022 Research Project: Italian National Project of Interest (PRIN) SISMA, Grant Agreement #201752ENYB.
- March 2019 **Research Fellow**, *DIAG*, Sapienza, University of Rome, Rome, Italy
- February 2020 Research Project: *Transparently Transitioning to Heterogeneous Exascale Computing Systems*.
- September 2018 **Researcher**, *ISSNOVA—Institute for Sustainable Society and Innovation*
May 2019 Research project: SJU H2020 EU Project–EvoATM, Grant Agreement #783189.
- December 2017 **Research Fellow**, *DIAG*, Sapienza, University of Rome, Rome, Italy
- November 2018 Research Project: *Assistive Methodologies for IT Consolidation and Modernization*.
- September 2016 **Researcher**, *DGSIA—Direzione generale per i sistemi informativi automatizzati*,
April 2017 *Italian Ministry of Justice*, Rome, Italy
Research Project: Assessment of the National Telematic Criminal Trial System
- September 2015 **Visiting Researcher**, *Barcelona Supercomputing Center (BSC)*, Barcelona, Spain
October 2015 Visit funded by the “Severo Ochoa” Excellence Program.
- June 2014 **Researcher**, *IRIANC—International Research Institute for Autonomic Network*
May 2016 *Computing*, Munich, Germany
Researcher in the EU FP7 Project–Panacea, Grant Agreement #610764.
- April 2014 **Researcher**, *CINFAL—Consorzio Interuniversitario Nazionale per la Fisica delle*
February 2015 *Atmosfere e delle Idrosfere*, Tolentino (MC), Italy
Researcher for the project SIGMA (Italian PON R&C), to develop an integrated cloud system for the acquisition and management of data coming from heterogeneous sensor networks.
- December 2014 **Research Fellow**, *DIAG*, Sapienza, University of Rome, Rome, Italy
- November 2015 Research Project: *Design and Development of Wait-Free Algorithms for Synchronization/Coordination in Multi-core Environments*.

Summary of Research Results (updated on April 2025)

Publication Type	Count	Indexing	Since	To
Journal Articles	26	DBLP/Scopus/WoS	2012	2024
International Conferences/Workshops	86	DBLP/Scopus/WoS	2009	2025
Book Chapters	2	DBLP	2014	2019
Books	1	OPAC SBN	2015	2015

Bibliometric Index	Google Scholar	Scopus	WoS
Total Citations	1240	761	365
Average Citations per Publication	11.07	7.18	4.10
h-index	20	15	10
i10-index	43	29	12

The following table summarises the author's position according to main databanks.

	Scopus	Web of Science
First	22%	22%
Last	19%	15%
Co-Author	57%	—
Corresponding	—	26%
Single	2%	—

Teaching Activities

- 2020 – present **Computer Architecture**, *Tor Vergata University of Rome*
Bachelor's Degree in Computer Engineering
- 2018 – present **Databases**, *Tor Vergata University of Rome*
Bachelor's Degree in Computer Engineering
- 2021 – 2024 **Network and System Defence**, *Tor Vergata University of Rome*
Master's Degree in ICT and Internet Engineering
- 2020 – 2022 **Fundamentals of Computer Science**, *Tor Vergata University of Rome*
Master of Science in Business Administration
- 2019 – 2021 **Algorithm Engineering**, *Tor Vergata University of Rome*
Bachelor's Degree in Computer Engineering
- May 2018 **Data Management for Big Data: Introduction**, *Luiss Business School*
Master in Big Data Management
- 2017 – 2020 **Advanced Operating Systems and Virtualization**, *Sapienza, University of Rome*
Master's Degrees in Computer Engineering and Cyber Security.
- October 2014 **Distributed Simulation**, *CINI—Consorzio Interuniversitario Nazionale per l'Informatica*
November 2014
DISPLAY-FARM training project by the Public/Private COSMIC Laboratory.
- 2012 – 2013 **Computer Architecture**, *Sapienza, University of Rome*, Teaching Assistant
Bachelor's Degree in Computer Engineering.
- 2011 – 2012 **Operating Systems**, *Sapienza, University of Rome*, Teaching Assistant
Bachelor's Degree in Computer Engineering.

National/International Research Projects

- November 2025
present **SCOPE**, *Scalable, Cyber-secure and Optimized Processing Environments*, University Scientific Research Call 2024, **Principal Investigator**
The goal of the SCOPE research project is to develop advanced methodologies for managing computational resources in decentralized, parallel, and secure manners within complex distributed environments, including cloud and edge computing. It aims to enhance scalability, adaptability, reliability, and cybersecurity, integrating model-driven engineering and advanced numerical methods for optimized resource orchestration, performance efficiency, and robust security in heterogeneous, large-scale high-performance computing scenarios characteristic of exascale computing infrastructures
- January 2025
present **DECyDO**, *aDaptive and Evolutive Cyber Defence of a drOne team*, PNRM 2022 (Ministry of Defence), **Head of the Tor Vergata Unit**
The problem tackled by the project is to ensure the cyber-defence of a team of drones in C4ISTAR operations and highly contested environments. The proposed solutions envisage an adaptive/evolutionary cyber-defence paradigm, with technologies for cyber and hostile risk characterisation (Digital Twin, Machine Learning, Signal Processing), and for mission mitigation and re-planning in attack scenarios (Multi-Agent Systems, Evolutionary Algorithms, Cognitive Radio).
- November 2023
present **DOMAIN**, *Taming Heterogeneous Computing Complexity with Full-Stack Governance of Domain-Specific Languages*, PRIN 2022, CUP E53D23008200006, **Principal Investigator**
The project addresses the increasing complexity of programming heterogeneous computing systems, which integrate general-purpose processors and specialized accelerators, crucial in transitioning from petascale to exascale computing. It proposes a comprehensive revision of the software stack by developing intuitive, high-level abstractions and Domain-Specific Languages (DSLs) tailored to various application domains. These DSLs transparently exploit heterogeneous architectures, facilitated by advanced compilers, runtime environments, and operating systems featuring self-tuning and optimization capabilities. Ultimately, the project aims to empower domain experts to efficiently program complex systems, maximizing performance while abstracting away hardware intricacies.
- March 2020
February 2022 **SISMA**, *Solutions for Engineering Microservice Architectures*, PRIN 2017, Grant Agreement #201752ENYB, **Researcher**
The SISMA project aims at enhancing test case design methodologies for distributed software systems following the microservices paradigm. It investigates aggregation strategies for test cases, algorithms for test selection and prioritisation, and the integration of functional and non-functional aspects to systematically explore alternative operational scenarios. The project's structured and reusable approach to designing test bundles seeks to improve the overall quality and automation of test suites. Additionally, workflow-based test planning is proposed to facilitate the incremental creation of end-to-end tests and to enable dynamic governance of regression testing activities.
- February 2019
January 2022 **SPARTA**, *Strategic Programs for Advanced Research and Technology in Europe*, EH H2020 Project, Grant Agreement #830892, **Researcher**
The EU-funded SPARTA project addresses cybersecurity challenges by establishing interdisciplinary collaborations that integrate scientific excellence, technological innovation, and insights from social sciences. Through transformative capability building, ambitious demonstration cases, innovative governance structures, and active community involvement, SPARTA aims to redefine cybersecurity research in Europe, fostering internationally recognised centres of expertise across multiple strategic domains.
- January 2018
December 2019 **EvoATM**, *Evolutionary Air Traffic Management*, EU H2020 SJU Project, Grant Agreement #783189, **Researcher**
The goal of the EvoATM project is to model ATM system in the Free Route scenario, combining an agent based simulation paradigm with Evolutionary Computing optimization techniques to understand the influence of ATM components and parameters on the behaviour at whole system performances level. By using quantitative indicators, EvoATM has opened the way to more efficient change impact assessment, supporting design and strategic thinking in ATM evolution.

- June 2014 **PANACEA**, *Proactive Autonomic Management of Cloud Resources*, EU FP7 Project,
 May 2016 Grant Agreement #610764, **Researcher**
 The main objective of the PANACEA project is to provide Proactive Autonomic Management of Cloud Resources, based on Machine Learning, as a remedy to the exponentially growing Cloud complexity. Main targets are: i) proactive autonomic management of Cloud resources, ii) proactive software migration within the Cloud(s), iii) efficient usage of Cloud resources, iv) monitoring, controlling, and proactively managing applications' execution.
- April 2014 **SIGMA**, *Sistema Integrato di sensori in ambiente Cloud per la Gestione Multirischio*
 February 2015 *Avanzata*, National Italian Project, Grant Agreement #PON01_00683, **Researcher**
 The Integrated Sensors System in Cloud Environments for Advanced Multirisk Management (SIGMA) is a multi-layered architecture for acquiring, integrating, and elaborating heterogeneous data coming from differentiated sensor networks. Its goal is to enhance (both environmental and factory) monitoring and control systems to provide data useful for the prevention of risk situations.

Awards and Honours

- 2025 **Test of Time Award**, 39th ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (PADS)
 Award for the paper *Transparently Mixing Undo Logs and Software Reversibility for State Recovery in Optimistic PDES*.
- 2023 **Best Paper Award**, 28th IEEE/ACM International Symposium on Distributed Simulation and Real Time Applications (DS-RT)
 Award for the paper *Practical Tie Breaking for Parallel/Distributed Simulations*.
- 2022 **Best Paper Award**, 27th IEEE/ACM International Symposium on Distributed Simulation and Real Time Applications (DS-RT)
 Award for the paper *Inferring Relations Among Test Programs in Microservices Applications*.
- 2021 **Best Paper Award**, 15th IEEE International Conference on Service Oriented Systems Engineering (SOSE)
 Award for the paper *Inferring Relations Among Test Programs in Microservices Applications*.
- 2018 **HiPEAC Technology Transfer Award**, HiPEAC—European Network on High Performance Embedded Architecture and Compilation
 The *Transparent HPC Simulation on Heterogeneous Distributed Architectures* project has received the HiPEAC Technology Transfer Award, a prize given by an internal HiPEAC committee to initiatives that successfully transfer the results of academic research to industrial applications.
- 2016 **Best Paper Award**, 20th International Symposium on Distributed Simulation and Real Time Applications (DS-RT)
 Award for the paper *A Lock-Free O(1) Event Pool and its Application to Share-Everything PDES Platforms*.
- 2015 **Best PhD Thesis of the year**, Sapienza Università Editrice
 The Sapienza University of Rome Doctoral Thesis Prize is awarded annually to the ten best theses defended at the university, selected on the basis of scientific quality, methodological rigour and results obtained. The winning theses are published in the international series *Studi e Ricerche*.
- 2012 **Best Paper Award**, 5th International ICST Conference on Simulation Tools and Techniques (SIMUTools)
 Award for the paper *Cache-Aware Memory Manager for Optimistic Simulations*.

Memberships and Societies

- October 2018 **HiPEAC**, *European Network on High Performance and Embedded Architecture and Compilation*, Elected Member
present
November 2011 **ACM**, *Association for Computing Machinery*, Member
present
March 2012 **IEEE**, *Institute of Electrical and Electronics Engineers*, Member
March 2021

International Scientific Activity

Steering Committees

- 2022 – present **ACM SIGSIM PADS**, *ACM SIGSIM Conference on Principles of Advanced Discrete Simulation*, Steering Committee Member
2023 **PECS**, *Workshop on Performance and Energy-efficiency in Concurrent Systems*, Steering Committee Chair

Editorial Boards

- 2022 – present **ACM TOMACS**, *Editorial Board member*, Associate Editor
2025 **ACM TOMACS**, *Guest Editor for the PADS 2024 Special Issue*
2018 – 2022 **ACM TOMACS**, *Editorial Board member*, Reproducibility Board
2019 **ACM TOMACS**, *Guest Editor for the PADS 2018 Special Issue*

Chairmanship

- 2024 **Program Chair**, *ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (PADS)*
2023 **PhD Colloquium Chair**, *ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (PADS)*
2022 **General Chair**, *ACM Workshop on Performance and Energy-efficiency in Concurrent Systems (PECS)*
2022 **Reproducibility Co-Chair**, *ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (PADS)*
2021 **Workshop Co-Chair**, *ACM/SPEC International Conference on Performance Engineering (ICPE)*
2021 **Reproducibility Co-Chair**, *ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (PADS)*
2020 **Reproducibility Co-Chair**, *ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (PADS)*
2019 **Reproducibility Co-Chair**, *ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (PADS)*
2018 **General Co-Chair**, *ACM SIGSIM Conference on Principles of Advanced Discrete Simulation (PADS)*
2017 **Track Co-Chair**, *“Environment and Sustainability Applications” Track*, Winter Simulation Conference (WSC)
2016 **Program Co-Chair**, *IEEE International Symposium on Network Computing and Applications (NCA)*
2016 **Financial Chair**, *IEEE International Symposium on Network Computing and Applications (NCA)*

2015 **Financial Chair**, *IEEE International Symposium on Network Computing and Applications (NCA)*

Review Activity for Journals

Journal	Reviews
ACM Transactions on Modeling and Computer Simulation	46
IEEE Access	9
Software: Practice and Experience	6
Concurrency and Computation: Practice and Experience	6
Journal of Simulation	3
Journal of Systems and Software	3
Simulation Modelling Practice and Theory	3
IEEE Transactions on Computers	2
Scientific Programming	2
ACM Transactions on Privacy and Security	1
Applied Sciences	1
Electronics	1
IEEE Transactions on Emerging Topics in Computing	1
IEEE Transactions on Parallel and Distributed Systems	1
Journal of the ACM	1
New Generation Computing	1
Security and Communication Networks	1

Conference Program Committees

- 2017 – present **ACM SIGSIM PADS**, *PC Member of the ACM SIGSIM Conference on Principles of Advanced Discrete Simulation*
- 2017 – present **WSC**, *PC Member of the Winter Simulation Conference*
- 2015 – present **IEEE/ACM DS-RT**, *PC Member of the IEEE/ACM International Symposium on Distributed Simulation and Real Time Applications*
- 2019 – present **SIMUL**, *PC Member of the International Conference on Advances in System Simulation*
- 2019 – present **CLOUD COMPUTING**, *PC Member of the International Conference on Cloud Computing, GRIDs, and Virtualization*
- 2014 – 2022 **SIMULTECH**, *PC Member of the Workshop on Dependable Parallel, Distributed and Network-Centric Systems*
- 2020 – 2022 **ICPE**, *PC Member of the ACM/SPEC International Conference on Performance Engineering, Reproducibility Board*
- 2019 **Euro-Par**, *PC Member of the International European Conference on Parallel and Distributed Computing, Springer-Verlag*
- 2019 **AHCP**, *PC Member of the International Workshop on Autonomic High Performance Computing—co-located with the International Conference on High Performance Computing & Application Simulation (HPCS)*
- 2015 – 2017 **IEEE NCA**, *PC Member of the IEEE International Symposium on Network Computing and Applications*
- 2015 – 2017 **IEEE DPDNS**, *PC Member of the Workshop on Dependable Parallel, Distributed and Network-Centric Systems—co-located with the IEEE International Parallel & Distributed Processing Symposium (IPDPS)*

Student Supervision

PhD Students

Student	Graduation	Thesis topic
Simone Bauco	2027 (expected)	Model-Driven Engineering
Matteo Ciccaglione	2026 (expected)	Generative Grammars
Pierciro Caliendo	2026 (expected)	Fuzzing
Xiaorui Du	2025 (expected)	Distributed Data Analytics (cotutorship with Alois Knoll, Technical University of Munich, Germany)
Adriano Pimpini	2024	Simulation of Spiking Neural Networks
Andrea Piccione	2023	High-performance Distributed Simulation

Master's Students

I have been thesis advisor or co-advisor of the following students:

- Simone Bauco, "*Una metodologia Model-Driven Engineering per lo sviluppo di Domain-Specific Languages*", October 2024.
- Mattia Antonangeli, "*4SweepTron: B5G Portable Spectrum Monitoring based on Micro-Service Architecture*". Co-supervised with Prof. Luca Chiaraviglio, April 2024.
- Adrian Petru Baba, "*Miglioramento dell'accuratezza e dell'efficienza energetica delle reti neurali a impulso tramite tempistiche accurate: un caso di studio*", April 2024.
- Danio Dell'Orco, "*Unmasking Android Malware: A Comprehensive Study of Evasion Techniques and Detection Strategies*", October 2023.
- Matteo Ciccaglione, "*Metamorphic transformations: safeguarding Software IP with Generative Grammars*", October 2023.
- Andrea Pepe, "*Engine Metamorfico per la Protezione della Proprietà Intellettuale*", October 2023.
- Pierciro Caliendo, "*Protezione della proprietà intellettuale mediante offuscamento basato su virtualizzazione*", April 2023.
- Simone Tiberi, "*Meccanismo d'autorizzazione per accedere ad oggetti critici del kernel basato sul percorso d'esecuzione*". Co-supervised with Prof. Francesco Quaglia, April 2023.
- Alessio Izzillo, "*Graph and Flow-based Distributed Detection and Mitigation of Botnet Attacks*", January 2021.
- Adriano Pimpini, "*High Performance Simulation of Spiking Neural Networks*", October 2020.
- Lorenzo Altamura, "*Asymmetric Runtime Environments for Increased-Performance Speculative PDES*". Co-supervised with Dr. Stefano Conoci, January 2020.
- Umberto Mazziotta, "*Parallel Priorities: Optimizing Priority Queues for NUMA Machines*". Co-supervised with Dr. Romolo Marotta, January 2020.
- Serena Ferracci, "*Detecting Cache-based Side Channel Attacks using Hardware Performance Counters*". Co-supervised with Dr. Stefano Carnà, 2019.
- Andrea Piccione, "*An Agent-Based Simulation API for Speculative PDES Runtime Environments*", 2019.
- Matteo Principe, "*Transparent Distributed Cross-State Synchronization in Optimistic Parallel Discrete Event Simulation*". Co-supervised with Prof. Francesco Quaglia, 2018.

- Matteo Principe, "*Transparent Distributed Cross-State Synchronization in Optimistic Parallel Discrete Event Simulation*". Co-supervised with Prof. Francesco Quaglia, 2018.
- Emiliano Silvestri, "*Fine-Grain Time-Shared Execution of In-Memory Transactions*". Co-supervised with Prof. Francesco Quaglia, 2017.
- Tommaso Tocci, "*ORCHESTRA: An Asynchronous Wait-Free Distributed GVT Algorithm*". Co-supervised with Prof. Bruno Ciciani, 2017.
- Romolo Marotta, "*A Lock-Free $O(1)$ Priority Queue for Pending Event Set Management*". Co-supervised with Prof. Francesco Quaglia, 2017.
- Nazzareno Marziale, "*Dynamic Clustering of Simulation Objects in Speculative Parallel Simulation Systems*". Co-supervised with Prof. Francesco Quaglia, 2016.
- Francesco Nobilia, "*Runtime Management of Simulation Objects Cross-State Dependencies in NUMA-oriented Parallel Simulation Platforms*". Co-supervised with Prof. Francesco Quaglia, 2016.
- Mauro Ianni, "*Transactional Memory Based Speculative Parallel Execution of Discrete Event Applications*". Co-supervised with Prof. Francesco Quaglia, 2015.
- Simone Economo, "*Lightweight approximate virtual page access tracing of multi-threaded applications via static binary instrumentation*". Co-supervised with Prof. Francesco Quaglia, 2015.
- Andrea La Rizza, "*Elastic cloud resources provisioning for life insurance undertaking applications*". Co-supervised with Prof. Bruno Ciciani, 2015.
- Luca Forte, "*Proactive Workload Management in Cloud Environments in the Presence of Software Aging*". Co-supervised with Prof. Bruno Ciciani, 2015.
- Davide Cingolani, "*Application Transparent and Efficient Mixed State-Saving in Speculative Simulation Platforms*". Co-supervised with Prof. Francesco Quaglia, 2014.
- Pietro Stroia, "*Securing the IDT and the System Call Table from malicious LKMs*". Co-supervised with Prof. Francesco Quaglia, 2012.
- Alice Porfirio, "*Progettazione e implementazione di un meccanismo di rollback parziale per memorie software transazionali*". Co-supervised with Prof. Francesco Quaglia, 2011.
- Gionata Cerasuolo, "*Cache-Aware Memory Manager for Optimistic Simulations*". Co-supervised with Prof. Francesco Quaglia, 2011.

Technology Transfer Activities

- June 2024 **Patent Application Filed**, *Tor Vergata University of Rome*, Application #102024000013288, Apparatus for Monitoring and Passive Production of Endogenous Gas from Abandoned Wells or Soil.
- March 2016 **Co-Founder**, *Lockless S.r.l.*, University Startup of Sapienza and Tor Vergata Universities

Consulting

- February 2022 **Fleet Support Srl**
- December 2023 *Contract for third-party services*: porting of applications to the Cloud, design of a DevOps development system, implementation of an ETL data ingestion system, securitisation of information systems.
- December 2020 **Business Integration Partners S.p.A**
- February 2021 *with Lockless S.r.l.*: securing a Kubernetes environment for *Leonardo S.p.A.*.

June 2019	Business Integration Partners S.p.A
August 2019	<i>with Lockless S.r.l.</i> : High-level Design for Trans Austria Gasleitung GmbH to enhance the security level of the company's IT infrastructure.
August 2017	Ministero della Giustizia—DGSIA (Direzione Generale per i Sistemi Informativi Automatizzati) , <i>with CRUI—Conferenza dei Rettori delle Università Italiane</i>
December 2017	Analysis and evaluation of software systems to support the information system of criminal trials.
September 2016	Ministero della Giustizia—DGSIA (Direzione Generale per i Sistemi Informativi Automatizzati) , <i>with CRUI—Conferenza dei Rettori delle Università Italiane</i>
December 2016	Analysis and evaluation of software systems to support the information system of criminal trials.
February 2012	IES—Ingegneria Elettronica Sistemi s.r.l
October 2012	Project of a redundancy system for the HELabor microcontroller, and reliability assessment.
July 2011	Poste Italiane S.p.A
September 2011	Assessment and Capacity Analysis of the Business Main Core Infrastructure.

Languages

Italian	Mother Tongue	
English	Proficient (C2)	CAE – Cambridge University (2004). Mark: C FCE – Cambridge University (2003). Mark: B PET – Cambridge University (2002). Mark: Passed KET – Cambridge University (2001). Mark: Passed with Merit
Spanish	Independent (B2)	Diploma Básico de Español – Cervantes (2002). Mark: 81/100
French	Independent (B1)	DEL F 1 – St. Louis de France (2002). Mark: 12,35/20

Attachments

- 1 List of Publications
- 2 International Conferences/Workshops

Attachment 1: List of Publications

Books

- [1] Alessandro Pellegrini. *Parallelization of Discrete Event Simulation Models*. Studi e Ricerche. Sapienza Università Editrice, November 2015.

Book Chapters

- [2] Diego Rughetti, Pierangelo Di Sanzo, Alessandro Pellegrini, Bruno Ciciani, and Francesco Quaglia. Tuning the level of concurrency in software transactional memory: An overview of recent analytical, machine learning and mixed approaches. In Rachid Guerraoui and Paolo Romano, editors, *Transactional Memory. Foundations, Algorithms, Tools, and Applications*, volume 8913 of *Lecture Notes in Computer Science*, pages 395–417. Springer International Publishing, 2015.
- [3] Francesco Quaglia, Alessandro Pellegrini, and Roberto Vitali. Reshuffling PDES platforms for multi-/many-core machines: a perspective with focus on load sharing. In Daniele Gianni, Andrea D'Ambrogio, and Andreas Tolk, editors, *Modeling and Simulation-based Systems Engineering Handbook*, pages 203–232. Crc Pr I Llc, December 2014.

Journal Articles

- [4] Romolo Marotta, Mauro Ianni, Alessandro Pellegrini, and Francesco Quaglia. A conflict-resilient lock-free linearizable calendar queue. *ACM Transactions on Parallel Computing*, 11, March 2024.
- [5] Stefano Carnà, Romolo Marotta, Alessandro Pellegrini, and Francesco Quaglia. Strategies and software support for the management of hardware performance counters. *Software: Practice and Experience*, 53:1928–1957, July 2023.
- [6] Emanuele De Angelis, Guglielmo De Angelis, Alessandro Pellegrini, and Maurizio Proietti. What makes test programs similar in microservices applications? *Journal of Systems and Software*, 201:111674, January 2023.
- [7] Alessandro Pellegrini, Pierangelo Di Sanzo, Andrea Piccione, and Francesco Quaglia. Design and implementation of a fully-transparent partial abort support for software transactional memory. *Software: Practice and Experience*, 52:2456–2475, June 2022.
- [8] Stefano Carnà, Serena Ferracci, Francesco Quaglia, and Alessandro Pellegrini. Fight hardware with hardware: System-wide detection and mitigation of side-channel attacks using performance counters. *Digital Threats: Research and Practice*, 2022.
- [9] Romolo Marotta, Mauro Ianni, Alessandro Pellegrini, and Francesco Quaglia. Nbbs: A non-blocking buddy system for multi-core machines. *Transactions on Computers*, 71:599–612, 2022.
- [10] Emiliano Silvestri, Alessandro Pellegrini, Pierangelo Di Sanzo, and Francesco Quaglia. Effective runtime management of tasks and priorities in gnu openmp applications. *Transactions on Computers*, 71:2632–2645, October 2022.
- [11] Gabriella Gigante, Roberto Palumbo, Domenico Pascarella, Alessandro Pellegrini, Gabriella Duca, Miquel Àngel Piera, and Juan José Ramos. Support to design for air traffic management: An approach with agent-based modelling and evolutionary search. *International Journal of Aviation, Aeronautics, and Aerospace*, 8(1), 2021.
- [12] Pierangelo Di Sanzo, Dimiter R. Avresky, and Alessandro Pellegrini. Autonomic rejuvenation of cloud applications as a countermeasure to software anomalies. *Software: Practice and Experience*, 51(1):46–71, January 2021.

- [13] Stefano Conoci, Pierangelo Di Sanzo, Alessandro Pellegrini, Bruno Ciciani, and Francesco Quaglia. On power capping and performance optimization of multi-threaded applications. *Concurrency and Computation: Practice and Experience*, 33(11), January 2021.
- [14] Alessandro Pellegrini. Replication of computational results report for “green simulation with database monte carlo”. *ACM Transactions on Modeling and Computer Simulation*, 31(1), 12 2020.
- [15] Alessandro Pellegrini, Pierangelo Di Sanzo, Beatrice Bevilacqua, Gabriella Duca, Domenico Pascarella, Roberto Palumbo, Juan José Ramos, Miquel Àngel Piera, and Gabriella Gigante. Simulation-based evolutionary optimization of air traffic management. *IEEE Access*, 8:161551–161570, September 2020.
- [16] Romolo Marotta, Davide Tiriticco, Pierangelo Di Sanzo, Alessandro Pellegrini, Bruno Ciciani, and Francesco Quaglia. Mutable locks: Combining the best of spin and sleep locks. *Concurrency and Computation: Practice and Experience*, 32(22), 6 2020.
- [17] Matteo Principe, Tommaso Tocci, Pierangelo Di Sanzo, Francesco Quaglia, and Alessandro Pellegrini. A distributed shared-memory middleware for speculative parallel discrete event simulation. *ACM Transactions on Modeling and Computer Simulation*, 30(2):11:1–11:26, February 2020.
- [18] Francesco Quaglia, Georgios Theodoropoulos, and Alessandro Pellegrini. Editorial to the special issue on the principles of advanced discrete simulation (pads). *Transactions on Modeling and Computer Simulations*, 69(5):8:1–8:2, March 2020.
- [19] Pierangelo Di Sanzo, Alessandro Pellegrini, Marco Sannicandro, Bruno Ciciani, and Francesco Quaglia. Adaptive model-based scheduling in software transactional memory. *IEEE Transactions on Computers*, 69(5):621–632, 5 2020.
- [20] Alessandro Pellegrini and Francesco Quaglia. Cross-state events: a new approach to parallel discrete event simulation and its speculative runtime support. *Journal of Parallel and Distributed Computing*, 132:48–68, 10 2019.
- [21] Mauro Ianni, Alessandro Pellegrini, and Francesco Quaglia. Anonymous readers counting: A wait-free multi-word atomic register algorithm for scalable data sharing on multi-core machines. *IEEE Transactions on Parallel and Distributed Systems*, 30:286–299, 2 2019.
- [22] Davide Cingolani, Alessandro Pellegrini, and Francesco Quaglia. Transparently mixing undo logs and software reversibility for state recovery in optimistic pdes. *ACM Transactions on Modeling and Computer Simulation*, 27(2):11:1–11:26, May 2017.
- [23] Alessandro Pellegrini and Francesco Quaglia. A fine-grain time-sharing time warp system. *ACM Transactions on Modeling and Computer Simulation*, 27(2), May 2017.
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Attachment 2: International Conferences/Workshops/Events

- Speaker at the panel **“The Challenges of Global Security and the New Skills to Tackle Them,”** closing event of the CyberX—Mind4Future training program, organized by the MIMIT Cyber4.0 Competence Center and Leonardo S.p.A., March 2025.
- Speaker at the international conference *28th IEEE International Symposium on Distributed Simulation and Real Time Applications* (DS-RT 2024), Urbino, Italy, (upcoming) presenting **“Sampling Policies for Near-Optimal Device Choice in Parallel Simulations on CPU/GPU Platforms”**.
- Speaker at the international conference *38th ACM SIGSIM Conference on Principles of Advanced Discrete Simulation* (PADS 2024), Atlanta, GA, USA, presenting **“Efficient Non-Blocking Event Management for Speculative Parallel Discrete Event Simulation”**.
- Speaker at the international conference *27th IEEE/ACM International Symposium on Distributed Simulation and Real Time Applications* (DS-RT 2023), Singapore, presenting **“Practical Tie Breaking for Parallel/Distributed Simulations”**.
- Speaker at the international conference *27th IEEE/ACM International Symposium on Distributed Simulation and Real Time Applications* (DS-RT 2023), Singapore, presenting **“Exploiting Memory Protection For Incremental State Saving”**.
- Speaker at the international conference *2023 ACM SIGSIM Conference on Principles of Advanced Discrete Simulation* (PADS 2023), Orlando, FL, USA, presenting **“Hybrid Speculative Synchronisation for Parallel Discrete Event Simulation”**.
- Speaker at the international conference *2021 International Conference on Service Oriented Systems Engineering* (SOSE 2021), Oxford, UK, presenting **“Inferring Relations Among Test Programs in Microservices Applications”**.
- Speaker at the international conference *2018 Winter Simulation Conference* (WSC 2018), Gothenburg, Sweden, presenting **“Optimizing Simulation on Shared-Memory Platforms: the Smart Cities Case”**.
- Speaker at the international conference *2016 Winter Simulation Conference* (WSC 2016), Washington, D.C., USA, presenting **“Programming Agent-Based Demographic Models with Cross-State and Message-Exchange Dependencies: A Study with Speculative PDES and Automatic Load-Sharing”**;
- Speaker at the international conference *4th Workshop on Parallel and Distributed Agent-Based Simulations* (PADABS 2016), co-located with Euro-Par 2016, Grenoble, France, presenting **“Load-Sharing Policies in Parallel Simulation of Agent-Based Demographic Models”**;
- Speaker at the international conference *2016 International Workshop on Autonomic High Performance Computing* (AHPC 2016), co-located with HPCS 2016, Innsbruck, Austria, presenting **“Optimizing Memory Management for Optimistic Simulation with Reinforcement Learning”**;
- Speaker at the international conference *6th International Workshop on Big Data and Cloud Performance* (DCPerf 2016), co-located with ICDCS 2016, Nara, Japan, presenting **“Machine Learning-based Elastic Cloud Resource Provisioning in the Solvency II Framework”**;
- Speaker at the international conference *21st IEEE Workshop on Dependable Parallel, Distributed and Network-Centric Systems* (DPDNS 2016), Chicago, IL, USA, presenting **“Proactive Cloud Management for Highly Heterogeneous Multi-Cloud Infrastructures”**;

- Speaker at the international conference *16th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing* (CCGRID 2016), Cartagena, Colombia, presenting **"OS-based NUMA Optimization: Tackling the Case of Truly Multi-thread Applications with Non-Partitioned Virtual Page Accesses"**;
- Speaker at the international conference *2016 ACM SIGSIM Conference on Principles of Advanced Discrete Simulation* (PADS 2016), 2016 Banff, Canada, presenting **"Granular Time Warp Objects"**;
- Speaker at the international conference *3rd Workshop on Parallel and Distributed Agent-Based Simulations* (PADABS 2015), Vienna, Austria, co-located with Euro-Par 2015, presenting **"RAMSES: Reversibility-based Agent Modeling and Simulation Environment with Speculation support"**;
- Speaker at the international conference *2015 ACM SIGSIM Conference on Principles of Advanced Discrete Simulation* (PADS 2015), London, UK, presenting **"NUMA Time Warp"**;
- Speaker at the international conference *2015 ACM SIGSIM Conference on Principles of Advanced Discrete Simulation* (PADS 2015), London, UK, presenting **"Transparently Mixing Undo Logs and Software Reversibility for State Recovery in Optimistic PDES"**;
- Speaker at the international conference *2nd Workshop on Parallel and Distributed Agent-Based Simulation* (PADABS 2014), co-located with Euro-Par 2014, Porto, Portugal, presenting **"Programmability and Performance of Parallel ECS-based Simulation of Multi-Agent Exploration Models"**;
- Speaker at the international conference *2014 ACM SIGSIM Conference on Principles of Advanced Discrete Simulation* (PADS 2014), Denver, Colorado, USA, presenting **"Transparent Multi-Core Speculative Parallelization of DES Models with Event and Cross-State Dependencies"**;
- Invited Tutorial at the *1st Workshop on Parallel and Distributed Agent-Based Simulations* (PADABS 2013), co-located with Euro-Par 2013, Aachen, Germany, tutorial's title: **"The ROME OpTimistic Simulator: A Tutorial"**;
- Speaker at the international conference *1st Workshop on Parallel and Distributed Agent-Based Simulations* (PADABS 2013), co-located with Euro-Par 2013, Aachen, Germany, presenting **"A Study on the Parallelization of Terrain-Covering Ant Robots Simulations"**;
- Speaker at the international conference *19th International Conference on Parallel Processing* (Euro-Par 2013), Aachen, Germany, presenting **"Transparent Support for Partial Rollback in Software Transactional Memories"**;
- Speaker at the international conference *2013 International Conference on High Performance Computing and Simulation* (HPCS 2013), Helsinki, Finland, presenting **"Hijacker: Efficient Static Software Instrumentation with Applications in High Performance Computing"**;
- Speaker at the international conference *2013 ACM SIGSIM Conference on Principles of Advanced Discrete Simulation* (PADS 2013), Montréal, Canada, presenting **"Consistent and Efficient Output-Stream Management in Optimistic Simulation Platforms"**;
- Speaker at the international conference *6th International Conference on Simulation Tools and Techniques* (SIMUTOOLS 2013), Nice, France, presenting **"A Framework for High Performance Simulation of Transactional Data Grid Platforms"**;

- Speaker at the international conference *19th International Conference on High Performance Computing* (HiPC 2012), Pune, India, presenting “**A Load Sharing Architecture for Optimistic Simulations on Multi-Core Machines**”;
- Speaker at the international conference *20th International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunication Systems* (MASCOTS 2012), Arlington, VA, USA, presenting “**Transparent and Efficient Shared-State Management for Optimistic Simulations on Multi-core Machines**”;
- Speaker at the international conference *5th International ICST Conference on Simulation Tools and Techniques* (SIMUTools 2012), Desenzano del Garda, Italy, presenting “**Cache-Aware Memory Manager for Optimistic Simulations**”;
- Speaker at the international conference *13-th IEEE/ACM International Symposium on Distributed Simulation and Real Time Applications* (DS-RT 2009), Singapore, presenting “**Benchmarking Memory Management Capabilities within ROOT-Sim**”;
- Speaker at the international conference *2009 ACM/IEEE/SCS 23rd Workshop on Principles of Advanced and Distributed Simulation* (PADS 2009), Lake Placid, NY, USA, presenting “**Di-DyMeLoR: Logging only Dirty Chunks for Efficient Management of Dynamic Memory Based Optimistic Simulation Objects**”;