Massimo Canonico

Date of birth: 07/11/1977 | **Nationality:** Italian | **Phone number:**

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About me:
Since 2022, I am an Associate Professor at the Computer Science Institute of the Department of Sciences and Technological Innovation at the University of Piemonte Orientale (Italy).

WORK EXPERIENCE

10/2022 – CURRENT
ASSOCIATE PROFESSOR UNIVERSITY OF PIEMONTE ORIENTALE

06/2021 – CURRENT
CEO OF 4SEC

4Sec is a start-up company which exploits IoT devices for safety purposes in many fields like health (i.e., hospitals, nursing homes) and work (i.e., construction sites, ships). 4Sec proposes solutions which combine Cloud Computing architecture, Mobile Application development and Machine Learning algorithms.

08/2006 – 10/2022
ASSISTANT PROFESSOR UNIVERSITY OF PIEMONTE ORIENTALE

Address Vercelli, Italy

12/2005 – 08/2006
SHORT-TERM RESEARCHER UNIVERSITY OF PIEMONTE ORIENTALE

Address Vercelli, Italy

EDUCATION AND TRAINING

02/2006 Torino, Italy
PH.D. IN COMPUTER SCIENCE University of Torino

Address Torino, Italy

01/2005 – 09/2005 Santa Barbara - California, United States
VISITING RESEARCHER Department of Computer Science, University of California

Address Santa Barbara - California, United States

04/2002 Vercelli, Italy
"LAUREA" DEGREE (SUMMA CUM LAUDE) IN COMPUTER SCIENCE University of Piemonte Orientale

Address Vercelli, Italy

08/2000 – 12/2000 Aberdeen, United Kingdom
ERASMUS EXCHANGE STUDENT University of Aberdeen

Address Aberdeen, United Kingdom

LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

ADDITIONAL INFORMATION

RESEARCH INTERESTS

Research interests

Massimo Canonico's research interests lie in two areas:
- **distributed computing systems**, with emphasis on automated, fault-tolerant and energy-aware resource management algorithms and techniques for large-scale distributed and HPC systems (e.g., Cloud/Edge/Fog systems);
- **digital forensics**, with emphasis on techniques, methodologies and tools for the automated forensic analysis of mobile devices, both Android and iOS.

SCIENTIFIC MANAGER IN RESEARCH PROJECTS

16/05/2021 – CURRENT
HealTracker (PI of the project)

App and cloud-based wearable multisensor device for COVID heal and risk subjected patients health tracking (68171.79€ funded by "Fondo integrativo speciale per la ricerca" **(FISR)).**

12/2020 – 06/2021
SPIA 2: Segnalazione Pericolo Investimento Animali

Design and implementation of a mobile app to prevent and avoid collisions between cars and wild animal. With respect to the previous version of the app, we implement various improvements (more details here). Project funded by provincia di Cuneo.

01/07/2020 – 04/07/2020
RedCare: Cloud, Sentiment analysis and natural language understanding for people with special needs. (best project award)

This project **won** the "TIM Smart Spaces Hackathon".

30/11/2017 – 02/12/2017
BlueReader: a smart web reader. (Best project award)

The project **won** the hackathon organized and funded by IBM.

12/2015 – 05/2016
SPIA: Segnalazione Pericolo Investimento Animali

Design and implementation of a mobile app to prevent and avoid collisions between cars and wild animal. Project funded by provincia di Cuneo.

08/2015 – 09/2016
GuidApp: l'audio guida per disabili visivi.

Design and implementation of a mobile app dedicated to blind people to facilitate the visit of museums and art galleries. Project funded by Camera di Commercio di Alessandria e Asti.

AWARDS AND RESEARCH FELLOWSHIPS

2020 – CURRENT
Member of the Google Cloud Faculty Expert Group

Massimo has been selected as member of the "Faculty Experts program" where a group of 20 educators collaborate and share their experience in teaching cloud computing.

2020 – CURRENT
AWS Educate Cloud Ambassador program

Massimo has been selected as AWS Educate Cloud Ambassador by Amazon where a group of educators and researchers collaborate and share their experiences in teaching and experimenting cloud computing.

2017
Best Paper Award for the paper entitled "A Game-Theoretic Approach to Coalition Formation in Fog Provider Federations".

Paper presented at the 3rd IEEE International Conference on Fog and Mobile Edge Computing (FMEC), 2018.

11/2005 – 08/2006
Post-doc fellowship in "Resource management policies and techniques in large distributed systems"

Fellowship at the University of Piemonte Orientale, Italy.

2003
Best Paper Award for the paper entitled "A Comparative Evaluation of High-Performance File Transfer Systems for Data-intensive Grid Applications"

Paper presented at *the 13th IEEE International Workshop on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE-2004).*

10/2002 – 11/2005
Ph.D. Fellowship

Computer Science Department, University of Turin, Italy.

03/2002 – 10/2002
Research fellowship in "Open Cluster Computing"

Research fellowship funded by Italian "Information Society Technologies innovation and research center" (C.S.P.), Italy.

05/2001 – 12/2001
Graduate fellowship in "Study and implementation of techniques to manage Data and Computational Grids"

Graduate fellowship funded by "National Institute of Nuclear Physics" (I.N.F.N), Italy

RESEARCH GROUPS

2019 – CURRENT
Member of European Cybercrime Training and Education Group (ECTEG)

The group aims to develop a training on Mobile Forensics, basic level, to replace the actual outdated course with the updated state of art processes, technical operations and good practices.

2019 – CURRENT
Member of Interdepartmental Research Center for Artificial Intelligence

The AI@UPO research center has been established in 2019, with the goal of being a center for the interdisciplinary studies concerning Artificial Intelligence (AI). Proponents of the initiative are researchers very active in the field of AI since several years. Every department of UPO has joined the center from the very beginning, providing a wide set of competences from Computer Science (the field where AI is actually

born), to other hard sciences, economics, social studies, law, humanities, pharmaceutical and medical sciences. (https://ai.uniupo.it/about-us)

2019 – CURRENT
Scientific responsible and coordinator of the Piemonte Orientale unit of the Smart Cities & Communities Lab, Consorzio Interuniversitario Nazionale per l'Informatica (CINI)

Smart Cities and Smart Communities are getting momentum, both in the national and international context, as shown by the large number of on-going activities on these specific topics. Many cities, also in Italy, have started programs aimed at achieving ambient sustainability, providing innovative services, involving citizens in the city governance, and promoting social inclusion. In few words, improving the quality of life.

2016 – CURRENT
Member of the CINI's Cyber Security National Laboratory

The Lab aims at taking part in the creation of the national cybersecurity ecosystem, systematizing the research excellence in the field of cybersecurity in Italy, and offering public and institutional decision-makers their contribution to apply safety measures to the Italian cyberspace and, yet, increasing the competitiveness of the national economic system.

2008 – CURRENT
Member of the Center for studies on Cybercrime

The Interdepartmental Study Center on Computer Crime (CSICI) of the University of Piedmonte Orientale was created with the primary objective of studying criminal phenomenologies from different points of view in order to identify and promote the development of tools and methodologies to face with computer-related crimes on both legislative and technical-scientific level.

2005 – CURRENT
Member and founder of the Distributed Computing System & Digital Forensics Research Group

The Distributed Systems and Digital Forensics (DSDF) research group focus its research activity in distributed computing systems and digital forensics.

2005 – CURRENT
Member of the CNIT

The National Inter-University Consortium for Telecommunications (CNIT) is a non-profit consortium, established in 1995, bringing together 38 public Italian universities to perform research, innovation and education/training activities in the field of the Information and Communication Technology.

PARTICIPATION IN RESEARCH PROJECTS

01/2016 – 02/2018
Towards a Knowledge-Intensive and Technology-enhanced Patient Emergency Management

Patients in emergency (e.g. stroke patients, pre-term born babies or accident victims) are normally taken to the closets hospital structure, which might be insufficiently equipped, in terms of human or instrumental resources, to address their needs. We propose tools and methodologies to overcome these issues. The work will advance research in process mining, Case-Based Reasoning, time series retrieval.

08/2010 – 09/2015
Smart FASI: Financial Advisor Smart Services Infrastructure

The Smart FASI project, funded by the Piedmont Region via the Polo ICT consortium, is a decision support system for the management of financial risk based, at an infrastructural / technological level, on Cloud and High Performance Computing and, at a methodological level, on stochastic-financial modeling techniques and Artificial Intelligence.

08/2010 – 12/2013
myMed: a cross-border computer network for contents exchange

The objectives of this project are the design, prototyping and experimentation of a mobile and geo-sensitive social network in order to improve the exchange of information and the creation of personalized services in the Alcotra cross-border zone.

03/2007 – 12/2010
The ShareGrid project

The ShareGrid project, funded by the Piedmont Region via the TOPIX Consortium, is a P2P Desktop Grid infrastructure based on the OurGrid middleware, that federates the resources provided by a set of small research laboratories to easily share and use their computing resources.

10/2002 – 11/2006
WebMinds: Broadband Middleware for Network Distributed Services

The main objective of the project was the study and development of a middleware infrastructure that provides a secure, reliable and continuously available support for access to content from stationary and mobile terminals. The contents came from shared data and multimedia content delivery providers. The project funded by the Italian MIUR under the FIRB initiative.

09/2002 – 12/2004
Grid Computing: Enabling Technologies for eScience

The objective of this project is to build a Grid Computing infrastructure able to share computational power and storage between various student labs located in the University of Piemonte Orientale, the University of Turin and the CSP research lab. Project funded by the Italian CNR.

SERVICES

01/2022 – CURRENT
Member of the department esecutive council (giunta).

03/2021 – CURRENT
Member of the faculty board of Doctoral Schools of the University of Turin

08/2006 – CURRENT
Program Chair or TPC member

I have served as Program Chair or TPC member of several international conferences and workshops.

08/2006 – CURRENT
Reviewer for several international journals and conferences in the areas of distributed systems and digital forensics.

08/2006 – CURRENT
Orientation initiatives manager for Computer Science students (resposabile orientamento per corso di laurea in informatica)

TEACHING

2017 – CURRENT
Cloud Computing for Science

Ph.D. in Computer Science curricula, University of Turin, Italy.

2012 – CURRENT
Mobile application development

Computer Science curricula, University of Piemonte Orientale, Italy.

2014 – CURRENT
Computer networks

Computer Science curricula, Univ. of Piemonte Orientale, Italy.

2006 – CURRENT
High Performance Computing

Computer Science curricula, University of Piemonte Orientale, Italy.

14/04/2021 – 28/04/2021
Cloud Computing: theory and practice - Erasmus Teaching Staff Mobility

Dept. of Computer Information Systems
Faculty of ICT, University of Malta
Erasmus Teaching Staff Mobility

2019 – 2021
Technological Innovations for disability

Lecturer and coordinator of the module entitled "Technological innovations" for the Master on "Disability and social inclusion - Disability manager and independent life".

2018 – 2020
Technologies for disability

Disability Management course, Law and Political, social and economical sciences curricula, University of Piemonte Orientale, Italy.

2009 – 2014
Fundamentals of Computer Science

Computer Science curricula, University of Piemonte Orientale, Italy.

2006 – 2015
Computer networks programming

Computer Science curricula, University of Piemonte Orientale, Italy.

2009 – 2013
Cloud computing and Software Services

Master for graduated students, Computer science curricula, University of Turin, Italy

2006 – 2013
Fundamentals of Computer Networks

distance-learning Master of science in Medicine, involving eleven Italian universities, led by the University of Rome "La Sapienza", Italy.

2006 – 2011
Fundamentals of Computer Science

Biological curricula, University of Piemonte Orientale, Italy.

2005 – 2007
Programming Languages

Physics curricula, University of Piemonte Orientale, Italy.

PUBLICATIONS

The prevention of falls in patients with Parkinson's disease with in-home monitoring using a wearable system: a pilot study protocol
– 2022
M. Canonico et al., *Journal of Aging clinical and experimental research*

Overview of Cloud Computing – 2022
M. Canonico and M. Wufka, Book under Creative Commons license, 2022

https://tcc.uniupo.it/educational-resources/cloud-computing-book

Intelligenza Artificiale in Medicina presso il Dipartimento di Scienze e Innovazione Tecnologica dell'Università del Piemonte Orientale
– 2022
M. Canonico et al., *Workshop AI for Health, Italy, 2022 (paper in Italian)*

Prediction Models for Public Health Containment Measures on COVID-19 Using Artificial Intelligence and Machine Learning: A Systematic Review

– 2021
Anil Babu Payedimarri, Diego Concina, Luigi Portinale, Massimo Canonico, Deborah Seys, Kris Vanhaecht, and Massimiliano Panella.
International Journal of Environmental Research and Public Health, vol. 18 (9), 2021

An educational toolkit for teaching cloud computing. – 2021
Cosimo Anglano, Massimo Canonico and Marco Guazzone.
In ACM SIGCOMM Computer Communication Review, 51(4), 2021.

Machine Learning implementation for an accelerometer-based wearable device for neonatal monitoring.

– 2021
F. Desimoni, M. Canonico, M. Ratti, L. Portinale and M. Panella.
IEEE-EMBS International Conference on Biomedical and Health Informatics BHI (IEEE BHI), Greece, 2021.

User action representation and automated reasoning for the forensic analysis of mobile devices. – 2021
Cosimo Anglano, Massimo Canonico, Laura Giordano, Marco Guazzone, Daniele Theseider Dupré.
In 16th International Conference on Availability, Reliability and Security (ARES), 2021.

Analysis of the Influence of the Length Scales in a Boundary-Layer Model. – 2021
Massimo Canonico and Enrico Ferrero.
Journal on Boundary-Layer Meteorology, 2021.

EasyCloud: Multi-clouds made easy – 2021
Cosimo Anglano, Massimo Canonico and Marco Guazzone. *IEEE Computers, Software, and Applications Conference (COMPSAC), 2021.*

Teaching Cloud Computing: Motivations, Challenges and Tools. – 2020
In *2020 IEEE International Parallel and Distributed Processing Symposium Workshops (IPDPSW)*, 2020.

Cosimo Anglano, Massimo Canonico, Marco Guazzone.

EasyCloud: a rule based toolkit for multi-platform Cloud/Edge service management. – 2020
In *5th International Conference on Fog and Mobile Edge Computing (FMEC), 2020.*

Cosimo Anglano, Massimo Canonico, Marco Guazzone.

Technical Solutions for Legal Challenges: Equality of Arms in Criminal Proceedings. – 2020
Global Jurist 20(1), 2020

Cosimo Anglano, Massimo Canonico, Marco Guazzone, S. Quattroccolo.

The Android Forensics Automator (AnForA): a tool for the Automated Forensic Analysis of Android Applications.

– 2020
Computer & Security, 88, 2020.

Cosimo Anglano, Massimo Canonico, Marco Guazzone.

An online user-driven task scheduling algorithm for FemtoClouds. – 2019
Proc. of the *4th International Conference on Fog and Mobile Edge Computing* (FMEC), 2019.

Cosimo Anglano, Massimo Canonico and Marco Guazzone

WQR-UD: An online scheduling algorithm for FemtoClouds. – 2019
Proc. of the *12th International Conference Evaluation Methodologies and Tools* (ValueTools 2019), 2019.

Cosimo Anglano, Massimo Canonico and Marco Guazzone

Profit-aware Resource Management for Edge Computing Systems. – 2018
Proc. of the *1st International Workshop on Edge Systems, Analytics and Networking (EdgeSys 2018)*, 2018.

Cosimo Anglano, Massimo Canonico and Marco Guazzone

A Game-Theoretic Approach to Coalition Formation in Fog Provider Federations. – 2018
Proc. of the 3rd IEEE International Conference on Fog and Mobile Edge Computing (FMEC), 2018. **Best Paper Award.**

Cosimo Anglano, Massimo Canonico, Paolo Castagno, Marco Guazzone and Matteo Sereno.

A Comparison and Critique of Natural Language Understanding Tools. – 2018
In CLOUD COMPUTING 2018: The Ninth International Conference on Cloud Computing, GRIDs, and Virtualization, Barcelona, Spain, February 18-22, 2018, pp. 110-115, ISBN: 978-1-61208-607-1.

Cosimo Anglano, Massimo Canonico and Marco Guazzone

Prometheus: A flexible toolkit for the experimentation with virtualized infrastructures. – 2018
Concurrency and Computation: Practice and Experience, 30(11), 2018.

Cosimo Anglano, Massimo Canonico and Marco Guazzone.

Forensic Analysis of Telegram Messenger on Android Smartphones. – 2017
Digital Investigation, 23:31-49, 2017.

Cosimo Anglano, Massimo Canonico and Marco Guazzone.

A telemedicine support for improving medical emergency management. – 2017
EAI Endorsed Transactions on Ambient Systems 17(16): e2, 2017.

M. Canonico, S. Montani and M. Striani.

TEEM: Technology-Enhanced Emergency Management for supporting data communication during patient transportation
– 2017
International Journal of Mobile Computing and Multimedia Communications 8(4) (2017) 49-65

S. Montani, M. Canonico, D. Gazzolo, M. Striani ans M.C. Strozzi.

FCMS: A Fuzzy Controller for CPU and Memory Consolidation under SLA Constraints. – 2017
Concurrency and Computation: Practice and Experience, 29(5), 2017

C. Anglano, M. Canonico and M. Guazzone.

Forensic Analysis of the ChatSecure Instant Messaging Application on Android Smartphones. – 2016
Digital Investigation, 19:44-59, 2016

C. Anglano, M. Canonico and M. Guazzone.

TEEM: a mobile app for technology-enhance emergency management. – 2016
Proc. of the 3rd International Conference on IoT Technologies for Healthcare, 2016 (published in Springer Lecture Notes)

M. Canonico, S. Montani and M. Striani

FC2Q: Exploiting Fuzzy Control in Server Consolidation for Cloud Applications with SLA Constraints. – 2015
Concurrency and Computation: Practice and Experience, 27:4491-4514, 2015

C. Anglano, M. Canonico and M. Guazzone.

CloudTUI-FTS: a user-friendly and powerful tool to manage Cloud Computing Platforms. – 2015
Proc. of the 9th International conference on Performance Evaluation Methodologies and Tools, 2015

M. Canonico and D. Monfrecola.

CloudTUI: a multi Cloud platform Text User Interface – 2013
Proc. of the 7th International conference on Performance Evaluation Methodologies and Tools, 2013

M. Canonico, A. Lombado and I. Lovotti.

Fuzzy-Q&E: achieving QoS guarantees and energy savings for cloud applications with fuzzy control. – 2013
Proc. of the *3rd International conference on Cloud and Green Computing (CGC)*, 2013

L. Albano, C. Anglano, M. Canonico and M. Guazzone

FutureGrid Education: Using Case Studies to Develop A Curriculum for Communicating Parallel and Distributed Computing Concepts.
– 2012
Proc. of the 1st International conference on Extreme Science and Engineering Discovery Environment (XSEDE), 2012.

J. Mitchell, J. Qiu, M. Canonico et al

Exploiting VM Migration for the Automated Power and Performance Management of Green Cloud Computing Systems.
– 2012
Proc. of the 1st International Workshop on Energy-Efficient Data Centres (E2DC 2012), 2012.

Marco Guazzone, Cosimo Anglano, and Massimo Canonico

Energy-Efficient Resource Management for Cloud Computing Infrastructures. – 2011
Proc. of the 3rd IEEE International Conference on Cloud Computing Technology and Science (CloudCom 2011), 2011

Marco Guazzone, Cosimo Anglano, and Massimo Canonico

The ShareGrid Peer-to-Peer Desktop Grid: Infrastructure, Applications, and Performance Evaluation.
– 2010
Journal of Grid Computing, 8(4), pp. 543-570, December 2010.

C. Anglano, M. Canonico and M. Guazzone.

Exploiting Overlay Networks Features to Enhance the Performance of the File Mover. – 2009
In proc. of 2nd International Workshop on Distributed Cooperative Laboratories - Instrumenting the Grid (INGRID07), S. Margherita Ligure (Italy), April 2009.

C. Anglano and M. Canonico.

The File Mover: High Performance Data Transfer for the Grid. – 2008
Concurrency and Computation: Practice and Experience, 20(1), pp. 99-123, January 2008.

C. Anglano and M. Canonico.

Peer-to-Peer Desktop Grids in the Real World: the ShareGrid Project. – 2008
In proc. of 8th International Workshop on Global and P2P Computing, co-located with CCGRID 2008, May 2008, Lyon, France.

C. Anglano, M. Canonico, M. Guazzone, M. Botta, S. Rabellino, S. Arena and G. Girardi.

Scheduling Algorithms for Multiple Bag-of-Task Applications on Desktop Grids: A Knowledge-Free Approach.
– 2008
In proc. of 2nd International Workshop on Desktop Grids and Volunteer Computing Systems (PCGRID 08), co-located with IPDPS 2008, April 2008, Miami, Florida, USA.

C. Anglano and M. Canonico.

Improving Performance of Fault-Aware Scheduling Policies for Desktop Grids (Be Lazy, Be Cool). – 2007
In proc. of 4th IEEE International Workshop on Emerging Technologies for Next-Generation GRID (ETNGRID 2007), Paris, June 2007

C. Anglano, M. Canonico.

Performance analysis of high-performance file transfer systems for Grid applications. – 2006
Concurrency and Computation: Practice and Experience, 18(8), pp. 807-816

C. Anglano, M. Canonico.

Fault-aware scheduling for Bag-of-Tasks applications on Desktop Grids. – 2006
In proc. of 7th IEEE/ACM International Conference on Grid Computing (GRID06), Barcelona, September 2006

C. Anglano, J. Brevik, M. Canonico, D.Nurmi, R. Wolski.

Fault-Tolerant Scheduling for Bag-of-Task Grid Applications. – 2005
Proceedings of the European Grid Conference (EGC05), Amsterdam, February 2005, (Lecture Notes in Computer Science n. 3470, pp. 630-639, Springer).

C. Anglano and M. Canonico.

A Comparative Evaluation of High-Performance File Transfer Systems for Data-intensive Grid Applications.
– 2004
Proceedings of the European Grid Conference (EGC05), Amsterdam, February 2005

C. Anglano, M. Canonico.

The File Mover: An Efficient Data Transfer System for Grid Applications. – 2004
In *proc. of the 2nd International Workshop on Grids and Advanced Networks (GAN04),* Chicago (USA), April 2004, IEEE Press

C. Anglano, M. Canonico