TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO   **ID CODE 5856**

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at Department of Computer Science "Giovanni Degli Antoni".

Scientist- in – charge: Prof. Marco Anisetti

Filippo Berto

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Filippo
Name	Berto

PRESENT OCCUPATION

Appointment	Structure
Dottorando (XXXVI cycle)	Department of Computer Science "Giovanni Degli Antoni", University of Milan

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Degree	Master's degree in computer science (LM-18)	University of Padua	2020
Specialization			
PhD			
Master			
Degree of medical specialization			
Degree of European specialization			
Other			

FOREIGN LANGUAGES

Languages	level of knowledge
English	B2 (First Certificate)

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2020	Predoctoral Research Fellowship found: HIT, University of Padua, "Securing Smart Building Devices"

TRAINING OR RESEARCH ACTIVITY

To meet the high standards of performance, security, and privacy that modern applications require, they are often built as a combination of services that run on diverse types of infrastructure, such as edge and cloud facilities. The research work has concentrated on two main aspects: i) methods to ensure the quality and reliability of complex distributed systems (for example, platforms that consist of many interconnected services, or networks that are based on services), and ii) techniques to enable deployments that are aware of and can adapt to the quality and reliability requirements in distributed environments.

The first area of research is focused on network systems, such as Content Delivery Networks, 5G networks, and service-based platforms, such as Big Data platforms. The second area of research explored advanced distributed infrastructures, such as the ones that span from Edge to Cloud, where edge nodes can be either local nodes or 5G Mobile Edge Computing nodes.

The overall goal of the research work has been to develop and apply a lightweight, collaborative, and distributed assurance methodology that can be target the several layers of the infrastructures that are hosting applications. Based on transparent monitoring, the proposed methodology provides the tools necessary to formally verify the validity of high-impact non-functional properties such as security, availability, and resilience. This has been effectively applied to several vertical projects, including Big Data platforms and Edge-Cloud compute platforms.

PROJECT ACTIVITY

Year	Project
2022-now	MUSA: Design of a cloud-edge architecture to support the project's research and development activities
2023-2023	IDAN 2023 Catalyst project: Definition and implementation of a business level API for the automation of resource management and application deployments in 5G networks
2022-2023	GSA H1 HUB: Design of a Big Data platform for the automation of data analysis pipelines in scientific research
2022-2023	SOV EDGE HUB: Design and implementation of a cloud-edge architecture for digital sovereignty in the life sciences
2021-2023	MindFoodsHub: Design and implementation of a Big Data platform for automatic analysis of experimental data
2020-2020	Videotec - Securing Smart building Devices: Development of a system for monitoring and predicting content popularity in Named Data Networks for identifying attacks.

CONGRESSES AND SEMINARS

Date	Title	Place
16/05/2023	The hitchhiker's guide to cloud services protocols: A critical overview on protocols for cloud-ready applications	Seminar: Master's degree in computer science, Cloud computing technologies, University of Milan

04/12/2023	A 5G-IoT enabled Big Data infrastructure for data-driven agronomy	Congress: IEEE Globecom 2022 Workshops, Rio de Janeiro
21/09/2022	A 5G-IoT enabled big-data infrastructure for data-driven agronomy	Congress: ITADATA 2022, Milan
19/10/2022	A Big Data Architecture for automatic data collection and elaboration	Seminar: PHD 1H HUB, during the PhD session for the GSA project 1H HUB, University of Milan
26/10/2022	An Assurance specialized Network Function for the 5G Core Network	Congress: CONCORDIA Open Door 2022, Munich
10/07/2022	A DevSecOps-based Assurance Process for Big Data Analytics	Congress: IEEE ICWS 2022, UPC Terrassa
05/09/2021	Security Certification Scheme for Content-centric networks	Congress: IEEE SCC 2021, Chicago
30/03/2020	Spatial bloom filter in named data networking: a memory efficient solution	Congress: ACM SAC 2020, Brno

PUBLICATIONS

Journal Articles
M. Anisetti, C. A. Ardagna, e F. Berto, «An assurance process for Big Data trustworthiness», Future Generation Computer Systems, vol. 146, pp. 34–46, 2023, doi: 10.1016/j.future.2023.04.003no
M. Anisetti, C. A. Ardagna, F. Berto, e E. Damiani, «A Security Certification Scheme for Information-Centric Networks», IEEE Trans. Netw. Serv. Manage., vol. 19, fasc. 3, pp. 2397–2408, set. 2022, doi: 10.1109/TNSM.2022.3165144

Conference/Workshop proceedings
M. Anisetti, F. Berto, e R. Bondaruc, «QoS-aware Deployment of Service Compositions in 5G-empowered Edge-Cloud Continuum», in 2023 IEEE International Conference on Cloud Computing (CLOUD), IEEE, 2023, (to appear)
M. Anisetti, F. Berto, e M. Banzi, «Orchestration of data-intensive pipeline in 5G-enabled Edge Continuum», in 2022 IEEE World Congress on Services (SERVICES), lug. 2022, pp. 2–10. doi: 10.1109/SERVICES55459.2022.00025
M. Anisetti, N. Bena, F. Berto, e G. Jeon, «A DevSecOps-based Assurance Process for Big Data Analytics», in 2022 IEEE International Conference on Web Services (ICWS), Barcelona, Spain: IEEE, lug. 2022, pp. 1–10. doi: 10.1109/ICWS55610.2022.00017
F. Berto et al., «A 5G-IoT enabled Big Data infrastructure for data-driven agronomy», in 2022 IEEE Globecom Workshops (GC Wkshps), Rio de Janeiro, Brazil: IEEE, 2022, pp. 588–594. doi: 10.1109/GCWkshps56602.2022.10008727
M. Anisetti, C. A. Ardagna, F. Berto, e E. Damiani, «Security Certification Scheme for Content-centric Networks», in 2021 IEEE International Conference on Services Computing (SCC), IEEE, 2021, pp. 203–212.

doi: 10.1109/SCC53864.2021.00033

F. Berto, L. Calderoni, M. Conti, e E. Losiouk, «Spatial bloom filter in named data networking: a memory efficient solution», in Proceedings of the 35th Annual ACM Symposium on Applied Computing, in SAC '20. Brno, Czech Republic: ACM, mar. 2020, pp. 274–277. doi: 10.1145/3341105.3374074

OTHER INFORMATION

International Research Fellowship, University of Galway, Ireland (06/2023 - 07/2023)

Development of an assurance methodology for continuous verification of non-functional properties of private 5G networks for IoT and Industry 4.0

Teaching activities
Programmazione - Prof. Marco Anisetti - University of Milan - A. A. 2022/2023 3/2023 – Teaching Assistant
Reti di calcolatori - Prof. Claudio A. Ardagna - University of Milan - A. A. 2022/2023
Seminar for the master's degree course "Cloud Computing Technologies" - University of Milan – A.A. 2022/2023
Co-supervised 10 thesis (6 Bachelor's, 4 Master's)

Program committee of international conferences
IEEE Cloud Summit 2023, July 2023, Columbia, MD, USA
17th International Conference on Signal Image Technology & Internet Based Systems (IEEE SITIS 2023), November 2023, Bangkok, Thailand
IEEE International Conference on Cloud Computing (IEEE CLOUD 2023), July 2023, Chicago, IL, USA
IEEE International Conference on Cloud Computing (IEEE CLOUD 2022), July 2022, Barcelona, Spain
16th International Conference on Signal Image Technology & Internet Based Systems (IEEE SITIS 2022), October 2022, Dijon, France
IEEE International Conference on Cloud Computing (IEEE CLOUD 2021), September 2021, Chicago, IL, USA

Publicity chair of international conferences
The 2nd Italian Conference on Big Data and Data Science (ITADATA), September 2023, Naples, Italy

Co-hosted a student-managed 20 hours course on version control systems, Git, CI/CD and DevOps.
Managed a development team of 7 people for 6 months during the "Software Engineering" course.
Cyber-security CTF player, part of the inter-university teams NoPwnIntended and Mhackeroni, participating to several high-level competitions, including DEFCON and HITCON finals.
Advanced experience with several programming languages, including Rust, Python C++, Haskell, Nix, Scala, Java, Go, JavaScript.
Advanced experience with Continuous Development, Continuous Deployment, Service Deployment, Project Management and Code Versioning tools.

External reviewer of international conferences

- IEEE International Conference on Fuzzy Systems (FUZZ-IEEE 2023), August 2023, Songdo Incheon, Korea
- 38th International Conference on ICT Systems Security and Privacy Protection (IFIP SEC 2023), June 2023, Poznan, Poland
- IEEE International Conference on Cloud Computing (IEEE CLOUD 2023), July 2023, Chicago, USA
- 37th ACM/SIGAPP Symposium on Applied Computing (ACM SAC 2022), April 2022, Brno, Czech Republic
- 3rd IEEE Workshop on Artificial Intelligence for HealthCare (AIHC 22), August 2022, Virtual
- IEEE Global Communications Conference (IEEE GLOBECOM 2022), December 2022, Rio de Janeiro, Brazil
- 16th International Conference on Signal Image Technology & Internet Based Systems (SITIS 22), October 2022, Dijon, France
- 21st International Conference on Trust, Security and Privacy in Computing and Communications

(IEEE TrustCom 2022), October 2022, Wuhan, China
- IEEE International Conference on Cloud Computing (IEEE CLOUD 2022), July 2022, Barcelona, Spain
- 37th International Conference on ICT Systems Security and Privacy Protection (IFIP SEC 2022), June 2022, Copenhagen, Denmark
- 14th International Conference on Utility and Cloud Computing (UCC 21), December 2021, Leicester, UK
- Theory of Cryptography Conference (TCC 2021), November 2021, Raleigh, USA
- 20st International Conference on Trust, Security and Privacy in Computing and Communications (IEEE TrustCom 2021), October 2021, Shenyang, China
- IEEE International Conference on Cloud Computing (IEEE CLOUD 2021), September 2021, Chicago, IL, USA
- 2nd IEEE Workshop on Artificial Intelligence for HealthCare (AIHC 2021), August 2021, Virtual

Reviewer for international journals

- IEEE Transactions on Services Computing
- IEEE Transactions on Cloud Computing
- IEEE Transactions on Consumer Electronics
- Springer Journal of Ambient Intelligence and Humanized Computing
- Elsevier Future Generation Computer Systems
- Mobile Information Systems

Pre-doc researcher

Human Inspired Technologies Research Centre, University of Pauda.

Securing Smart Building Devices:

- Analysis of security and privacy vulnerabilities such as unauthorized access, video manipulation, DoS (Denial of Service), corrupted firmware updates.
- designing solutions and countermeasures to prevent, mitigate and defend the system.
- analysing potential vulnerabilities of business processes and redefining them in a manner consistent with cyber security policies.

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Please note that CV WILL BE PUBLISHED on the University website and it is recommended that personal and sensitive data should not be included. This template is realized to satisfy the need of publication without personal and sensitive data.

Please DO NOT SIGN this form.

Place and date: 04/09/2023, Milano