Short Paper [S]

Vision Paper [V]

Application Paper [A]

	Monday, June 5, 2017		
8:00- 19:00		Registration	
8:30- 9:00	Auditorium	Workshops Opening [session co-chairs: Irene Garrigos and Manuel Wimmer]	
	Auditorium	Liquid Multi-Device Software: 2nd International Workshop on Liquid Multi-Device Software and EnWoT: 1st International Workshop on Engineering the Web of Things Keynote speech.	
		practi-O-web: International Workshop on The Practice Of The Open Web Roberto Rodriguez-Echeverria, Javier Luis Cànovas Izquierdo and Jordi Cabot. Towards a UML and IFML mapping to GraphQL	
9:00-	Room 1	Monica Scannapieco, Raffaella Aracri, Roberta Radini and Laura Tosco. Using Ontologies for Official Statistics: the Istat Experience Lalit Sanagavarapu, Sourav Sarangi and Y. Raghu Reddy.	
10:30		ABC Algorithm for URL Extraction Simone Porreca, Francesco Leotta, Massimo Mecella, Stavros Vassos and Tiziana Catarci. Accessing Government Open Data through Chatbots	
	Room 2	NLPIT - 3rd International Workshop on Natural Language Processing for Informal Text Introduction Keynote speech: Roberto Navigli. Overcoming the Language Barrier with BabelNet and Multilingual Disambiguation of Text	
		Hamdy Mubarak. Analysis and Quantitative Study of Egyptian Dialect On Twitter	
10:30- 11:00	Atrium	Coffee Break	
	Auditorium	Liquid Multi-Device Software: 2nd International Workshop on Liquid Multi-Device Software and EnWoT: 1st International Workshop on Engineering the Web of Things	
11:00- 12:30		Antti Luoto and Kari Systä. IoT Application Deployment Using Request-response Pattern with MQTT Miika Kalske, Niko Mäkitalo and Tommi Mikkonen. Challenges when Moving from Monolith to Microservice Architecture Carmelo Ardito, Giuseppe Desolda and Maristella Matera. Engineering Task Automation Systems for Domain Specificity	
12.50	Room 1	practi-O-web: International Workshop on The Practice Of The Open Web Keynote speech: Domenico Fabio Savo. Discussion Giulio Ganino, Domenico Lembo and Federico Scafoglieri.	
		Ontology Population from Raw Text Corpus for Open-Source Intelligence	

		Lalit Sanagavarapu, Sourav Sarangi and Y. Raghu Reddy. ABC Algorithm for URL Extraction
		Simone Porreca, Francesco Leotta, Massimo Mecella, Stavros Vassos and Tiziana Catarci. Accessing Government Open Data through Chatbots
		NLPIT - 3rd International Workshop on Natural Language Processing for Informal Text
	Room 2	Diego Esteves, Rafael Peres and Jens Lehmann. Named Entity Recognition in Twitter using Images and Text Jonathan Wintrode, Nhat Bui, Jan Stepinski and Chris Reed. Online Expectation Maximization for Language Characterization of Streaming Text Wrap Up and Closing
12:30- 13:30	Gallery	Lunch
		Liquid Multi-Device Software: 2nd International Workshop on Liquid Multi-Device Software and EnWoT: 1st International Workshop on Engineering the Web of Things
	Auditorium	Francesco Nocera and Angelo Parchitelli. An adaptive model for Semantic Complex Event Processing-driven Social Internet of Things Network
		Maurizio Leotta, Filippo Ricca, Diego Clerissi, Davide Ancona, Giorgio Delzanno, Marina Ribaudo and Luca Franceschini. Towards an Acceptance Testing Approach for Internet of Things Systems Fernando Serena, María Poveda-Villalón and Raúl García-Castro.
13:30- 15:00		Semantic Discovery in the Web of Things Francesco Bruni, Pomo Claudio and Gaetano Murgolo. Back-End Data sharing pattern applied to a real world scenario [Demo Paper]
10.00	Room 1	SoweMine - 3rd International Workshop on Mining the Social Web Spiros Sirmakessis. Mining the Social Web: Introduction to Workshop Activities Evanthia Faliagka, Kostas Ramantas, Maria Rigou and Spiros Sirmakessis. Measuring personal branding in Social Media: Towards an Influence Indication score Andrea Caielli, Marco Brambilla, Stefano Ceri and Florian Daniel. Harvesting Knowledge from Social Networks: Extracting Typed Relationships among Entities
		Enaitz Ezpeleta, Inaki Garitano, Ignacio Arenaza-Nuno, Urko Zurutuza and Jose Maria Gomez Hidalgo. Novel Comment Spam Filtering Method on Youtube: Sentiment Analysis and Personality Recognition
15:00- 15:30	Atrium	Coffee Break
		<u>Liquid Multi-Device Software: 2nd International Workshop on Liquid Multi-Device Software</u> and <u>EnWoT: 1st International Workshop on Engineering the Web of Things</u>
15:30- 17:00		Sivamani Tnangavel and Kari Systä. Liquid Transfer of User Identity Valerio Francesco Annese, Giovanni Mezzina and Daniela De Venuto. Wireless Brain-Computer Interface for Wheelchair Control by Using Fast Machine Learning and Real-Time Hyper-Dimensional Classification
		Jyri Lehvä, Niko Mäkitalo and Tommi Mikkonen. Case Study: Building a Serverless Messenger Chatbot

		Paolo Buono, Fabio Cassano, Alessandra Legretto and Antonio Piccinno. A Homemade Pill Dispenser Prototype Supporting Elderly [Demo Paper]
		SoWeMine - 3rd International Workshop on Mining the Social Web
	Room 1	Fabio Calefato, Giuseppe Iaffaldano, Filippo Lanubile, Antonio Lategano and Nicole Novielli. Mining Communication Data in a Music Community: A Preliminary Analysis
		Brigitte Juanals and Jean-Luc Minel. Analyzing Museums and Key Influential Users on Twitter during the 'European Night of Museums 2016'
		Open Discussion and Workshop Conclusions
18:00- 20:00	Atrium	Welcome Reception

	Tuesday, June 6, 2017		
8:00- 18:00		Registration	
8:30- 9:00	Auditorium	ICWE Opening [session co-chairs: Riccardo Torlone, Roberto De Virgilio and Jordi Cabot] Welcome Message from Prof. Paolo Atzeni Dean of the Department of Engineering, Roma Tre University.	
9:00- 10:30		ICWE Keynote 1: Barry Smith FROM USER-GENERATED REVIEWS TO RECOMMENDATIONS & EXPLANATIONS [session chair: Jordi Cabot] Recommender systems are now a familiar part of the digital landscape helping us to choose which movies to watch and books to read. They guide us about where to stay and eat when we travel. They help us to keep in touch with friends and may even influence our choice of a mate. To do this recommender systems require data. Lots of data. In the early years this data came in the form of our online transactions and item ratings. More recently recommendations have been influenced by our social networks, the connections that link us, and the things that we share with others. Today there is a new form of data that has the potential to drive recommender systems of the future: user-generated reviews. Reviews are now a routine part of how we make decisions, large and small. Most of us wouldn't dream of booking a hotel without first checking out its reviews and companies like TripAdvisor and Yelp have build billion dollar enterprises on the opinions of millions of people. In this talk we will discuss the role of user generated reviews in a new generation of recommender systems and some of the ways that opinions can be leveraged to better understand users and generate new forms of recommendations. We will focus on how opinion mining techniques can be used to extract features and sentiment from unstructured review text and ways to use this information in recommendation ranking and explanation.	
10:30- 11:00	Atrium	Coffee Break	
11:00- 12:30	Auditorium	 Web Data Management - Session 1 [session chair: Gerd Wagner] Gabriela Bosetti, Sergio Firmenich, Alejandro Fernandez, Marco Winckler and Gustavo Rossi From Search Engines to Augmented Search Services: An End-User Development Approach [T] Dennis Diefenbach, Kuldeep Singh, Andreas Both, Didier Cherix, Christoph Lange and Sören Auer The Qanary Ecosystem: getting new insights by composing Question Answering pipelines [T] Sarven Capadisli, Amy Guy, Ruben Verborgh, Christoph Lange, Sören Auer and Tim Berners-Lee Decentralised Authoring, Annotations and Notifications for a Read-Write Web with dokieli [A] 	
		Tutorial: Liquid Web Applications Andrea Gallidabino, Tommi Mikkonen, Niko Mäkitalo, Cesare Pautasso, Kari Systä, Antero Taivalsaari and Jari-Pekka Voutilainen As the users possess a growing number of personal computers, smart phones, tablets, and other connected computing devices, the architecture of Web applications needs to be redesigned to enable truly seamless cross-device and multi-device use. In this tutorial, we address the Liquid Software concept in the context of Web applications. Liquid Web applications not only can take full advantage of the computing, storage and communication resources available on all devices	

		owned by the end user, but also can seamlessly and dynamically migrate from one device to another, continuously following the user's attention and context. We survey how and to which extent Web technologies can support the novel requirements of Liquid Software, showing technology demonstrations that will be discussed hands-on, at the level of source code.
12:30- 13:30	Gallery	Lunch
13:30-15:00	Auditorium	Crowd and social media - Session 1 [session chair: Manuel Wimmer] • Ilio Catallo and Davide Martinenghi The Dimensions of Crowdsourcing Task Design [S] • Francesco Buccafurri, Gianluca Lax, Serena Nicolazzo and Antonino Nocera Tweetchain: an Alternative to Blockchain for Crowd-Based Applications [S] • Paolo Missier, Callum McClean, Jonathan Carlton, Diego Cedrim, Leonardo Silva, Alessandro Garcia, Alexandre Plastino and Alexander Romanovsky Recruiting from the network: discovering Twitter users who can help combat Zika epidemics [S] • Fabian Gilson, Andrè Bittar and Pierre-Yves Schobbens Public Debates on the Web [A] • Michela Fazzolari, Marinella Petrocchi, Alessandro Tommasi and Cesare Zavattari Mining Worse and Better Opinions: Unsupervised and Agnostic Aggregation of Online Reviews [A]
	Room 1	Tutorial: Liquid Web Applications Andrea Gallidabino, Tommi Mikkonen, Niko Mäkitalo, Cesare Pautasso, Kari Systä, Antero Taivalsaari and Jari-Pekka Voutilainen As the users possess a growing number of personal computers, smart phones, tablets, and other connected computing devices, the architecture of Web applications needs to be redesigned to enable truly seamless cross-device and multi-device use. In this tutorial, we address the Liquid Software concept in the context of Web applications. Liquid Web applications not only can take full advantage of the computing, storage and communication resources available on all devices owned by the end user, but also can seamlessly and dynamically migrate from one device to another, continuously following the user's attention and context. We survey how and to which extent Web technologies can support the novel requirements of Liquid Software, showing technology demonstrations that will be discussed hands-on, at the level of source code
	Room 2	PhD Symposium [session chair: Oscar Diaz] The symposium is arranged as a workshop where PhD students present their projects along the main landmarks of the Design Science (DS) methodology. For each landmark, (i) a brief introduction is first given by the PhD chairs, (ii) next, students flesh out these landmarks for their projects on the spot (iii) finally, a sharing presentation is made. Time is disposed along the main DS landmarks (from Johannesson & Perjons). • Design and Develop Artefact This activity creates an artefact that addresses the explicated problem and fulfils the defined requirements. • Demonstrate Artefact Artefact development for an illustrative or real-life case, proving the feasibility of the artefact. • Evaluate Artefact Analyse how well the artefact fulfils the requirements and to what extent it can solve, or alleviate, the practical problem that motivated the research.

		Case Studies
		 Yiea-Funk Te and Irena Pletikosa Cvijikj Design of a Small and Medium Enterprise Growth Prediction Model Based on Web Mining Alejandro Pèrez-Vereda and Carlos Canal A people-oriented paradigm for smart cities Bahareh Zarei Mohammadzadeh and Martin Gaedke Intelligent End-User Development Platform towards Enhanced Decision-Making Eleonora Cappelli and Emanuel Weitschek Extending the Genomic Data Model and the Genometric Query Language with Domain Taxonomies Lalit Sanagavarapu CSQuaRE: Approach for Quality Control in Crowdsourcing Diego Collarana A Semantic Integration approach for Building Knowledge Graphs On-Demand
15:00- 15:30	Atrium	Coffee Break
15:30- 17:00	Auditorium	 Big Data and Semantic Web - Session 1 [session chair: Alfredo Cuzzocrea] Carlo Bernaschina, Marco Brambilla, Andrea Mauri and Eric Umuhoza A Big Data Analysis Framework for Model-Based Web User Behavior Analytics [T] Camilo Morales, Diego Collarana, Maria-Esther Vidal and Sören Auer MateTee: A Semantic Similarity Metric Based on Translation Embeddings for Knowledge Graphs [T] Sören Auer, Simon Scerri, Mohamed Nadjib Mami, Jens Lehmann, Hajira Jabeen, Ivan Ermilov, Aad Versteden, Stasinos Konstantopoulos, Vangelis Karkaletsis, Victor de Boer, Ronald Siebes, Manolis Koubarakis, Luigi Selmi, Sergio Albani, Angelos Charalambidis, Maria Esther Vidal and Axel-Cyrille Ngonga Ngomo The BigDataEurope Platform - Supporting the Variety Dimension of Big Data [T] Simone Cattani, Stefano Ceri, Abdulrahman Kaitoua and Pietro Pinoli Evaluating Genomic Big Data Operations on SciDB and Spark [A]
	Gallery	 Gabriela Bosetti, Sergio Firmenich, Gustavo Rossi and Marco Winckler Supporting Mobile Web Augmentation by end users Alejandro Cortiñas, Carlo Bernaschina, Miguel R. Luaces and Piero Fraternali Improving GISBuilder with Runtime Product Preview Jesus M. Almendros-Jimenez and Antonio Becerra-Teron
	Room 2	PhD Symposium [session chair: Oscar Diaz] Case Studies

		 Yiea-Funk Te and Irena Pletikosa Cvijikj Design of a Small and Medium Enterprise Growth Prediction Model Based on Web Mining Alejandro Pèrez-Vereda and Carlos Canal A people-oriented paradigm for smart cities Bahareh Zarei Mohammadzadeh and Martin Gaedke Intelligent End-User Development Platform towards Enhanced Decision-Making Eleonora Cappelli and Emanuel Weitschek Extending the Genomic Data Model and the Genometric Query Language with Domain Taxonomies Lalit Sanagavarapu CSQuaRE: Approach for Quality Control in Crowdsourcing Diego Collarana A Semantic Integration approach for Building Knowledge Graphs On-Demand
17:00- 18:30	Auditorium	 Engineering Web Application - Session 1 [session chair: Niko Makitalo] Carlo Bernaschina ALMOsT.js: an Agile Model to Model and Model to Text Transformation Framework [T] Eda Koksal, Yeliz Yesilada and Simon Harper Twisting Web Pages for Saving Energy [T] Andrea Gallidabino and Cesare Pautasso Maturity Model for Liquid Web Architectures [T] Manuel Wimmer, Irene Garrigos and Sergio Firmenich Towards Automatic Generation of Web-based Modeling Editors [S]

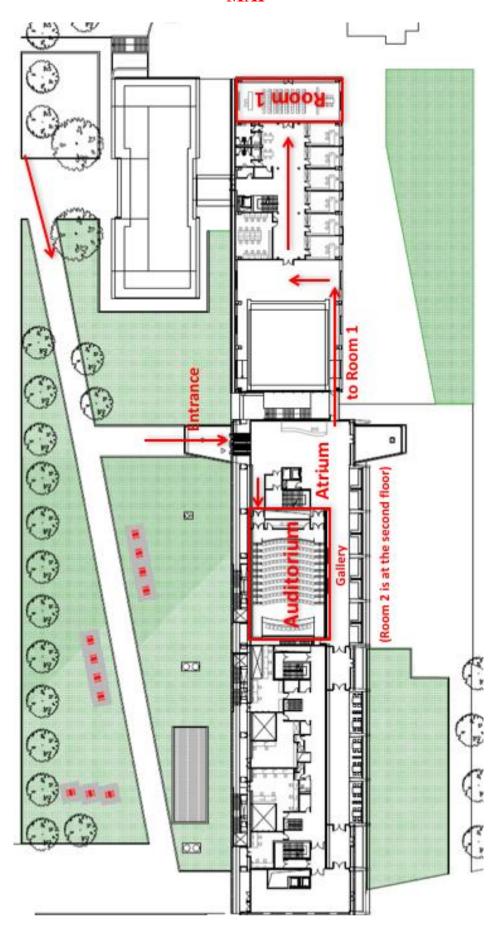
	Wednesday, June 7, 2017			
8:00- 17:00		Conference Registration		
9:00- 10:30	Auditorium	ICWE Keynote 2: Carlo Batini BIG DATA, ABSTRACTIONS, QUALITY [session chair: Paolo Atzeni] Big Data need for Abstractions, since their volume and velocity, together with their variety and veracity, request powerful mechanisms for representing a complex reality, while removing details and highlighting meaningful aspects. Abstractions are at the base of a wide number of disciplines such as Conceptual Modeling, Mathematics, Visualization, Formal Models, and others. Abstractions need for Quality, as the process for their production and usage is deeply influenced by their nature and variety. Quality of Abstractions and Quality of Big Data are intertwined and influence each other. In the invited speech an attempt will be made to discuss the most relevant issues on the above mentioned concepts and on their relationships.		
10:30- 11:00	Atrium	Coffee Break		
11:00- 12:30	Auditorium	Big Data and Semantic Web - Session 2 [session chair: Roberto De Virgilio] • Marwan Al-Tawil, Vania Dimitrova, Dhavalkumar Thakker and Alexandra Poulovassilis Evaluating Knowledge Anchors in Data Graphs against Basic Level Objects [T] • Ananya Dass and Dimitri Theodoratos Trading off Popularity for Diversity in the Results Sets of Keyword Queries on Linked Data [T] • Natanael Arndt and Michael Martin Decentralized Evolution and Consolidation of RDF Graphs [T] • Maxim Bakaev, Vladimir Khvorostov, Sebastian Heil and Martin Gaedke Web Intelligence Linked Open Data for Website Design Reuse [S]		
	Room 1	This tutorial presents a model-based approach to developing plain JavaScript web applications with responsive constraint validation, enumeration attributes, uni- and bidirectional associations, and inheritance in class hierarchies. It also shows how to implement the discussed information management concepts and techniques in a generic way in the form of three model-based development libraries: cLASSjs, mODELcLASSjs and mODELvIEWjs.		
12:30- 13:30	Gallery	Lunch		
13:30- 15:00	Auditorium	 Web Data Management - Session 2 [session chair: Marco Brambilla] Kevin Corre, Simon Bècot, Olivier Barais and Gerson Sunyè A WebRTC Extension to Allow Identity Negotiation at Runtime [S] Emilia Kacprzak, Laura Koesten, Luis-Daniel Ibáñez, Elena Simperl and Jeni Tennison A Query Log Analysis of Dataset Search [S] Hamza Ed-Douibi, Javier Luis Canovas Izquierdo and Jordi Cabot A UML profile for OData Web APIs [S] Devis Bianchini, Valeria De Antonellis and Michele Melchiori Exploratory Search of Web Data Services based on Collective Intelligence [S] Binh Nguyen, Kenro Aihara and Atsuhiro Takasu Collaborative Item Embedding Model for Implicit Feedback Data [V] 		

	Room 1	Tutorial: Model-Based Development of JavaScript Web Applications Gerd Wagner This tutorial presents a model-based approach to developing plain JavaScript web applications with responsive constraint validation, enumeration attributes, uni- and bidirectional associations, and inheritance in class hierarchies. It also shows how to implement the discussed information management concepts and techniques in a generic way in the form of three model-based development libraries: cLASSjs, mODELcLASSjs and mODELvIEWjs.
15:00- 15:30	Atrium	Coffee Break
15:30- 17:00	Auditorium	Crowd and social media - Session 2 [session chair: Paolo Missier] • Ujwal Gadiraju and Ricardo Kawase Improving Reliability of Crowdsourced Results by Detecting Crowd Workers with Multiple Identities [T] • Kim Schouten, Flavius Frasincar and Franciska de Jong Ontology-Enhanced Aspect-Based Sentiment Analysis [T] • Marco Brambilla, Stefano Ceri, Florian Daniel and Gianmarco Donetti Temporal Analysis of Social Media Response to live events: the Milano Fashion Week [T] • Luciano Barbosa Harvesting Forum Pages from Seed Sites [A]
	Gallery	 Gabriela Bosetti, Sergio Firmenich, Gustavo Rossi and Marco Winckler Supporting Mobile Web Augmentation by end users Alejandro Cortiñas, Carlo Bernaschina, Miguel R. Luaces and Piero Fraternali Improving GISBuilder with Runtime Product Preview Jesus M. Almendros-Jimenez and Antonio Becerra-Teron
19:00- 20:00		Rome Tour
20:00- 23:00	Gala Dinner	

	Thursday, June 8, 2017				
9:00- 10:30	Auditorium	ICWE Keynote 3: Francesco Bonchi MINING INFORMATION PROPAGATION IN SOCIAL NETWORKS [session chair: Riccardo Torlone] With the success of online social networks and microblogging platforms such as Facebook, Tumblr, and Twitter, the phenomenon of influence-driven propagations, has recently attracted the interest of computer scientists, sociologists, information technologists, and marketing specialists. In this talk we will take a data mining perspective, discussing what (and how) can be learned from a social network and a database of traces of past propagations over the social network. Starting from one of the key problems in this area, i.e. the identification of influential users, we will provide a brief overview of our recent contributions in this area. We will expose the connection between the phenomenon of information propagation and the existence of communities in social network. Finally, we will conclude by discussing on-going investigation in social advertising, an exciting topic at the overlap of viral marketing and classic computational advertising.			
10:30- 11:00	Atrium	Coffee Break			
11:00- 12:30	Auditorium	Internet of things [session chair: Donatella Firmani] • Amir Esmaeil Sarabadani Tafreshi, Kim Marbach and Moira Norrie Proximity-Based Adaptation of Web Content on Public Displays [T] • Alfonso Murolo, Fabian Stutz, Maria Husmann and Moira Norrie Improved Developer Support for the Detection of Cross-Browser Incompatibilities [T] • Kyeongdeok Baek and Inyoung Ko Spatially Cohesive Service Discovery and Dynamic Service Handover for Distributed IoT Environments [T] • Nathalie Oostvogels, Joeri De Koster and Wolfgang De Meuter Inter-parameter constraints in contemporary web APIs [V] Tutorial: Big Web Data: Warehousing and Analytics Recent Trends and Future Challenges Alfredo Cuzzocrea			
	Room 1	Big Web Data are gaining momentum for a widespread family of applications, ranging from Web advertisement to Web recommendation systems, from Semantic Web to Social Web systems, and so forth. In all these contexts, big data methodologies and paradigms play a leading role. Big Web data warehousing and analytics are two fortunate approaches to this end, as they are effectively able to extract actionable knowledge from massive big Web data repositories. In line with this emerging research trend, this paper explores state-of-the-art big Web data warehousing and analytics proposals, and future challenges in this scientific area.			
12:30- 13:30	Gallery	Lunch			
13:30- 15:00	Auditorium	 Engineering Web Application - Session 2 [session chair: Irene Garrigos] Noor Abu-El-Rub, Amanda Minnich and Abdullah Mueen Impact of Referral Incentives on Mobile App Reviews [S] Pieter Colpaert, Ruben Verborgh and Erik Mannens Public Transit Route Planning through Lightweight Linked Data Interfaces [S] Johannes Artner, Alexandra Mazak and Manuel Wimmer Towards Stochastic Performance Models for Web 2.0 Applications [S] 			

15:00- 15:30		Mirko Gelsomini, Franca Garzotto, Nicolò Messina, Vito Matarazzo and Daniele Occhiuto XOOM: an End-User Development Tool for Web-based Wearable Immersive Virtual Tours [A]
		Tutorial: Big Web Data: Warehousing and Analytics Recent Trends and Future Challenges Alfredo Cuzzocrea
	Room 1	Big Web Data are gaining momentum for a widespread family of applications, ranging from Web advertisement to Web recommendation systems, from Semantic Web to Social Web systems, and so forth. In all these contexts, big data methodologies and paradigms play a leading role. Big Web data warehousing and analytics are two fortunate approaches to this end, as they are effectively able to extract actionable knowledge from massive big Web data repositories. In line with this emerging research trend, this paper explores state-of-the-art big Web data warehousing and analytics proposals, and future challenges in this scientific area
	Auditorium	ICWE Concluding Remarks

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