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4th International Conference on Fog & Mobile Edge Computing (FMEC 2019)
Collocated with
6th International Conference on Software Defined Systems (SDS 2019)
Rome, Italy 10-13 June 2019

PROGRAMME

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4th International Conference on Fog & Mobile Edge Computing (FMEC 2019)

Collocated with

6th International Conference on Software Defined Systems (SDS 2019)

Rome, Italy 10-13 June 2019

PROGRAMME

	Monday 10-Jun	Tuesday 11-Jun	Wednesday 12-Jun	Thursday 13-Jun
08:00 - 17:00	On site registration	On site registration	On site registration	
08:30- 09:00				
09:00 - 9:30	Opening & Welcome	Keynote Speaker 3	Keynote Speaker 4	Social and Networking
9:30-10:00	Keynote speaker 1			
10:00 - 10:30		Panel	Coffee Break	
10:30 - 11:00	Coffee break		FMEC / SDS	
11:00 - 11:30	FMEC / SDS	Coffee break		
11:30 - 12:00		FMEC / PHD Forum		
12:00 - 12:30				
12:30-13:00			Lunch	
13:00 - 13:30	lunch	Lunch		
13:30 - 14:00			Short Papers / SDS	
14:00-15:00	Keynote speaker 2	FMEC-IOTNAT / SDS-BAT		
15:00 - 15:30	FNEC-SCE / SDS			
15:30 - 16:00			Coffee Break	
16:00 - 16:30		Coffee break	FMEC-SLICE / SDS-SDS_NFV	
16:30-17:00				
17:00 - 17:30	Coffee break	FMEC-IOTNAT / SDS-BAT		
17:30 - 18:00				
20:00-23:00		Gala Dinner		

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Monday 10th June 2019		
08:00 -	Onsite registration	
09:00 - 09:30	Opening & Welcome	
09:30 - 10:30	**Keynote speaker 1 –** Prof. Omer Rana, Cardiff University, UK Realizing Edge Marketplaces.	
10:30 - 11:00	Coffee break	
11:00 - 13:00	FMEC	Chair: Abdelhakim Hafid and Alessandro Randazzo
		• **On the Fog-Cloud Cooperation: How Fog Computing can address latency concerns of IoT applications** Amir Karamoozian, Abdelhakim Hafid and El Mostapha Aboulhamid • **On the Allocation of Computing Tasks under QoS Constraints in Hierarchical MEC Architectures** Michele Berno, Juan José Alcaraz, Michele Rossi • **Distributed Fair Randomized (DFR): a resource sharing protocol for fog providers** Roberto Beraldi, Huessein Alnuweiri • **Co-optimizing Latency and Energy for IoT services using HMP servers in Fog Clusters** Sambit Shukla, Dipak Ghosal, Kesheng Wu, Alex Sim, Matthew Farrens • **Recognizing Video Resolution by Monitoring Memory Metrics in Mobile Clients** Alessandro Randazzo, Ilenia Tinnirello • **Detecting and Predicting Anomalies for Edge Cluster Environments using Hidden Markov Models** Areeg Samir, Claus Pahl
11:00 - 13:00	SDS	Chair: Mehmet Demir and Emiliano Casalicchio
		• **Achieving High Performance with Virtualized Data Plane Workloads for 5G Networks** Dharma Rajan (SDN-NFV) • **Lightweight Virtualization Approaches for Software-Defined Systems and Cloud Computing: An Evaluation of Unikernels and Containers** Ilias Mavridis, Helen Karatza • **An MPTCP-compatible Load Balancing solution for pools of Servers in OpenFlow SDN networks** Pilar Manzanares-Lopez, Juan Pedro Muoz-Gea, Josemaria Malgosa-Sanahuja • **Blockchain Based Transparent Vehicle Insurance Management (BAT)** Mehmet Demir, Ozgur Turetken, Alexander Ferworn • **Use of Redundancy in the Design of a Secure Software Defined Industrial Control Application** Gabriele Gualandi, Emiliano Casalicchio

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		• **Securing Industrial Remote Maintenance Sessions using Software-Defined Networking** Alexander Kern, Reiner Anderl
13:00 - 14:00	**LUNCH**	
14:00 - 15:00	**(Industrial) Keynote speaker 2:** Mr. Dharma Rajan, VMWare Inc. USA. Software Defined Everywhere	
15:00 - 17:00	SCE	Chair: Elena Markoska and Philipp Kisters
		• **LEAF: Live Building Performance Evaluation Framework** Elena Markoska, Sanja Lazarova-Molnar • **Dynamic Routing Using Precipitation Data** Philipp Kisters, Dirk Bade, Julius Wulk • **Collaborative LoRa-Based Sensor Network for Pollution Monitoring in Smart Cities** Sandra Sendra, Jose Luis Garcia-Navas, Pablo Romero-Diaz, Jaime Lloret • **Water Conductivity Sensor based on Coils to Detect Illegal Dumpings in Smart Cities** Javier Rocher, Daniel A. Basterrechea, Miran Taha, Mar Parra, Jaime Lloret • **Real-time Traffic Management Model using GPU-enabled Edge Devices** M. Mazhar Rathore, Yaser Jararweh, Hojae Son, Anand Paul • **Securing High-Velocity Data: Authentication and Key Management Model for Smart City Communication** Muhammad Mazhar Ullah Rathore, Yaser Jararweh, Muhammad Raheel, Anand Paul • **A Dialected Tweets Sentiment Analysis in Smart Cities: A review** Shoayee Alotaibi, Rashid Mehmood and Iyad Katib
15:00 - 17:00	SDS	Chair: Luigi Vincenzo Mancini and Chrysa Papagianni
		• **Network Defragmentation in Virtualized Data Centers** Oliver Michel, Eric Keller, Fernando Ramos • **Multi-Covert Channel Attack in the Cloud** Mahdi Akil, Luigi Vincenzo Mancini, Daniele Venturi • **Machine Learning for Network Resiliency and Consistency** Ali Hussein, Ola Salman, Ali Chehab, Imad Elhajj, Ayman Kayssi • **A Survey on Android Malwares Detection Techniques Using Machine Learning Algorithms.** Ebtesam Alqahtani, Rachid Zagrouba, Abdullah Almuhaideb • **Evasion Attacks Against Watermarking Techniques found in MLaaS Systems** Dorjan Hitaj, Briland Hitaj, Luigi V. Mancini • **A Novel Weighted Interest Similarity Measurement for Recommender Systems Using Rating Timestamp** Bilal Hawashin, Shadi Alzubi, Dara Aqel and Yaser Jararweh • **Trust-Aware Service Chain Embedding** Nariman Torkzaban, Chrysa Papagianni, John Baras
17:00-18:00	**Coffee break and networking**	

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Tuesday 11th June		
08:00 - 17:00	Onsite registration	
09:00 - 10:00	**Keynote speaker 3:** Prof. Vincenzo Piuri, FIEEE, Università degli Studi di Milano, Italy Ambient intelligence: convergence of artificial intelligence, cloud-computing, internet-of-things, and biometrics for smart environments	
10:00-11:00	Panel Discussion Moderator:	
11:00 - 11:30	Coffee break	
11:30 - 13:00	FMEC session 2	Chair: Isaac Lera and Alouache Lylia • **Analysing the Applicability of a Multi-Criteria Decision Method in Fog Computing Placement Problem** Isaac Lera, Carlos Guerrero, Carlos Juiz • **Uncertainty-Aware Authentication Model for Fog Computing in IoT Mohammad** Heydari, Alexios Mylonas, Vasilios Katos, Emili Balaguer-Ballester, Vahid Heydari Fami Tafreshi, Elhadj Benkhelifa • **Securing Southbound Interface of HSDN-GRA Vehicular Routing Protocol using a Distributed Trust** Alouache Lylia, Maachaoui Mohamed, Aliouat Makhlouf, Chelouah Rachid • **Privacy-awareness of Users in our Cloudy Smart World** Gizem Gultekin Varkonyi, Attila Kertesz, Szilvia Varadi • **New caching system under uncertainty for Mobile Edge Computing** Sarra Mehamel, Samia Bouzefrane, Slimani Khaled and Mehammed Daoui
11:30 - 13:00	PhD Forum	Chair: Marco Guazzone and Attila Kertesz • **Self-Adaptive Healing for Containerized Cluster Architectures with Hidden Markov Models** Areeg Samir, Claus Pahl • **Distributed SDN controllers optimization for energy saving** Tadeu Ferreira Oliveira, Luiz Felipe Q. Silveira • **Local Regression Based Box-Cox Transformations for Resource Management in Cloud Networks** Mustafa Daraghmeh, Anjali Agarwal, Nishith Goel, Jim Kozlowski • **Enhancing Multipath TCP Security Through Software Defined Networking** Reem Melki, Ali Hussein, Prof. Ali Chehab
13:00 - 14:00	**Lunch**	

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14:00 - 16:00	IoTNAT Session 1	Chair: Martin Gergeleit and Gokay Saldamli • **Autotree: Connecting Cheap IoT Nodes with an Auto-Configuring WiFi Tree Network** Martin Gergeleit • **Network-Protocol-Based IoT Device Identification** Nesrine Ammar, Ludovic Noirie, Sebastien Tixeuil • **A Qualitative Comparison Model for Application Layer IoT Protocols** Syed Rameez Ullah Kakakhel, Tomi Westerlund, Masoud Daneshtalab, Zhuo Zuo, Juha Plosila, Hannu Tenhunen • **Smartwatches as IoT Edge Devices: A Framework and Survey** Nour Takiddeen, Imran Zualkernan • **Lifestyle Risk Association Aggregation** Enjie Liu, Emmanuel Effiok, Jon Hitchcock • **Wildfire detection using wireless mesh network** Gokay Saldamli, Sumedh Deshpande, Kaustubh Jawalekar, Pritam Gholap, Levent Ertaul, Loai Tawalbeh
14:00 - 16:00	BAT Session 1	Chair: Cong Tang and Gokay Saldamli • **Themis: Towards Decentralized Escrow of Cryptocurrencies without Trusted Third Parties** Cong Tang • **Using Blockchain Technology to Manage Membership and Legal Contracts in a Distributed Data Market** Sven Schlarb, Roman Karl, Ross King, Thomas J. Lampoltshammer, Lrinc Thurnay, Bernd-Peter Ivanschitz, Victor Mireles • **VNF Placement Strategy for Availability and Reliability of Network Services in NFV** Yanal Alahmad, Anjali Agarwal • **Blockchain based application for exchange of left over foreign currency** Gokay Saldamli, Shreyas Babji, Miroslav Grubic Miroslav Grubic, Nischala Raja Shekar, Chaitra Satyanarayana • **Immutable and Democratic Data in permissionless Peer-to-Peer Systems** Maximilian Ernst Tschuchnig, Eduard Hirsch, Anna-Maria Oberluggauer, Georg Schäfer, Peter Haber, Dejan Radovanovic
16:00-16:30	**Coffee break**	
16:30 - 18:00	IoTNAT Session 2	Chair: Stefano Forti and Michael Opoku Agyeman • **Analysis of Lightweight Message Authentication Codes for IoT Environments** Gokay Saldamli, Levent Ertaul, Asharani Maratkere Shankaralingappa • **A Power Management Approach to Reduce Energy Consumption for Edge Computing Servers** Mustafa Daraghmeh, Ismaeel Al Ridhawi, Moayad Aloqaily, Yaser Jararweh, Anjali Agarwal • **Making a Business Out of (Predictive Application Management in) the Fog** Antonio Brogi, Stefano Forti

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		• **ECC Based Lightweight Cybersecurity Solution For IoT networks Utilising Multi-Access Mobile Edge Computing** Eric Gyamfi, Lina Xu, James Adu Ansere • **Authorization in Cloud-Based Internet of Things: Current Trends and Use Cases** Smriti Bhatt, Lo'Ai Tawalbeh, Pankaj Chhetri and Paras Bhatt • **Design and Implementation of a Wearable Device for Motivating Patients With Upper and/or Lower Limb Disability Via Gaming and Home Rehabilitation** Michael Opoku Agyeman • **Design and Implementation of a Smart Meter System for Energy Efficient Smart Homes** Michael Opoku Agyeman
16:30 - 18:00	BAT Session 2	Chair: Gyeong-Jin Ra and Nafissatou Diarra • **A Study on Hybrid Blockchain-based XGS (XOR Global State) Injection Technology for Efficient Contents Modification and Deletion** Gyeong-Jin Ra, Im-Yeong Lee • **Choosing a Consensus Protocol for Use Cases in Distributed Ledger Technologies** Nafissatou Diarra • **Trust Requirements in Blockchain Systems: A Preliminary Study** Duoaa Khalifa, Nadya Abdel Madjid, Davor Svetinovic • **Exploring the impact of blockchain on digitized Supply Chain flows: A literature review** Padraig Scully and Michael Höbig • **Fuzzy-GRA Trust Model for Cloud Risk Management** Abdul Razaque, Muder Almiani, Amer Al-Rahayfeh, Basel Magableh, Ayman Al-Dmour, Meer Jaro Khan
20:00 - 23:00	**GALA DINNER** **Ristorante Da Meo Patacca** **Indirizzo: Piazza dei Mercanti 30, 00153 Roma** http://ristorantedameopatacca.it/	

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Wednesday 12th June		
09:00 - 10:00	**Keynote Talk 4-** Prof.Gennaro Boggia, Politecnico di Bari, Italy. Securing the IoT in the mobile edge computing era: from myth to reality	
10:00 - 10:30	**Coffee break**	
10:30 - 12:30	FMEC	Chair: Francesco Vatalaro and Saleh Atiewi • **Intrusion Detection for IoT Devices based on RF Fingerprinting using Deep Learning** Joshua Bassey, Damilola Adesina, Xiangfang Li, Lijun Qian, Alexander Aved, Timothy Kroecker • **Studying the Impact of CPU and Memory Controller Frequencies on Power Consumption of the Jetson TX1** Hazem A. Abdelhafez, Matei Ripeanu • **Edge Cloud Computing in telecommunications: Case studies on performance improvement and TCO saving** Gianfranco Ciccarella, Romeo Giuliano, Franco Mazzenga, Francesco Vatalaro, Alessandro Vizzarri • **OKAPI: In Support of Application Correctness in Smart Home Environments** Themis Melissaris, Kelly Shaw, Margaret Martonosi • **Coordinating Computation at the Edge: a Decentralized, Self-Organizing, Spatial Approach** Roberto Casadei, Mirko Viroli • **Bluetooth Application-Layer Packet-Filtering For Blueborne Attack Defending** Muder Almiani, Abdul Razaque, Liu Yimu, Meer Jaro Khan, Tang Minjie, Mohammed Alweshah, Saleh Atiewi • **Online user-driven task scheduling for FemtoClouds** Cosimo Anglano, Massimo Canonico, Marco Guazzone
10:30- 12:30	SDS	Chair: Muder Almiani and Md. Mazhar Rathore • **Synchronization of multiple USRP SDRs for coherent receiver applications** Markus Krueckemeier, Fabian Schwartau, Carsten Monka-Ewe, Joerg Schoebel • **RADIS: Remote Attestation of Distributed IoT Services** Mauro Conti, Edlira Dushku, Luigi Vincenzo Mancini • **Scalable Load Balancing Scheme for Distributed Controllers in Software Defined Data Centers** Mohamed Escheikh, Kamel Barkaoui • **Security flaws of operating system against live device attacks: A case study on live Linux distribution device.** Malik Junaid Gul, Rabia Riaz, Yaser Jararweh, Muhammad Mazhar Ullah Rathore, Anand Paul

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		• **Optimized Availability-Aware Component Scheduler for Applications in Container-Based Cloud** Yanal Alahmad, Tariq Daradkeh, Anjali Agarwal • **Intelligent Intrusion Detection Using Radial Basis Function Neural Network** Alia Abughazleh, Muder Almiani, Basel Magableh, Abdul Razaque
12:30 - 13:30	**LUNCH**	
13:30 - 15:30	Short papers	Chair: Marco Guazzone and Attila Kertesz • **Cooperative Fog Communications using A Multi-Level Load Balancing** Nour Mostafa • **Experimenting with a Fog-computing Architecture for Indoor Navigation** Monica Sebillo, Giuliana Vitiello, Pietro Battistoni • **Exploiting digital identity for mobility in Fog computing** Francesco Buccafurri, Gianluca Lax, Antonia Russo • **Network Slicing for End-to-End Latency Provisioning in Internet of Things** Kamil Macheta, Krzysztof Mateusz Malarski, Martin Nordal Petersen, Sarah Ruepp • **Run-Time Managed Mobile Application Execution** Michele Zanella, Giuseppe Massari, William Fornaciari • **Hybrid SDN-ICN Architecture Design for the Internet of Things** Huda Saadeh, Wesam Almobaideen, Khair Eddin Sabri, Maha Saadeh • **Towards Optimized Verification And Validation Of 5G Services** Marios Touloupou, Evgenia Kapassa, Argyro Mavrogiorgou, Dimosthenis Kyriazis • **An Efficient Multi-Objective Survivability Scheme for Mapping and Routing of Virtual Functions in Failure Scenarios** Diogo Oliveira, Jorge Crichigno, Elias Bou-Harb, Mohamed Rahouti, Nasir Ghani
13:30 - 15:30	SDS	Chair: Antonio Pescape and Sufyan Almajali • **eMES: Easing Maintenance of Entity Services in Service Oriented Software-Defined Internet of Things** Haiming Chen, Valerio Persico, Antonio Pescape • **Extending NS3 to Simulate Cognitive Radio Wireless Networks in a Jammed Environment** Sufyan Almajali, Haythem Bany Salameh, Moussa Ayyash, Hany Elgala • **An SDN-aided Information Centric Networking approach to Publish-Subscribe with Mobile Consumers** Paolo Benedetti, Agnese Vincenza Ventrella, Giuseppe Piro, Alfredo Grieco • **LiON: A L3 Protocol Agnostic Experimental Network Construction Tool Based on Infrastructure as Code** Kazuki Hayashi, Hiroki Watanabe, Takao Kondo, Fumio Teraoka • **A Study of the Forwarding Blackhole phenomenon during Software-Defined Network Updates** Amine Guidara, Saúl Eduardo Pomares Hernández, Lil María Xibai Rodríguez Henríquez, Hatem Hadj Kacem, Ahmed Hadj Kacem

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15:30-16:00		**Coffee break**
16:00 - 18:00	SLICE	Chair: Sateesh K. Peddoju and R. Venkatesha Prasad • **Usability Requirements for Smart Buildings' Performance Testing Solutions: A Survey** Elena Markoska, Sanja Lazarova-Molnar • **vProVal: Introspection based Process Validation for Detecting Malware in KVM-based Cloud Environment** Preeti Mishra, Ishita Verma, Saurabh Gupta, Varun S. Rana, Kavitha Kadarla • **Health Monitoring with Low Power IoT Devices using Anomaly Detection Algorithm** Suresh K Peddoju, Himanshu Upadhyay, Shekhar Bhansali • **Reinforcing Edge Computing with Multipath TCP Enabled Mobile Device Clouds** Venkatraman Balasubramanian, Kees Kroep, Kishor Chandra Joshi, R. Venkatesha Prasad • **The Advantage of Computation Offloading in Multi-Access Edge Computing** Raghubir Singh, Simon Armour, Aftab Khan, Mahesh Sooriyabandara, George Oikonomou • **LoRa for IoT: Integrating Edge Computing** Victor Kathan Sarker, Jorge Pea Queralta, Tuan Nguyen Gia, Tomi Westerlund, Hannu Tenhunen • **Machine Learning on Mobile: An On-device Inference App for Skin Cancer Detection** Xiangfeng Dai, Irena Spasic, Bradley Meyer, Samuel Chapman, Frederic Andres
16:00 - 18:00	SDS_NFV	Chair: and Sandra Sendra • **Accelerating Packet Classification with Two Class Cuckoo Filters (TC-CF)** Jorge Martínez, Pedro Reviriego Vasallo, Salvatore Pontarelli • **Dynamic provisioning of hardware accelerators in NFV environments** Gourav Prateek Sharma, Wouter Tavernier, Didier Colle, Mario Pickavet • **SDN-based Slice Orchestration and MAC Management for QoS delivery in IEEE 802.11 Networks** Pedro Heleno Isolani, Nelson Cardona-Cardenas, Carlos Donato, Johann Marquez-Barja, Lisandro Zambenedetti Granville, Steven Latré • **Enabling Scalability, Adaptivity, and Resilience in scalabilityCloud Applications by Software-defined M-Task-based Programming** Thomas Rauber, Gudula Rünger • **A Qualitative Cross-Comparison of Emerging Technologies for Software-Defined Systems** Awais Aziz Shah, Giuseppe Piro, Alfredo Grieco, Gennaro Boggia • **Managing a Multi-device Multimedia Service Using Software Defined Networks** Albert Rego-Mañez, Sandra Sendra, Jose Luis Garcia-Navas, Jaime Lloret
Thursday 13th June Social and Networking		

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PROGRAMME

Keynote Speech 1

Realizing Edge Marketplaces.

Prof. Omer Rana, Cardiff University, UK

Abstract:

The edge of the network has the potential to host services for supporting a variety of user applications, ranging in complexity from data preprocessing, image and video rendering, and interactive gaming, to embedded systems in autonomous cars and built environments. However, the computational and data resources over which such services are hosted, and the actors that interact with these services, have an intermittent availability and access profile, introducing significant risk for user applications that must rely on them. This talk will describe the development of an edge marketplace, which is able to support multiple providers for offering services at the network edge, and to enable demand supply for influencing the operation of such a marketplace. Resilience, cost, and quality of service and experience will subsequently enable such a marketplace to adapt its services over time. This talk will also describes how distributed-ledger technologies (such as blockchains) provide a promising approach to support the operation of such a marketplace and regulate its behavior (such as the GDPR in Europe) and operation. Application scenarios provide context for the discussion of how such a marketplace would function and be utilized in practice.

Biography:

Omer F. Rana is Professor of Performance Engineering at Cardiff University, with research interests in high performance distributed computing, data analysis/mining and multi-agent systems. He leads the Complex Systems Research Group. He was formerly the deputy director of the Welsh eScience Centre and had the opportunity to interact with a number of computational scientists across Cardiff University and the UK. He serves on the steering committee of Cardiff University's multi-disciplinary "Data Innovation" and "Energy Systems" Research Institutes. Rana has contributed to specification and standardisation activities via the Open Grid Forum and worked as a software developer with London-based Marshall Bio-Technology Limited prior to joining Cardiff University, where he developed specialist software to support biotech instrumentation. He also contributed to public understanding of science, via the Wellcome Trust funded "Science Line", in collaboration with BBC and Channel 4. Rana holds a PhD in "Neural Computing and Parallel Architectures" from Imperial College (London Univ.), an MSc in Microelectronics (Univ. of Southampton) and a BEng in Information Systems Eng. from Imperial College (London Univ.). He serves on the editorial boards (as Associate Editor) of IEEE Transactions on Parallel and Distributed Systems, (formerly) IEEE Transactions on Cloud Computing, IEEE Cloud Computing magazine and ACM Transactions on Internet Technology. He is a founding-member and associate editor of ACM Transactions on Autonomous & Adaptive Systems.

PROGRAMME

Keynote Speech 2

Software Defined Everywhere

Mr. Dharma Rajan, VMware Inc., USA

Abstract: Public, private, and hybrid clouds are now a de facto industry model. New cloud services are being introduced by the industry at a very fast pace. This keynote session will take you through the journey of cloud evolution, from enterprise to Telco to emerging edge clouds. Transformation that is happening in the industry with Software defined systems at compute, storage, networking layers with in-built security, management, process automation and Orchestration for on-premise and cross-cloud will be discussed. An industry perspective on how NFV deployment has become a great success across the industry and how 5G, virtual RAN and IoT cloud evolution will enable new service models will be shared.

Biography:

Dharma Rajan is a leading expert in cloud technology working as Distinguished Principal Solution Architect at VMware, USA. His areas of expertise span infrastructure virtualization, hybrid cloud, NFV, and cloud security. Prior to joining VMware, Dharma has worked at Ericsson, USA for over a decade, building 4G platform architectures, carrier grade networks, and network management systems. He has also worked at Cisco Systems, USA on enterprise architecture. He has several technical publications, patents, IETF contributions and is an invited speaker at major industry events and world conferences. He holds an MS in Computer Engineering from NCSU, USA and M.Tech in CAD from IIT-Kanpur, India.

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Keynote Speech 3

Ambient intelligence: convergence of artificial intelligence, cloud-computing, internet-of-things, and biometrics for smart environments

Prof.Vincenzo Piuri, FIEEE, Università degli Studi di Milano, Italy

Abstract: Adaptability and advanced services for ambient intelligence require an intelligent technological support for understanding the current needs and the desires of users in the interactions with the environment for their daily use, as well as for understanding the current status of the environment also in complex situations. This infrastructure constitutes an essential base for smart living. Various technologies are nowadays converging to support the creation of efficient and effective infrastructures for ambient intelligence. Artificial intelligence can provide flexible techniques for designing and implementing monitoring and control systems, which can be configured from behavioral examples or by mimicking approximate reasoning processes to achieve adaptable systems. Machine learning can be effective in extracting knowledge form data and learn the actual and desired behaviors and needs of individuals as well as the environment to support informed decisions in managing the environment itself and its adaptation to the people's needs. Biometrics can help in identifying individuals or groups: their profiles can be used for adjusting the behavior of the environment. Machine learning can be exploited for dynamically learning the preferences and needs of individuals and enrich/update the profile associated either to such individual or to the group. Biometrics can also be used to create advanced human-computer interaction frameworks. Cloud computing environments will be instrumental in allowing for world-wide availability of knowledge about the preferences and needs of individuals as well as services for ambient intelligence to build applications easily. This talk will analyze the opportunities offered by these technologies to support the realization of adaptable operations and intelligent services for smart living in ambient intelligent infrastructures.

Biography: Vincenzo Piuri has received his Ph.D. in computer engineering at Politecnico di Milano, Italy (1989). He is Full Professor in computer engineering at the Università degli Studi di Milano, Italy (since 2000). He has been Associate Professor at Politecnico di Milano, Italy and Visiting Professor at the University of Texas at Austin and at George Mason University, USA. His main research interests are: artificial intelligence, computational intelligence, intelligent systems, machine learning, pattern analysis and recognition, signal and image processing, biometrics, intelligent measurement systems, industrial applications, digital processing architectures, fault tolerance, dependability, and cloud computing infrastructures. Original results have been published in more than 400 papers in international journals, proceedings of international conferences, books, and book chapters. He is Fellow of the IEEE, Distinguished Scientist of ACM, and Senior Member of INNS. He has been IEEE Vice President for Technical Activities (2015), IEEE Director, President of the IEEE Computational Intelligence Society, Vice President for Education of the IEEE Biometrics Council, Vice President for Publications of the IEEE Instrumentation and Measurement Society and the IEEE Systems Council, and Vice President for Membership of the IEEE Computational Intelligence Society. He is Editor-in-Chief of the IEEE Systems Journal (2013-19), and Associate Editor of the IEEE Transactions on Cloud Computing and IEEE Access, and has been Associate Editor of the IEEE Transactions on Computers, the IEEE Transactions on Neural Networks and the IEEE Transactions on Instrumentation and Measurement. He received the IEEE Instrumentation and Measurement Society Technical Award (2002). He is Honorary Professor at: Obuda University, Hungary; Guangdong University of Petrochemical Technology, China; Northeastern University, China; Muroran Institute of Technology, Japan; and the Amity University, India

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Keynote Speech 4

Securing the IoT in the mobile edge computing era: from myth to reality

Prof.Gennaro Boggia, Politecnico di Bari, Italy.

Abstract: The Internet of Things (IoT), with its promise to create a connect world, with billions of interconnected smart objects, will pave the way to novel pervasive services in many application domains. But the heterogeneity of connected devices and considered scenarios together with the huge number of involved communication nodes require particular attention for security issues. To effectively deploy the IoT in the real world, it is very important to secure the systems, ensuring data availability, privacy, integrity, trustiness. But taking into account, at the same time, that considered interconnected “things” have, in general, low computational, storage, energy capabilities, and they adopt, at the same time, different communication standards. With this premise, starting from the general description of IoT, this talk will consider the interaction between different IoT domains and the related security issues. With reference to some significant use cases, considering also the possibility of exploiting the edge application services available at the boundary of core networks, security problems will be analyzed and critical aspects will be highlighted. New developed solutions for partially solving some of the considered issues will be also described more in depth.

Biography: Gennaro Boggia received, with honors, the Dr. Eng. and Ph.D. degrees in electronics engineering, both from the Politecnico di Bari, Bari, Italy, in Jul. 1997 and Mar. 2001, respectively. Since Sep. 2002, he has been with the Department of Electrical and Information Engineering, Politecnico di Bari, where he is currently a Full Professor in Telecommunications. From May 1999 to December 1999, he was a Visiting Researcher with the TILab, TelecomItalia Lab, Torino, Italy, where he was involved in the study of the core network for the evolution of 3G cellular systems. In 2007, he was a Visiting Researcher at FTW, Vienna, Austria, where he was involved in activities on passive and active traffic monitoring in 3G networks. He has authored or coauthored more than 150 papers in international journals or conference proceedings, gaining more than 5000 citations (source: Google Scholar). He is active in the IETF ICNRG WG and in the IEEE WG 6TiSCH. He is also regularly involved as a Member of the Technical Program Committee of many prestigious international conferences. His research interests include the fields of Internet of Things (IoT), Network Security, Security in Iot, Wireless Networking, Cellular Communication, Information Centric Networking (ICN), Protocol stacks for industrial applications, Internet measurements, Network Performance Evaluation. Dr. Boggia is currently an Associate Editor for the IEEE Commun. Mag., the ETT Wiley Journal, and the Springer Wireless Networks journal.

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1- The Fifth International Workshop on Internet of Things: Networking Applications and Technologies (IoTNAT 2019) .
http://emergingtechnet.org/IOTNAT2019/index.php

2- The Third international workshop on Software Defined Networks and Network Function Virtualization (SDN-NFV 2019)
http://emergingtechnet.org/SDN-NFV2019/

3- The Third International Workshop on Smart Cities Systems Engineering (SCE 2019)
http://emergingtechnet.org/SCE2019/index.php

4- The Second International Workshop on Smart Living with IoT, Cloud, and Edge Computing (SLICE 2019)
http://www.peddoju.com/slice2019/

5- The First International Workshop on Blockchain Applications and Theory (BAT 2019)
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6- The Third International Symposium on 5G Emerging Technologies (5GET 2019)
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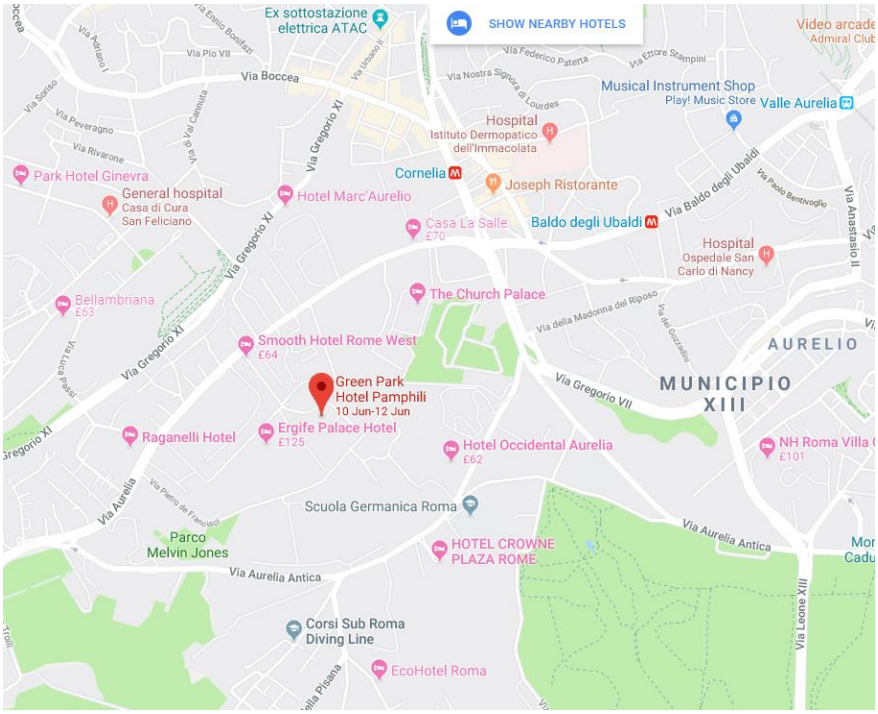
The Venue

The conference will be held at ELE Green Park Hotel Pamphili, Rome. The ELE Green Park Hotel Pamphili is located in the residential area 'Aurelio' only 5 km away from the historic center of Rome, easily reachable in a short metro ride: in just 4 stops you get to the Vatican's and in about 30 minutes you reach Termini Railways station.

The nearest subway station CORNELIA can be reached in about 10 minutes walking (1 km) or within 2 bus stops, bus № 246 or № 247 (the nearest bust stop is only 300 meters from the hotel entrance). Rome Fiumicino Airport is located just 20 km from the ELE Green Park Hotel Pamphili and can be reached in about 30 minutes' drive.

Aurelio area is well known also because of Villa Pamphili, exquisite example of an ancient Roman noble country estate. The Doria Pamphilj complex, with its 184 hectares representing the largest park in the city, is definitely worth a visit during your stay at our ELE Green Park Hotel Pamphili.

Venue Address:
ELE Green Park Hotel Pamphili
Largo Lorenzo Mossa, 4 · Italy, Roma



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