

## Curriculum Vitae Europass



### Informazioni personali

Cognome/i nome/i

Email

Nazionalità

Data di nascita

Sesso

**Villano Umberto**

villano@unisannio.it

Italiana

Maschile

### Settore di competenza

Sistemi operativi  
Architettura dei Calcolatori  
Programmazione parallela e distribuita  
Valutazione di prestazioni di sistemi di calcolo paralleli e distribuiti  
Grid e cloud computing  
Sicurezza in architetture cloud

### Esperienza professionale

2002-oggi	Professore Ordinario, SSD ING-INF/05 Università degli Studi del Sannio
2013-oggi	Direttore del Dipartimento di Ingegneria ( <i>post-legge</i> 240 del 30/12/2010) Università degli Studi del Sannio
2014-oggi	Consigliere di amm.ne RIMIC s.c.r.l. (Rete di Interconnessione Multiservizio Interuniversitaria Campana)
2011-oggi	Consigliere di amm.ne CeRICT s.c.r.l. (Centro Regionale Campano Information and Communication Technology)
2011-oggi	Consigliere di amm.ne CINECA Consorzio Interuniversitario per il Calcolo Automatico
2007-2013	Direttore del Dipartimento di Ingegneria ( <i>pre-legge</i> 240 del 30/12/2010) Università degli Studi del Sannio
2001-2007	Presidente del Corso di Studio in Ingegneria Informatica Università degli Studi del Sannio
1998-2002	Professore Associato, SSD ING-INF/05 Università degli Studi del Sannio
1985-1998	Ricercatore Consiglio Nazionale delle Ricerche

**Istruzione e formazione**

1983

Laurea *cum laude* in Ingegneria Elettronica, Università di Napoli "Federico II"**Capacità e competenze professionali**

Madrelingua/e

**Italiano**

Altra/e lingua/e

**Inglese***Autovalutazione  
Livello europeo<sup>(1)</sup>*

Comprensione				Parlato				Scritto	
Ascolto		Lettura		Interazione		Produzione orale			
C1	Livello avanzato	C2	Livello avanzato	C1	Livello avanzato	C2	Livello avanzato	C2	Livello avanzato

<sup>(1)</sup> *Quadro comune europeo di riferimento per le lingue***Inglese****Capacità e competenze organizzative**

Direzione e coordinamento gruppi di ricerca

Direzione e coordinamento didattico ed amministrativo in istituzioni accademiche

**Competenze professionali**Conoscenza profonda della maggioranza dei temi legati all'Informatica  
Abilità avanzata nella programmazione dei calcolatori**Competenze informatiche**

Ottima conoscenza e padronanza di ambienti e strumenti informatici

Patente/i

B

**Allegati**

Lista pubblicazioni

## Publicazioni

- [1] M. Rak, M. Turtur, U. Villano, and L. Pino. A portable tool for running mpi applications in the cloud. In *2014 International Conference on Intelligent Networking and Collaborative Systems*, pages 10–17, 2014.
- [2] A. De Benedictis, M. Rak, and U. Villano. Cloud-aware development of scientific applications. In *2014 IEEE 23rd WETICE Conference*, pages 149–154, 2014.
- [3] V. Casola, A. De Benedictis, M. Rak, and U. Villano. Preliminary design of a platform-as-a-service to provide security in cloud. In *CLOSER 2014 - Proceedings of the 4th International Conference on Cloud Computing and Services Science*, pages 752–757, 2014.
- [4] V. Casola, A. De Benedictis, M. Rak, G. Aversano, and U. Villano. An sla-based brokering platform to provide sensor networks as-a-service. *International Journal of Business Process Integration and Management*, 7(2):114–127, 2014.
- [5] F. Picariello, S. Rapuano, and U. Villano. A portable measurement system for power profiling of processing units. *Measurement*, 54(0):191 – 200, 2014.
- [6] A. Cuomo, A. Santone, and U. Villano. Cd-form: A clone detector based on formal methods. *Science of Computer Programming*, 2013. Article in Press.
- [7] A. Cuomo, M. Rak, and U. Villano. Concurrent simulation in the cloud with the mjades framework. *International Journal of Simulation and Process Modelling*, 8(4):212–226, 2013.
- [8] A. Cuomo, G. Di Modica, S. Distefano, A. Puliafito, M. Rak, O. Tomar-chio, S. Venticinque, and U. Villano. An sla-based broker for cloud infra-structures. *Journal of Grid Computing*, 11(1):1–25, 2013.
- [9] V. Casola, A. De Benedictis, M. Rak, G. Aversano, and U. Villano. An sla-based approach to manage sensor networks as-a-service. In *Cloud Computing Technology and Science (CloudCom), 2013 IEEE 5th International Conference on*, volume 1, pages 191–197, Dec 2013.
- [10] M. Rak, N. Suri, J. Luna, D. Petcu, V. Casola, and U. Villano. Security as a service using an sla-based approach via specs. In *Cloud Computing Technology and Science (CloudCom), 2013 IEEE 5th International Conference on*, volume 2, pages 1–6, Dec 2013.
- [11] F. Picariello, S. Rapuano, and U. Villano. Evaluation of power consumption of workstation computers using benchmarking. In *12th IMEKO TC10 Workshop on Technical Diagnostics: New Perspective in Measurements*,

*Tools and Techniques for Industrial Applications, Proceedings*, pages 242–247, 2013.

- [12] M. Rak, A. Cuomo, and U. Villano. Cost/performance evaluation for cloud applications using simulation. In *Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE), 2013 IEEE 22nd International Workshop on*, pages 152–157, 2013.
- [13] M. Rak, A. Cuomo, and U. Villano. A proposal of a simulation-based approach for service level agreement in cloud. In *Advanced Information Networking and Applications Workshops (WAINA), 2013 27th International Conference on*, pages 1235–1240, 2013.
- [14] A. Cuomo, M. Rak, and U. Villano. Planting parallel program simulation on the cloud. *Concurrency Computation Practice and Experience*, 2013. Article in Press.
- [15] Giuseppe Aversano, Massimiliano Rak, and Umberto Villano. The mosaic benchmarking framework: Development and execution of custom cloud benchmarks. *Scalable Computing: Practice and Experience*, 14(1), 2013.
- [16] Antonio Cuomo, Massimiliano Rak, and Umberto Villano. Simulation-based performance evaluation of cloud applications. In Giancarlo Fortino, Costin Badica, Michele Malgeri, and Rainer Unland, editors, *Intelligent Distributed Computing VI*, volume 446 of *Studies in Computational Intelligence*, , pages 263–269. Springer Berlin / Heidelberg, 2013. Original publication available at [www.springerlink.com](http://www.springerlink.com).
- [17] Valentina Casola, Antonio Cuomo, Massimiliano Rak, and Umberto Villano. The cloudgrid approach: Security analysis and performance evaluation. *Future Generation Computer Systems*, 29(1):387–401, 2013.
- [18] Antonio Cuomo, Antonella Santone, and Umberto Villano. A novel approach based on formal methods for clone detection. In *Software Clones (IWSC), 2012 6th International Workshop on*, pages 8–14, june 2012.
- [19] Franco Frattolillo, Federica Landolfi, Umberto Villano, and Antonio Cuomo. A simple and secure watermarking protocol. In *Information Assurance and Security (IAS), 2012 Eighth International Conference on*, 2012.
- [20] Antonio Cuomo, Giuseppe Di Modica, Salvatore Distefano, Antonio Pulliafito, Massimiliano Rak, Orazio Tomarchio, Salvatore Venticinque, and Umberto Villano. An sla-based broker for cloud infrastructures. *Journal of Grid Computing*, pages 1–25, 2012. Original publication available at [www.springerlink.com](http://www.springerlink.com).
- [21] Antonio Cuomo, Massimiliano Rak, and Umberto Villano. Cloud-based concurrent simulation at work: Fast performance prediction of parallel programs. In *Enabling Technologies: Infrastructure for Collaborative*

*Enterprises (WETICE), 2012 21th IEEE International Workshops on - Toulouse, 25-27 June 2012*, pages 137–142, 2012.

- [22] Antonio Cuomo, Massimiliano Rak, Salvatore Venticinque, and Umberto Villano. Enhancing an autonomic cloud architecture with mobile agents. In Michael Alexander, Pasqua D'Ambra, Adam Belloum, George Bosilca, Mario Cannataro, Marco Danelutto, Beniamino Di Martino, Michael Gerndt, Emmanuel Jeannot, Raymond Namyst, et al., editors, *Euro-Par 2011: Parallel Processing Workshops*, volume 7155 of *Lecture Notes in Computer Science*, , pages 94–103. Springer Berlin / Heidelberg, 2012. Original publication available at [www.springerlink.com](http://www.springerlink.com).
- [23] Antonio Cuomo, Massimiliano Rak, and Umberto Villano. mjades: Concurrent simulation in the cloud. In *2nd International Workshop on Intelligent Computing at Large Scale - 4-6 July, 2012, Palermo, Italy*, pages 853–860, 2012.
- [24] Antonio Cuomo, Massimiliano Rak, and Umberto Villano. Process-oriented discrete-event simulation in java with continuations: quantitative performance evaluation. In *International Conference on Simulation and Modeling Methodologies, Technologies and Applications (SIMULTECH) - Rome, 28-31 July 2012*, volume 2nd International Conference on Simulation and Modeling Methodologies, Technologies and Applications, pages 87–96, . SciTePress, 2012.
- [25] Valentina Casola, Raffaele Lettieri, Massimiliano Rak, and Umberto Villano. Access control in cloud-on-grid systems: The PerfCloud case study. In Serge Gutwirth, Yves Poulet, Paul De Hert, and Ronald Leenes, editors, *Computers, Privacy and Data Protection: an Element of Choice*, pages 427–444. Springer Netherlands, 2011.
- [26] Massimiliano Rak, Antonio Cuomo, and Umberto Villano. Chase: An autonomic service engine for cloud environments. In *Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE), 2011 20th IEEE International Workshops on*, pages 116–121, june 2011.
- [27] Rocco Aversa, Dario Bruneo, Antonio Cuomo, Beniamino Di Martino, Salvatore Distefano, Antonio Puliafito, Massimiliano Rak, Salvatore Venticinque, and Umberto Villano. Cloud@home: Performance management components. In Mario Guarracino, Frédéric Vivien, Jesper Träff, Mario Cannataro, Marco Danelutto, Anders Hast, Francesca Perla, Andreas Knüpfer, Beniamino Di Martino, and Michael Alexander, editors, *Euro-Par 2010 Parallel Processing Workshops*, volume 6586 of *Lecture Notes in Computer Science*, , pages 579–586. Springer Berlin / Heidelberg, 2011. Original publication available at [www.springerlink.com](http://www.springerlink.com).
- [28] Valentina Casola, Antonio Cuomo, Massimiliano Rak, and Umberto Villano. Identity federation in perfcloud: an architecture for cloud and grid

- integration. *Journal of Information Assurance and Security*, 6:311–321, 2011.
- [29] Rocco Aversa, Beniamino Di Martino, Massimiliano Rak, Salvatore Venticinque, and Umberto Villano. *Performance Prediction for HPC on Clouds*, chapter 17, pages 437–456. John Wiley & Sons, Inc., 2011.
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- [31] Valentina Casola, Antonio Cuomo, Massimiliano Rak, and Umberto Villano. Security and performance trade-off in perflcloud. In Mario Guaracino, Frédéric Vivien, Jesper Träff, Mario Cannatoro, Marco Danelutto, Anders Hast, Francesca Perla, Andreas Knüpfer, Beniamino Di Martino, and Michael Alexander, editors, *Euro-Par 2010 Parallel Processing Workshops*, volume 6586 of *Lecture Notes in Computer Science*, , pages 633–640. Springer Berlin / Heidelberg, 2011. Original publication available at [www.springerlink.com](http://www.springerlink.com).
- [32] Rocco Aversa, Marco Avvenuti, Antonio Cuomo, Beniamino Di Martino, Giuseppe Di Modica, Salvatore Distefano, Antonio Puliafito, Massimiliano Rak, Orazio Tomarchio, Alessio Vecchio, et al.. The cloud@home project: Towards a new enhanced computing paradigm. In Mario Guaracino, Frédéric Vivien, Jesper Träff, Mario Cannatoro, Marco Danelutto, Anders Hast, Francesca Perla, Andreas Knüpfer, Beniamino Di Martino, and Michael Alexander, editors, *Euro-Par 2010 Parallel Processing Workshops*, volume 6586 of *Lecture Notes in Computer Science*, , pages 555–562. Springer Berlin / Heidelberg, 2011. Original publication available at [www.springerlink.com](http://www.springerlink.com).
- [33] Massimiliano Rak, Antonio Cuomo, and Umberto Villano. A service for virtual cluster performance evaluation. In *Proceedings of the 2010 19th IEEE International Workshops on Enabling Technologies: Infrastructures for Collaborative Enterprises, WETICE '10*, pages 249–251, Washington, DC, USA, 2010. IEEE Computer Society.
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- [37] Emilio Mancini, Massimiliano Rak, and Umberto Villano. Perfcloud: GRID services for performance-oriented development of cloud computing applications. In Sumitra Reddy, editor, *18th IEEE International Workshops on Enabling Technologies: Infrastructures for Collaborative Enterprises, WETICE 2009, Groningen, The Netherlands, 29 June - 1 July 2009, Proceedings*, pages 201–206. . IEEE Computer Society, 2009.
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- [40] Emilio Mancini, Sonya Marcarelli, Igor Vasil'ev, and Umberto Villano. A grid-aware MIP solver: Implementation and case studies. *Future Generation Computing Systems*, 24(2):133–141, 2008.
- [41] Valentina Casola, Emilio Mancini, Nicola Mazzocca, Massimiliano Rak, and Umberto Villano. Self-optimization of secure web services. *Computer Communications*, 31:4312–4323, December 2008.
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- [43] Massimiliano Rak, Valentina Casola, Emilio Mancini, and Umberto Villano. Optimizing secure web services with mawes: a case study. In *1st International ICST Workshop on Secure and Multimodal Pervasive Environments, Nice (F), 17-20 Sept. 2007*, pages 144–153. . IEEE, 2007.
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- [47] Sonya Marcarelli, Emilio Mancini, and Umberto Villano. Computational experience with branch, cut and price algorithms in grid environments. In Geyong Min, Beniamino Di Martino, Laurence Tianruo Yang, Minyi Guo, and Gudula Runger, editors, *Frontiers of High Performance Computing and Networking, ISPA '06 Workshops*, volume 4331 of *Lecture Notes in Computer Science (LNCS)*, , pages 125–134. Springer-Verlag (Berlin), 2006.
- [48] Massimiliano Iannotta, Emilio Mancini, Massimiliano Rak, and Umberto Villano. Self-optimization of MPI applications within an autonomic framework. In Michael Gerndt and Dieter Kranzlmüller, editors, *High Performance Computing and Communications*, volume 4208 of *Lecture Notes in Computer Science (LNCS)*, , pages 210–219. Springer, 2006.
- [49] Emilio Mancini, Umberto Villano, and Massimiliano Rak. Autonomic web service development with MAWeS. In *AINA06*, pages 504–508, . IEEE Computer Society, 2006.
- [50] Emilio Mancini, Umberto Villano, Massimiliano Rak, and Roberto Torella. A simulation-based framework for autonomic web services. In *ICPADS2005*, pages 433–437, . IEEE Computer Society, 2005.
- [51] Emilio Mancini, Massimiliano Rak, Roberto Torella, and Umberto Villano. Self-optimizing MPI applications: A simulation-based approach. In Laurence Tianruo Yang, Omer F. Rana, Beniamino Di Martino, and Jack Dongarra, editors, *High Performance Computing and Communications, First International Conference*, volume 3726 of *Lecture Notes in Computer Science (LNCS)*, , pages 143–155. Springer, 2005.
- [52] Emilio Mancini, Massimiliano Rak, Roberto Torella, and Umberto Villano. Performance oriented development and tuning of GRID applications. In Jack Dongarra, Kaj Madsen, and Jerzy Wasniewski, editors, *PARA '04, Workshop on State-of-the-Art in Scientific Computing*, volume 3732 of *Lecture Notes in Computer Science (LNCS)*, , pages 509–518. Springer, 2005.



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- [54] Emilio Mancini, Umberto Villano, Nicola Mazzocca, Massimiliano Rak, and Roberto Torella. Performance-driven development of a web services application using metaPL/heSSE. In *Proceedings of the 13th Euromicro conference on Parallel and Distributed Processing*, pages 12–19. IEEE Computer Society, 2005.
- [55] Rocco Aversa, Beniamino Di Martino, Massimiliano Rak, Salvatore Ventinque, and Umberto Villano. Performance prediction through simulation of a hybrid MPI/openMP application. *Parallel Computing*, 31(10-12):1013–1033, 2005.
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- [58] Nicola Mazzocca, Massimiliano Rak, Roberto Torella, Emilio Mancini, and Umberto Villano. The HeSSE simulation environment. In *Proc. of 2003 European Simulation and Modelling Conf. (ESMc'2003)*, pages 270–274, Naples (Italy), October 2003.
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- [62] Giuliano Antoniol, Massimiliano Di Penta, Gianluca Masone, and Umberto Villano. XOGastan: XML-oriented gcc AST analysis and transformations. In *SCAM2003 - 3rd International Workshop on Source-code Analysis and Manipulation, 26-27 Sept. 2003, Amsterdam (NL)*, pages 173–182. IEEE Computer Society, 2003.
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- [66] Giuliano Antoniol, Umberto Villano, Ettore Merlo, and Massimiliano Di Penta. Analyzing cloning evolution in the linux kernel. *Information and Software Technology*, 44(13):755–765, 2002.
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- [69] Aniello Gaito, Massimiliano Rak, and Umberto Villano. Adding dynamic coscheduling support to PVM. In Yannis Cotronis and Jack Dongarra, editors, *Recent Advances in Parallel Virtual Machine and Message Passing Interface*, volume 2131 of *Lecture Notes in Computer Science (LNCS)*, pages 106–113. Springer, 2001.

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- [72] Giuliano Antoniol, Umberto Villano, Massimiliano Di Penta, Gerardo Casazza, and Ettore Merlo. Identifying clones in the linux kernel. In *SCAM2001 - 1st International Workshop on Source-code Analysis and Manipulation, 10 Nov. 2001, Florence (IT)*, pages 90–97, . IEEE Computer Society, 2001.
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- [79] Beniamino Di Martino, Antonino Mazzeo, Nicola Mazzocca, and Umberto Villano. Restructuring parallel programs by transformation of point-to-point interactions into collective communication. In *Proceedings of 7th International Workshop on Program Comprehension, Pittsburgh (USA), 5-7 May 1999*, pages 84–91, . IEEE Computer Society Press, 1999.
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