

# Curriculum Vitæ

Claudia Canali

## Personal Information

**Name:** Claudia Canali

**Date of birth:** June 16, 1977

**Place of birth:** Carpi (Modena), Italy

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## Current position

Since 2008 researcher at the Department of Engineering “Enzo Ferrari” of the University of Modena and Reggio Emilia, Italy.

## Education

2006 Ph.D. in Information Technologies at the University of Parma, Italy, with the thesis *“Scalable systems providing adaptation services to enable Ubiquitous Web access”*.

2002 Laurea degree, summa cum laude, in Information Engineering at the University of Modena and Reggio Emilia, Italy, with the thesis *“Cooperative Distributed Architectures for Web accessibility from heterogeneous client devices”*.

## Research Experiences

- 2007 - 2008 Two years research contract with the Institute for Informatics and Telematics of the Italian National Research Council (CNR) of Pisa. Subject of the research: design and development of protocols for Wireless Mesh Networks.
- 2006 One year research contract with the Department of Information Engineering of the University of Modena and Reggio Emilia. Subject of the research: scalable distributed systems for Ubiquitous Web-based services.
- 2004 Visiting researcher at the AT&T Research Labs in Florham Park, NJ, for 9 months under the supervision of Dr. Misha Rabinovich. Subject of the research: distributed systems, Web content delivery, utility computing.

## Professional Activities

- Guest editor of Peer-to-Peer Networking and Applications Journal, Special Issue on Experimental Evaluation of Peer-to-Peer Applications, 2013
- Program Vice-Chair of the 6th International Conference on Multimedia and Ubiquitous Engineering (MUE 2012)
- Project proposals evaluator for the National Funding Research Programmes CORE and POLLUX of the Luxembourg National Research Fund (FNR)
- Project proposals evaluator for the Italian Minister of Education, University and Research (MIUR) "Bando Futuro in Ricerca 2013"
- Technical Program Committee member for the following International Conferences:
  - International Conference on Internet and Web Applications and Services (ICIW): 2016, 2015
  - International Conference on Green IT Solutions (ICGREEN): 2016, 2015
  - IEEE Globecom Communication & Information System Security Symposium (GC15-CISS): 2015

- International Conference on Mobile Web Information Systems (MobiWIS): 2015, 2013
- ACM International Symposium on Performance Evaluation of Wireless Ad Hoc, Sensor, and Ubiquitous Networks (PE-WASUN): 2016, 2015, 2014, 2013, 2012, 2011, 2010
- ACM International Workshop on Performance Monitoring, Measurement, and Evaluation of Heterogeneous Wireless and Wired Networks (PM2HW2N): 2014, 2013, 2012, 2011, 2010, 2009, 2008
- International Workshop on Wireless Sensor Networks Architectures, Simulation and Programming (WASP 2009)
- International Workshop on Scalable Data Management Applications and Systems (SDMAS 2009, 2008)
- Reviewer for the following International Journals: IEEE Transactions on Systems, Man and Cybernetics, IEEE Transactions on Vehicular Technology, IEEE Internet Computing, World Wide Web Journal, Journal of Systems and Software, Cluster Computing, Journal of Supercomputing, Network and Computer Applications, Peer-to-Peer Networking and Applications, Simulation Modelling Practice and Theory

## Teaching Activities

- 2011 - 2017 Teacher of *Dynamic Languages*, Computer Science Degree, University of Modena and Reggio Emilia.
- 2009 - 2012 Teacher of *Elements of Computer Science*, Computer Science Degree, University of Modena and Reggio Emilia.
- 2009 Teacher of the *English applied to computer science* course for the employees of the Civil Administration, task assigned by the Prefecture of Modena.
- 2008 - 2011 Teacher of *Advanced C++ Programming*, Computer Science Degree, University of Modena and Reggio Emilia.
- 2008 Teacher of *Multimedia and Mobile Systems*, Computer Science Degree, University of Modena and Reggio Emilia.
- 2007 Teaching assistant of *Advanced C++ Programming*, Computer Science Degree, University of Modena and Reggio Emilia.

- 2006 Teacher of *C/C++ Programming*, 2nd Level Master in Computational Finance and Risk Management, University of Modena and Reggio Emilia.
- 2005 Seminars on *Internet Services, Authentication and Authorization Systems*, 2nd Level Master in Security of Information Systems: Normatives and Advanced Protection Techniques, University of Modena and Reggio Emilia.
- 2004 - 2008 Teaching assistant of *Networking Systems and Services*, Computer Science Degree, University of Modena and Reggio Emilia.
- 2003 - 2006 Teaching assistant of the *C Programming*, Computer Science Degree, University of Modena and Reggio Emilia.

## Undergraduate/Graduate Students Supervision

- External member of Ph.D. dissertation committee in Information Technologies at the University of Parma (Italy), defended April 2016
- External member of Ph.D. dissertation committee in Computer Science at University Carlos III of Madrid (Spain), defended February 2011
- Advisor of 30 theses in Computer Science at the University of Modena and Reggio Emilia

## Research Projects

- European Project Horizon 2020 (Support and Coordination Action) - 2016-2019, “EQUAL-IST: Gender Equality Plans for Information Sciences and Technology Research Institutions” (Responsible for UniMORE research unit)
- FAR 2014 research project - 2015-2016, “SAMMClouds: Secure and Adaptive Management of Multi-Clouds” (Principal Investigator)
- Industrial Innovation Project Industria 2015 - 2010-2013, “I TASTE - Nuove tecnologie basate sul ICT per la distribuzione e la vendita automatizzata di prodotti alimentari italiani sui mercati internazionali”
- European Union Seventh Framework Programme FP7 - 2010-2013, “VIRTUOSO: Versatile InfoRmation Toolkit for end-Users oriented Open-Sources exploItation”

- Industrial Innovation Project Industria 2015 - 2009-2011, “TIXOFORM Nuovo processo di formatura tixotropica di leghe di bronzo con elevato risparmio energetico e con diffusivita’ industriale”
- National Italian Project MIUR PRIN - 2009-2010 “AUTOSEC Auto-nomic Security”
- MIUR Research Project - Integrated Actions Italy-Spain - 2009-2010, “Scalable and robust architectures for supporting advanced network services”
- National Italian Project MIUR FIRB - 2002-2006, “Middleware for Advanced Services over Large-Scale, Wired-Wireless Distributed Systems”

## Patent

- “Monitoring for replica placement and request distribution”, Claudia Canali, Alexandre Gerber, Stephen Fisher, Michael Rabinovich, Oliver Spatscheck, Zhen Xiao, Patent No. US 7941556, May 10 2011

## Research Interests

The main results have been achieved in the following areas:

- Cloud Computing
- Social Networks
- Wireless Mesh Networks
- Distributed Systems for Ubiquitous Web-based Services

## Publications

### International Journals

1. C. Canali, R. Lancellotti, “Parameter Tuning for Scalable Multi-Resource Server Consolidation in Cloud Systems”, *Journal of Communications Software and Systems (JCOMSS)*, Vol. 11, No. 4, Dec. 2015
2. C. Canali, R. Lancellotti, “Detecting Similarities in Virtual Machine Behavior for Cloud Monitoring using Smoothed Histograms”, *Journal of Parallel and Distributed Computing*, Vol. 74, No. 8, August 2014

3. C. Canali, R. Lancellotti, "Exploiting Ensemble Techniques for Automatic Clustering of Virtual Machine in Cloud Systems", *Automated Software Engineering Journal*, Vol. 21, No. 3, September 2014
4. C. Canali, R. Lancellotti, "Improving scalability of cloud monitoring through PCA-based Clustering of Virtual Machines", *Journal of Computer Science and Technology*, Springer, Vol. 29, No. 1, Jan. 2014
5. C. Canali, M. Colajanni, R. Lancellotti, "Algorithms for Web Service Selection with Static and Dynamic Requirements", *Service Oriented Computing and Applications Journal*, Springer, Vol. 7, No. 1, March 2013
6. R. Canonico, C. Canali, W. Dabbous, "Experimental evaluation of peer-to-peer applications", *Peer-to-Peer Networking and Applications Journal*, Springer, Vol. 6, No. 2, Jan. 2013
7. C. Canali, R. Lancellotti, "Automated Clustering of Virtual Machines based on Correlation of Resource Usage", *Journal of Communications Software and Systems (JCOMSS)*, Vol. 8, No. 4, Dec. 2012
8. C. Canali, M. Colajanni, D. Malandrino, V. Scarano, R. Spinelli, "A Novel Intermediary Framework for Dynamic Edge Service Composition", *Journal of Computer Science and Technology*, Springer, Vol. 27, No. 2, Mar. 2012
9. C. Canali, R. Lancellotti, "A quantitative methodology based on component analysis to identify key users in social networks", *International Journal of Social Network Mining*, Vol. 1, No. 1, Jan. 2012
10. C. Canali, M. Colajanni, R. Lancellotti, "Resource management strategies for the Mobile Web", *Mobile Networks and Applications Journal*, Springer, Vol. 15, No. 2, Apr. 2010
11. S. Burresti, C. Canali, M. E. Renda, P. Santi, "Enabling Efficient Peer-to-Peer Resource Sharing in Wireless Mesh Networks", *IEEE Transactions on Mobile Computing*, Vol. 9, No. 3, Mar. 2010
12. C. Canali, M. Colajanni, R. Lancellotti, "A two-level distributed architecture for the support of content adaptation and delivery services", *Cluster Computing Journal*, Springer, Vol. 13, No. 1, Mar. 2010
13. C. Canali, M. Colajanni, R. Lancellotti, "Performance impact of future Mobile-Web based services on the server infrastructure", *IEEE Internet Computing*, Vol. 13, No. 2, March 2009
14. C. Canali, V. Cardellini, R. Lancellotti, "Content Adaptation Architectures Based on Squid Proxy Server", *World Wide Web Journal*,

Springer-Verlag, March 2006

### Book Chapters

1. C. Canali, M. Colajanni, R. Lancellotti, “Technological Solutions to Support Mobile Web 2.0 Services”, *invited book chapter in Mobile Web 2.0: Developing and Delivering Services*, (S. A. Ahson, M. Ilyas Eds.), CRC Press, January 2011
2. C. Canali, V. Cardellini, M. Colajanni, R. Lancellotti, “Content Delivery and Management”, invited book chapter in *Content Delivery Networks: Principles and Paradigms* (R. Buyya, M. Pathan, A. Vakali Eds.), Springer, June 2008
3. C. Canali, M. Rabinovich, Z. Xiao, “Utility computing for Internet applications”, invited book chapter in *Recent Advances on Web Content Delivery* (S. Chanson, X. Tang, J. Xu Eds.), Springer-Verlag, October 2005

### International Conferences

1. M. Shojafar, C. Canali, R. Lancellotti, E. Baccarelli, “Minimizing Computing-plus-Communication Energy Consumptions in Virtualized Networked Data Centers”, *Proc. of 21st IEEE Symposium on Computers and Communications (ISCC 2016)*, Messina, Italy, 27-30 June 2016
2. M. Shojafar, C. Canali, R. Lancellotti, S. Abolfazli, “An Energy-aware Scheduling Algorithm in DVFS-enabled Networked Data Centers”, *Proc. of 6th International Conference on Cloud Computing and Services Science (CLOSER 2016)*, Rome, Italy, 23-25 April 2016
3. C. Canali, R. Lancellotti, “Automatic Parameter Tuning for Class-Based Virtual Machine Placement in Cloud Infrastructures”, *Proc. of 23rd International Conference on Software, Telecommunications and Computer Networks (SoftCOM 2015)*, Split, Croatia, 16-18 September 2015
4. C. Canali, R. Lancellotti, “A Class-based Virtual Machine Placement Technique for a Greener Cloud”, *Proc. of 4th Int’l Conference on Green It Solutions (ICGREEN 2015)*, Milano, 6 July 2015

5. C. Canali, R. Lancellotti, "Exploiting Classes of Virtual Machines for Scalable IaaS Cloud Management", *Proc. of IEEE 4th Symposium on Network Cloud Computing and Applications (NCCA 2015)*, Munich, 11-12 June 2015
6. C. Canali, R. Lancellotti, "Balancing Accuracy and Execution Time for Similar Virtual Machines Identification in IaaS Cloud", *Proc. of IEEE Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE'14)*, Parma, Italy, June 2014
7. C. Canali, R. Lancellotti, "An Adaptive Technique to Model Virtual Machine Behavior for Scalable Cloud Monitoring", *Proc. of 9th International Symposium on Computers and Communications (ISCC'14)*, Madeira, Portugal, June 2014, **Best paper award**
8. C. Canali, R. Lancellotti, "Automatic Virtual Machine Clustering based on Bhattacharyya Distance for Multi-Cloud Systems", *Proc. of 1st International Workshop on Multi-cloud Applications and Federated Clouds (Multi-Cloud'13)*, Prague, April 2013
9. C. Canali, R. Lancellotti, "Automated Clustering of VMs for Scalable Cloud Monitoring and Management", *Proc. of 20th International Conference on Software, Telecommunications and Computer Networks (SOFTCOM'12)*, Split, Croatia, Sept. 2012
10. M. Andreolini, C. Canali, M. Colajanni, R. Lancellotti, "Dynamic request management algorithms for Web-based services in cloud computing", *Proc. of the IEEE Computer Software and Applications Conference (COMPSAC'11)*, Munich, Germany, July 2011
11. C. Canali, M. Colajanni, R. Lancellotti, "Data Acquisition in Social Networks: Issues and Proposals", *Proc. of the International Workshop on Services and Open Sources (SOS'11)*, Brest, France, January 2011
12. C. Canali, S. Casolari, R. Lancellotti, "A quantitative methodology to identify relevant users in social networks", *Proc. of the International Workshop on Business Applications of Social Network Analysis (BASNA'10)*, Bangalore, India, December 2010
13. C. Canali, M. Colajanni, R. Lancellotti, "Adaptive algorithms for efficient content management in social network services", *Proc. of the 10th IEEE International Conference on Computers and Information Technology (CIT'10)*, Bradford, UK, June 2010

14. C. Canali, M. Colajanni, R. Lancellotti, "Characteristics and evolution of content popularity and user relations in social networks", *Proc. of IEEE Symposium on Computers and Communications (ISCC'10)*, Riccione, Italy, Jun. 2010
15. D. Blough, C. Canali, P. Santi, "On the Impact of Far Away Interference on Evaluations of Wireless Multihop Networks", *Proc. of the 12th ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM 2009)*, Tenerife, Canary Islands, October 2009
16. Claudia Canali, Michele Colajanni, Riccardo Lancellotti, "Hot set identification for social network applications", *Proc. of the 33rd Annual IEEE International Computer Software and Applications Conference (COMPSAC 2009)*, Seattle, Washington, July 2009
17. C. Canali, M. Colajanni, R. Lancellotti, "Resource management strategies for Mobile Web-based services", *Proc. of the 4th IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WIMOB 2008)*, Avignon, France, October 2008
18. C. Canali, M. E. Renda, P. Santi, "Evaluating Load Balancing in Peer-to-Peer Resource Sharing Algorithms for Wireless Mesh Networks", *Proc. of the 2nd IEEE International Workshop on Enabling Technologies and Standards for Wireless Mesh Networking (MeshTech 2008)*, Atlanta, GA, September 2008
19. C. Canali, R. Lancellotti, J. G. Sanchez, "Impact of Social Networking Services on Performance and Scalability of Web Server Infrastructures", *Proc. of the 7th IEEE International Symposium on Network Computing and Applications (NCA 2008)*, Cambridge, MA, July 2008
20. S. Burrelli, C. Canali, M. E. Renda, P. Santi, "MESHCHORD: A Location-Aware, Cross-Layer Specialization of Chord for Wireless Mesh Networks", *Proc. of the 6<sup>th</sup> Annual IEEE International Conference on Pervasive Computing and Communications (PERCOM 2008)*, Hong Kong, March 2008
21. C. Canali, M. Colajanni, R. Lancellotti, P. S. Yu, "A distributed infrastructure supporting personalized services for the Mobile Web", *Proc. of the 3rd IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WIMOB 2007)*, New York, USA, October 2007

22. M. Andreolini, C. Canali, R. Lancellotti, "Impact of request dispatching granularity in geographically distributed Web systems", *Proc. of the 6th IEEE International Symposium on Network Computing and Applications (NCA07)*, Cambridge, MA, July 2007
23. C. Canali, M. Colajanni, R. Lancellotti, "Distributed architectures for high performance and privacy-aware content generation and delivery", *Proc. of the 2nd International Conference on Automated Production of Cross Media Content for Multi-channel Distribution (AXMEDIS 2006)*, Leeds, UK, December 2006
24. C. Canali, R. Lancellotti, "A distributed architecture to support infomobility services", *Proc. of the International Workshop on Advanced Architectures and Algorithms for Internet Delivery and Applications (AAA-IDEA 2006)*, Pisa, Italia, October 2006
25. C. Canali, M. Colajanni, R. Lancellotti, "Distribution of adaptation services for ubiquitous Web access driven by user profiles", *Proc. of the 11th IEEE Symposium on Computers and Communications (ISCC 2006)*, Cagliari, Italy, June 2006
26. C. Canali, S. Casolari, R. Lancellotti, "Distributed Systems to Support Efficient Adaptation for Ubiquitous Web", *Proc. of the 2005 International Conference on High Performance Computing and Communications (HPCC 2005)*, Sorrento, Italia, September 2005
27. C. Canali, S. Casolari, R. Lancellotti, "Architectures for scalable and flexible Web personalization services", *Proc. of the 1st International Workshop on Advanced Architectures and Algorithms for Internet Delivery and Applications (AAA-IDEA 2005)*, Orlando, Florida, June 2005
28. C. Canali, V. Cardellini, M. Colajanni, R. Lancellotti, "Performance comparison of distributed architectures for content adaptation and delivery of Web resources", *Proc. of the 1st International Workshop on Services and Infrastructure for the Ubiquitous and Mobile Internet (SIUMI'05)*, Columbus, Ohio, June 2005
29. C. Canali, V. Cardellini, M. Colajanni, R. Lancellotti, Philip S. Yu, "A Two-level Distributed Architecture for Web Content Adaptation and Delivery", *Proc. of The IEEE/IPSJ Symposium on Applications and the Internet (SAINT 2005)*, Trento, Italia, January 2005

30. C. Canali, V. Cardellini, M. Colajanni, R. Lancellotti “Evaluating User-perceived Benefits of Content Distribution Networks”, *Proc. of the 2004 International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS’04)*, San Jose, California, July 2004
31. C. Canali, V. Cardellini, M. Colajanni, R. Lancellotti, P.S. Yu, “Co-operative architectures and algorithms for discovery and transcoding of multi-version content”, *Proc. of 8<sup>th</sup> Web Caching Workshop (WCW2003)*, Hawthorne, NY, USA, September 2003.
32. C. Canali, V. Cardellini, M. Colajanni, R. Lancellotti, P.S. Yu, “Co-operative TransCaching: a system of distributed proxy servers for Web content adaptation”, *Poster Proceedings of the 12<sup>th</sup> International World Wide Web Conference (WWW2003)*, Budapest, HU, May 2003.

The list of published papers is available at the following address:  
<http://weblab.ing.unimo.it/people/canali/>