C O M P L E X
N E T W O R K S
2017

The **6th International Conference** on
Complex Networks and Their Applications

November 29 - December 01

Lyon, France

PROGRAM

Dear Colleagues and Friends,

It is a great pleasure to welcome you in Lyon for the 6th edition of the International Conference on Complex Networks and Their Applications.

Located close to the Beaujolais, the Rhône Valley vineyards, the Alpes and the Mediterranean Sea, Lyon is the second French metropolis.

Lyon is *historic*. With its 2000 years of History, the second largest Renaissance city after Venice became a UNESCO WORLD HERITAGE in 1998.

Lyon is *lively and artistic*. Birthplace of cinema, with its museums, its festivals, Lyon hosts the world's principal event of light show design. Based on the tradition, every year around December 08, its unique Festival of Lights attract millions of visitors.

Lyon is *gourmet*. With its famous chefs, starred restaurants and "bouchons", it is the French capital of gastronomy.

Lyon is *talented*. With its universities, elite graduate schools and institutes, it is the first major university hub after Paris.

Lyon is *smart*. The first smart and connected city in France, developing projects combining economic growth and sustainable development.

The conference is hosted in the Hirsch Palace, one of the "jewels" of University of Lyon 2. Its sumptuous buildings draw attention when walking along the Rhône River banks. They are even more visible at night when lit up by thousands of lights. With its downtown location, at a walking distance from the Presqu'île area, it is close to many attractions in the city. It offers a wonderful view on the Rhône River, its famous barges, and its pleasant well laid out banks. We hope that you will enjoy this historical place.

We wish you a very productive conference. We are confident that you will benefit from its rich program with stimulating discussions and many opportunities of networking. Through our social events, you will also discover some aspects of Lyon's culture and gastronomy. We hope that you will enjoy exciting moments, and that you will leave Lyon with unforgettable memories.

Bienvenue à Lyon !

Chantal Cherifi	Márton Karsai	Hamamache Kheddouci
University of Lyon 2	ENS de Lyon	University of Lyon 1

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TUESDAY, NOVEMBER 29, 2017

Tutorials

Ginestra BIANCONI
Queen Mary University of London, London, UK

Ginestra Bianconi is Associate Professor (Reader) and Director of the MSc in Network Science at the School of Mathematical Sciences at Queen Mary University of London, London, UK. Her research activity on network science includes network theory and its applications and has appeared in journal such as Science, PNAS, PRX and Physical Review Letters. In the last years her work have focused on multilayer networks, network geometry, percolation and network control.

Network theory: the challenges that lie ahead
Network theory has emerged almost twenty years ago, as a new field for characterizing interacting complex systems, such as the Internet, the biological networks of the cell, and social networks. This tutorial will provide a (personal) reflection on the maturity of the field, indicating the main results obtained so far and the big challenges that lie ahead. The hot topics that will be critically discussed include: multilayer networks, network geometry and percolation theory.

Francesco BONCHI
ISI Foundation, Italy

Francesco Bonchi is Research Leader at the ISI Foundation, Turin, Italy, where he's the head of the "Algorithmic Data Analytics" group. He is also (part-time) Principal Scientist for Data Mining at Eurecat (Technological Center of Catalunya),Barcelona. Before he was Director of Research at Yahoo Labs in Barcelona, Spain, where he was leading the Web Mining Research group.

His recent research interests include mining query-logs, social networks, and social media, as well as the privacy issues related to mining these kinds of sensible data. In the past he has been interested in data mining query languages, constrained pattern mining, mining spatiotemporal and mobility data, and privacy preserving data mining.

He is member of the ECML PKDD Steering Committee, Associate Editor of the newly created IEEE Transactions on Big Data (TBD), of the IEEE Transactions on Knowledge and Data Engineering (TKDE), the ACM Transactions on Intelligent Systems and Technology (TIST), Knowledge and Information Systems (KAIS), and member of the Editorial Board of Data Mining and Knowledge Discovery (DMKD). He has been program co-chair of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD 2010). Dr. Bonchi has also served as program co-chair of the 28th ACM Conference on Hypertext and Hypermedia (HT 2017), the 16th IEEE International Conference on Data Mining (ICDM 2016), the first and second ACM SIGKDD International Workshop on Privacy, Security, and Trust in KDD (PinKDD 2007 and 2008), the 1st IEEE International Workshop on Privacy Aspects of Data Mining (PADM 2006), and the 4th International Workshop on Knowledge Discovery in Inductive Databases (KDID 2005). He is co-editor of the book "Privacy-Aware Knowledge Discovery: Novel Applications and New Techniques" published by Chapman & Hall/CRC Press.

He earned his Ph.D. in computer science from the University of Pisa in December 2003.

Mining Information Propagation Data

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, and we will go deeper in this new research topic arising at the overlap of information propagation analysis and community detection.

Keynote Speakers

Alex ARENAS
Universitat Rovira i Virgili, Spain

Prof. Alex Arenas (Barcelona, 1969) got his PhD in Physics in 1996. In 1995, he got a tenure position at Dept. Computer Science and Mathematics (DEIM) at Universitat Rovira i Virgili, and in 1997 he became associate professor at the same department. In 2000, he was visiting scholar at the Lawrence Berkeley Lab. (LBL) in the Applied Mathematics group of Prof. Alexandre Chorin (University of California, Berkeley). After this visit, he started a collaboration with Berkeley, and in 2007 he became visiting researcher of LBL. Arenas has written more than 160 interdisciplinary publications in major peer reviewed including Nature, Nature Physics, PNAS, Physics Reports and Physical Review Letters, which have received more than 9000 citations. He is one of the few Europeans serving as Associate Editors of the most important publication in physics worldwide, the American Physical Society journal, Physical Review. He is in charge of the Complex Networks and Interdisciplinary Physics section of Physical Review E. He got the James Mc Donnell Foundation award for the study of complex systems in 2011. He was also recognized as ICREA Academia-Institució Catalana de Recerca i Estudis Avançats, a catalan award that promotes the most recognized scientists from Catalonia. He serves as Editor in Journal of Complex Networks, and in Network Neuroscience. He was elected for the Steering Committee of the Complex Systems Society in 2012. He is the leader of the research group ALEPHSYS.

Finding the most versatile nodes in highly multidimensional data

The determination of the most central agents in complex networks is important because they are responsible for a faster propagation of information, epidemics, failures and congestion, among others. A challenging problem is to identify them in networked systems characterized by different types of interactions, forming interconnected multilayer networks. Here we describe a mathematical framework that allows us to calculate centrality in such networks and rank nodes accordingly, finding the ones that play the most central roles in the cohesion of the whole

structure, bridging together different types of relations. These nodes are the most versatile in the multilayer network. We investigate empirical interconnected multilayer networks and show that the approaches based on aggregating—or neglecting—the multilayer structure lead to a wrong identification of the most versatile nodes, overestimating the importance of more marginal agents and demonstrating the power of versatility in predicting their role in propagation processes with applications in social networks, banking networks, etc.

Daniele QUERCIA

NOKIA Bell Labs, UK

Daniele Quercia is a computer scientist and is currently building the Social Dynamics team at Bell Labs Cambridge UK, has been named one of Fortune magazine's 2014 Data All-Stars, and spoke about "happy maps" at TED. His research area is urban computing. His research received best paper awards from ACM Ubicomp 2014 and from AAAI ICWSM 2015, and an honorable mention from AAAI ICWSM 2013. He was Research Scientist at Yahoo Labs, a Horizon senior researcher at The Computer Laboratory of the University of Cambridge, and Postdoctoral Associate at the Massachusetts Institute of Technology. He received his PhD from UC London. His thesis was sponsored by Microsoft Research Cambridge and was nominated for BCS Best British PhD dissertation in Computer Science. During his PhD, he was MBA Technology Fellow at London Business School.

Good City Life

The corporate smart-city rhetoric is about efficiency, predictability, and security. "You'll get to work on time; no queue when you go shopping, and you are safe because of CCTV cameras around you". Well, all these things make a city acceptable, but they don't make a city great. We are launching goodcitylife.org - a global group of like-minded people who are passionate about building technologies whose focus is not necessarily to create a smart city but to give a good life to city dwellers. The future of the city is, first and foremost, about people, and those people are increasingly networked. We will see how a creative use of network-generated data can tackle hitherto unanswered research questions. Can we rethink existing mapping tools? Is it possible to capture smellscapes of entire cities and celebrate good odors? And soundscapes?

Keynote Speakers

Santo FORTUNATO

Indiana University, USA

He received his PhD in Theoretical Physics in 2000 at the Department of Physics of the University of Bielefeld, Germany, working on lattice gauge theories, percolation and phenomenology of heavy-ion collisions. He switched to complexity science in 2004, and from 2005 till 2007 he has been postdoctoral researcher at the School of Informatics and Computing of Indiana University, working in the group of Alessandro Vespignani. From 2007 till 2011 he has been at ISI Foundation in Turin, Italy, first as research scientist then as a scientific leader. In 2011 he became Associate Professor in Complex Systems at the School of Science of Aalto University, Finland. He is currently full professor in the School of Informatics and Computing at Indiana University.

Community structure in complex networks

Complex systems typically display a modular structure, as modules are easier to assemble than the individual units of the system, and more resilient to failures. In the network representation of complex systems, modules, or communities, appear as subgraphs whose nodes have an appreciably larger probability to get connected to each other than to other nodes of the network. In this talk I will address three fundamental questions: How is community structure generated? How to detect it? How to test the performance of community detection algorithms? I will show that communities emerge naturally in growing network models favoring triadic closure, a mechanism necessary to implement for the generation of large classes of systems, like e.g. social networks. I will discuss the limits of the most popular class of clustering algorithms, those based on the optimization of a global quality function, like modularity maximization. Testing algorithms is probably the single most important issue of network community detection, as it implicitly involves the concept of community, which is still controversial. I will discuss the importance of using realistic benchmark graphs with built-in community structure, as well as the role of metadata.

Jennifer NEVILLE

Purdue University, USA

Jennifer Neville is the Miller Family Chair Associate Professor of Computer Science and Statistics at Purdue University. She received her PhD from the University of Massachusetts Amherst in 2006. She is currently an elected member of the AAAI Executive Council and she was recently PC chair of the 9th ACM International Conference on Web Search and Data. In 2012, she was awarded an NSF Career Award, in 2008 she was chosen by IEEE as one of "AI's 10 to watch", and in 2007 was selected as a member of the DARPA Computer Science Study Group. Her work, which includes more than 100 publications with over 5000 citations, focuses on developing data mining and machine learning techniques for complex relational and network domains, including social, information, and physical networks.

The impact of network structure on relational machine learning

Network science focuses on analyzing network structure in order to understand key relational patterns in complex systems. In contrast, relational machine learning typically conditions on the observed relations in a network, using them as a form of inductive bias to constrain the space of dependencies considered by the models. While recent interest in these two fields has produced a large body of research on models of both network structure and relational data, there has been less attention on the intersection of the two fields--specifically considering the impact of network structure on relational learning methods. Since many relational domains comprise a single, large, partially-labeled network, many of the conventional assumptions in relational learning are no longer valid and the network structure creates unique statistical challenges for learning and inference algorithms. This talk will outline some of the algorithmic and statistical challenges that arise due to partially-observed, large-scale networks, and describe methods for semi-supervised learning, latent-variable modeling, and sampling to address the challenges.

Keynote Speakers

Frank SCHWEITZER

ETH Zurich, Switzerland

Frank Schweitzer has been Full Professor for Systems Design at ETH Zurich since 2004. He is also associated member of the Department of Physics at the ETH Zurich. Frank Schweitzer received his first Ph.D. (Dr. rer. nat.) in theoretical physics at the age of 26, and his second Ph.D. (Dr. phil.) in philosophy of science at the age of 29, he further earned a habilitation/Venia Legendi in Physics. In his professional career, he worked for different research institutions (Max-Planck Institute for the Physics of Complex Systems, Dresden, Fraunhofer Institute for Autonomous Intelligent Systems, Sankt Augustin) and universities (Humboldt University Berlin, Cornell University Ithaca NY, Emory University, Atlanta GA). The research of Frank Schweitzer focuses on applications of complex systems theory in the dynamics of social and economic organizations. He is interested in phenomena as diverse as user interaction in online social networks, collective decisions in animal groups, failure cascades and systemic risk in economic networks, and the rise and fall of collaborations in socio-technical systems. His methodological approach can be best described as data-driven modeling, i.e., it combines the insights from big data analysis with the power of agent-based computer simulations and the strength of rigorous mathematical models. Frank Schweitzer is a founding member of the ETH Risk Center and Editor-in-Chief of ACS - Advances in Complex Systems and EPJ Data Science.

Spreading influence in social networks: From link-centric to node-centric models

Epidemic spreading on complex networks is well studied because nodes follow a rather simple dynamic. Thus, the focus is mostly on how the network topology impacts the spreading process. However, modeling the spread of, e.g., emotions in online social networks requires us to have more refined models of the node dynamics, to calculate cascades of spreading influence. We capture the node dynamics by means of a data-driven modeling approach that allows us to test, and

to calibrate, assumptions about the user behavior. In my talk, I present different examples of how to complement the topological perspective by a node-centric perspective that considers costs and benefits, emotional responses or information processing of users.

Katharina A. ZWEIG
TU Kaiserslautern, Germany

Katharin A. Zweig is a professor at the TU Kaiserslautern since 2012. As a studied biochemist and computer scientist, her postdoc was in the biophysics group of Prof. Dr. Tamás Vicsek at ELTE University Hungary. With this interdisciplinary background, she designed a new field of study called Socioinformatics at the TU Kaiserslautern. It is concerned with the impact of IT Systems on individuals, organizations, and society at large. In her research, Zweig first focused on understanding when to use which network analytic measure for a meaningful interpretation of the result. Her research has now broadened to the meaningful use of other types of data mining. She is a junior fellow of the German Society of Computer Science from 2013 (until 2018), was selected as a "Digital Head" in 2014 in Germany, and won the ars-legendi teaching prize in Engineering and Computer Science in 2017. She co-founded an initiative called "Algorithm Watch" in 2016 and counsels politics, churches, media authorities and foundations with respect to the impact of algorithms on society.

Network analysis literacy: a socioinformatic approach
Why are there so many centrality indices? This is the question that puzzled me when I started into network analysis in 2003. Borgatti showed that centrality indices are best understood as tightly coupled to a specific kind of network flow or network process associated with it. His main idea, that centrality indices come with a model of a network flow or process, can be generalized to other types of data mining and quality measures. I will thus discuss the question of responsibility when measures are used in societally important algorithmic decision-making systems, such as terrorist identification systems which include social network features.

WEDNESDAY, NOVEMBER 29, 2017

Program at a Glance Day 1

08:00	Registration	
08:45	Opening	
09:00	Keynote Speaker: **Alex ARENAS** Chair: *James Gleeson*	
09.45	Lighting L1: Reputation & Influence – Community Structure Chair: *Marton Karsai*	
10:45	Poster P1A: Diffusion & Epidemics Poster P1B: Network in Finance & Economics Chair: *Huijuan Wang* **Coffee Break**	
11:30	Oral O1A Reputation & Influence Chair: *Michael Mathioudakis*	Oral O1B Biological Networks Chair: *Natasa Przulj*
13:15	Lunch	
14:45	Oral O2A Diffusion & Epidemics Chair: *Tsuyoshi Murata*	Oral O2B Link Analysis & Ranking Chair: *Fabien Tarissan*
16:00	Poster P2A: Network Analysis & Measures Poster P2B: Network Models Chair: *Hamamache Kheddouci* **Coffee Break**	
16:45	Keynote Speaker: **Daniele QUERCIA** Chair: *Ronaldo Menezes*	
17:30	Oral O3A Dynamics on/of Networks Chair: *Piet Van Mieghem*	Oral O3B Modeling Human Behavior Chair: *Claudio Juan Tessone*
19:15	**Welcome Remarks**	
19:30	**Welcome Reception**	

DETAILED PROGRAM **DAY 1**

08:00	Registration
08:45	Opening
09:00	**Alex ARENAS** **Finding the most versatile nodes in highly multidimensional data** Chair: *James Gleeson*
09:45	**Lighting L1: Reputation & Influence – Community Structure** Chair: *Márton Karsai*
	- Samuel Fraiberger, Roberta Sinatra, Christoph Riedl and Laszlo Barabasi. *Quantifying Reputation and Success in Art* - Yuichi Kichikawa, Hiroshi Iyetomi, Takashi Iino and Hiroyasu Inoue. *Hierarchical and Circulating Flow Structure in an Interfirm Transaction Network* - Soumaya Yahiaoui, Christophe Courtin, Pierre Maret and Laurent Tabourot. *Competences Network Based on Interaction Data for Recommendation and Evaluation Aims*
	- Michael Kitromilidis and Tim S. Evans. *Community Detection with Metadata in a Network of Artistic Influence* - Raphaël Ceré and Mattia Egloff. *Soft textual cartography based on topic modeling and clustering of irregular, multivariate marked networks* - Abhijit Chakraborty. *Community characterization in a large-scale Japanese production network* - Alessandro Muscoloni and Carlo Vittorio Cannistraci. *A latent geometry rationale for engineering graph-dissimilarities enhances affinity propagation community detection in real complex networks* - Kumaran Gunasekaran, Jeyavaishnavi Muralikumar, Sudarshan Srinivasa Ramanujam, Balasubramaniam Srinivasan and Fragkiskos Malliaros. *NetGloVe: Learning Node Representations for Community Detection* - Clara Pizzuti and Annalisa Socievole. *Motif-based Community Detection in Multiplex Networks* - Vesa Kuikka. *Influence Spreading Model Used to Community Detection in Social Networks*

10:45	**Poster P1A: Diffusion & Epidemics**
	Poster P1B: Networks in Finance & Economics
	Chair: *Huijuan Wang*

- Soheil Eshghi, Setareh Maghsudi, Valerio Restocchi, Leandros Tassiulas, Rachel Bellamy, Nicholas Jennings and Sebastian Stein. *Heuristic Algorithms for Influence Maximization in Partially Observable Social Networks*
- Vincenza Carchiolo, Alessandro Longheu, Michele Malgeri, Giuseppe Mangioni and Marialaura Previti. *Introducing credibility to model news spreading*
- Jianyong Yu, J.Chuan Jiang and Leijun Xiang. *The Cooperation Evolution with Strategy Memory Span in the Weighted Multiplex Networks*
- Zakariya Ghalmane, Mohammed El Hassouni and Hocine Cherifi. *Targeted immunization in networks with non-overlapping community structure*
- Sindhura Jaladhanki, Natallia Katenka and Lisa Dipippo. *Epidemiological Study of Browser-Based Malware for University Network with Partially Observed Flow Data*
- Wenjun Wang and Nick Street. *Modeling Influence Diffusion in Social Networks for Viral Marketing*
- Alba Bernini, Luca Bolzoni and Renato Casagrandi. *The importance of the temporal sequence of indirect contacts: the case study of a dairy farm system in the Emilia Romagna region (Northern Italy)*
- Argyris Kalogeratos, Kevin Scaman, Luca Corinzia and Nicolas Vayatis. *Partial network immunization in Continuous-Time Information Cascades*
- Fuad Aleskerov, Natalia Meshcheryakova and Sergey Shvydun. *Power in Network Structures Based on Simulations*

- Valentina Y. Guleva and Klavdiya Bochenina. *Graph theoretical approach to bow-tie interbank networks reconstruction*
- Jan Korbel and Xiong-Fei Jiang. *Transfer entropy between communities in complex financial networks*
- Alexandra Brintrup. *A missing ingredient in the analysis of Complex Supply Networks: The Role of Products*
- Hazem Krichene, Abhijit Chakraborty, Hiroyasu Inoue and Yoshi Fujiwara. *Business cycles' correlation in the Japanese production network*
- Andre Leone, Marcello Tomasini, Younis Al Rozz and Ronaldo

	Menezes. *On the Performance of Network Science Metrics as Long-term Investment Strategies in Stock Markets*
	• Takashi Isogai. *Factor modeling of financial asset returns for partial correlation network*
	• Chiara Perillo and Stefano Battiston. *Real implications of quantitative easing in the euro area: a complex-network perspective*
	• Serafin Martinez Jaramillo, Alejandro de La Concha and Christian Carmona. *Multiplex financial networks: revealing the level of interconnectedness in the banking system*
11:30	**Oral O1A: Social Reputation & Influence** Chair: *Michael Mathioudakis*
	• Laurent Brisson, Martine Collard, Philippe Collard and Erick Stattner*. Information Dissemination in scale-free networks: Profusion versus Scarcity*
	• Giacomo Livan, Fabio Caccioli and Tomaso Aste. *Excess reciprocity distorts reputation in online social networks*
	• Tobias Hecking, Laura Steinert and Ulrich Hoppe. *Relational Patterns in Cross-media Information Diffusion Networks*
	• Eric Fleury and Giuseppe Torrisi. *Graph analysis & word embedding help to perform user classification*
	• Fernando P. Santos, Francisco C. Santos, Ana Paiva and Jorge M. Pacheco. *Multiplayer ultimatum game on complex networks: the role of structural power*
	• Lei Hou, Kecheng Liu and Jianguo Lliu. *Navigated Random Walks on Amazon Book Recommendation Network*
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	• William P. Grant and Sebastian E. Ahnert. *Modular decomposition of protein structure using community detection*
	• Florian Klimm, Charlotte Deane, Jonny Wray and Mason Porter. *Reconfiguration of Protein Interaction Networks during Nematode Development*
	• Vera Pancaldi and Alfonso Valencia. *Using assortativity and other network properties to unravel the organization of chromatin in the nucleus*
	• Thomas Gaudelet, Noel Malod-Dognin, Jose Lugo-Martinez, Predrag Radivojac and Natasa Przulj. *Hypergraphlets Give*

	Insight into Multi-Scale Organisation of Molecular Networks
	• Vladimir Gligorijevic, Noel Malod-Dognin and Natasa Przulj. *Data-Fusion for Cancer Patient Stratification and Personalised Treatment*
	• Ivan Puga-Gonzalez, Sebastian Sosa and Cédric Sueur. *Understanding resilience in animal networks: the case of the macaque's social style*
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14:45	**Oral O2A: Diffusion & Epidemics** Chair: *Tsuyoshi Murata*
	• Joan T. Matamalas, Alex Arenas and Sergio Gómez. *Epidemic Conductance in complex networks*
	• Xavier R. Hoffmann and Marián Boguñá. *Synergistic cumulative contagion in epidemic spreading*
	• Hui Yu, Luyuan Chen, Xi Cao, Zun Liu and Yongjun Li. *Identifying Top-k important nodes base on Probabilistic-jumping Random Walk in complex networks*
	• James Gleeson and Rick Durrett. *Temporal profiles of avalanches on networks*
	• Wilbert Samuel Rossi, Giacomo Como and Fabio Fagnani. *Feedback control of the Threshold Model in large-scale networks*
14:45	**Oral O2B: Link Analysis & Ranking** Chair: *Fabien Tarissan*
	• Federica Parisi, Guido Caldarelli and Tiziano Squartini. *Entropy-based approach to missing links imputation*
	• Akanda Wahid -Ul- Ashraf, Marcin Budka and Katarzyna Musial-Gabrys. *Newton's Gravitational Law for Link Prediction in Social Networks*
	• Nazim Choudhury and Shahadat Uddin. *Evolutionary Community Mining for Link Prediction in Dynamic Networks*
	• Stephen Ranshous, Mandar Chaudhary and Nagiza Samatova. *Efficient Outlier Detection in Hyperedge Streams using MinHash and Locality-Sensitive Hashing*
	• Charles Marshak, Mihai Cucuringu, Dillon Montag and Puck Rombach. *Rank Aggregation for Course Sequence Discovery*

16:00	**Poster P2A: Network Analysis & Measures** **Poster P2B: Network Models** Chair: *Hamamache Kheddouci*
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	• Ramona Roller, Suzan Blommestijn and Jan Treur. *An Adaptive Computational Network Model for Multi-Emotional Social Interaction* • Marzena Fügenschuh, Ralucca Gera, Mitchell Heaton and Tobias Lory. *Synthetic Models for Multi-Layered Networks* • Radek Marik. *On Multitree-like Graph Layering* • Georgios Papoudakis, Philippe Preux and Martin Monperrus. *A generative model for sparse, evolving digraphs* • Meryam Zeryouh, Mohamed El Marraki and Mohamed Essalih. *Topological Analysis of Some Networks using Graph Theory*

	Methods
	• Fabio Vanni, Giovanni Dosi, Andrea Roventini and Mauro Napoletano. *Complexity and Heterogeneity in dynamical networks and system instability*
	• Matteo Zignani, Christian Quadri, Michela Del Vicario, Sabrina Gaito and Gian Paolo Rossi. *Temporal Communication Motifs in Mobile Cohesive Groups*
16:45	**Daniele QUERCIA** **Good City Life** Chair: *Ronaldo Menezes*
17:30	**Oral O3A: Dynamics on/of Networks** Chair: *Piet Van Mieghem*
	• Kyu-Min Lee and Kwang-Il Goh. *Threshold cascade dynamics on signed networks* • Wenshuo Guo, Juntao Wang and Kwok Yip Szeto. *Spin Model of Two Random Walkers in Complex Networks* • Lluís Arola and Alex Arenas. *Invariant Collective Dynamics Under Network Transformations* • Gerardo Iñiguez, Carlos Pineda, Carlos Gershenson, Sergio Sánchez, José A. Morales and Albert-László Barabási. *Generic features of temporal evolution in hierarchical complex systems* • Matthias Wölbitsch, Simon Walk and Denis Helic. *Modeling Peer Influence in Time-Varying Networks* • Marco Corneli, Charles Bouveyron, Pierre Latouche and Fabrice Rossi. *Stochastic textual block modelling in dynamic networks* • Andrey V. Dmitriev, Victor Dmitriev, Olga Tsukanova and Svetlana Maltseva. *A Nonlinear Dynamical Approach to the Interpretation of Microblogging Network Complexity*
17:30	**Oral O3B: Modeling Human Behavior** Chair: *Claudio Juan Tessone*
	• Tomoaki Otsuka and Toshiharu Sugawara. *Promotion of Robust Cooperation Among Agents in Complex Networks by Enhanced Expectation-of-Cooperation Strategy* • Daniele Cassese. *Replicator Equation and The Evolution of Cooperation on Regular Communities* • Alex Jones, Ambuj Singh and Noah Friedkin. *Modeling the Co-evolution of Committee Formation and Awareness Networks in Organizations* • Ismo Koponen and Maija Nousiainen. *Concept networks in learning and the epistemic support of their key concepts*

	• Daniele Vilone, Giulia Andrighetto and John Realpe-Gomez. *Criticality as key-concept to understand Social Norms' dynamics in networks* • Doina Bucur. *On the gender of books: author gender mixing in book genres* • Halley Fede, Isaiah Herrera, S.M. Mahdi Seyednezhad and Ronaldo Menezes. *Representing Emoji Usage using Directed Networks: A Case Study using Twitter*
19:15	**Welcome Remarks** Isabelle VON BUELTZINGSLOEWEN *Vice-President University of Lyon 2* Yanick RICARD *Vice-President ENS Lyon* Yacine OUZROUT *DISP Lab, University of Lyon 2*
19:30	**Welcome Reception**
21:30	**Day ends!**

Program at a Glance Day 2

08:30	**Registration**	
08:45	Keynote Speaker: **Santo FORTUNATO** Chair: *Carlo Piccardi*	
09.30	Lighting L2: Diffusion & Epidemics – Network Measures Chair: *Mirco Musolesi*	
10:30	Poster P3A: Biological & Brain Networks Poster P3B: Motif Discovery & Urban Networks Chair: *Huijuan Wang*	
	Coffee Break	
11:15	Oral O4A Diffusion & Epidemics Chair: *Kwang-Il Goh*	Oral O4B Network in Finance & Economics Chair: *Frank Takes*
13:15	**Lunch**	
14:45	Oral O5A Network Models Chair: *Igor Smolyarenko*	Oral O5B Reputation & Influence Chair: *Yaniv Dover*
16:00	Poster P4A: Community Structure Poster P4B Link Analysis Chair: *Hamamache Kheddouci*	
	Coffee Break	
16:45	Keynote Speaker: **Jennifer NEVILLE** Chair: *Francesco Bonchi*	
17:30	Oral O6A Resilience, Control & Synchronization Chair: *Luis M. Rocha*	Oral O6B Network Analysis & Measures Chair: *Boleslaw Szymanski*
19:30	**Sessions end!**	
20:00	**Dinner Banquet**	

DETAILED PROGRAM **DAY 2**

08:30	Registration
08:45	**Santo FORTUNATO** **Community structure in complex networks** Chair: *Carlo Piccardi*
09:30	**Lighting L2: Diffusion & Epidemics – Network Measures** Chair: *Mirco Musolesi*
	• Hale Cetinay, Piet Van Mieghem and Karel Devriendt. *Best spreader node in a network* • Oliver Williams, Fabrizio Lillo and Vito Latora. *Infection Spreading in Temporal Networks With Memory* • Bo Qu, Cong Li, Piet Van Mieghem and Huijuan Wang. *Ranking of Nodal Infection Probability in Susceptible-Infected-Susceptible Epidemic* • Alexey Medvedev and Gabor Pete. *Speeding up non-Markovian SI spreading with a few extra edges* • Timoteo Carletti, Malbor Asllani, Francesca Di Patti, Duccio Fanelli and Francesco Piazza. *Crawling in crowed conditions. Application to network reconstruction* • Mica Rubinson, Nava Levit-Binnun, Avi Peled, Jodie Naim-Feil, Freche Dominnik and Elisha Moses. *A novel hierarchy measurement for modeling network dynamics under directed attacks* • Jeremy Guillon, Yohan Attal, Oliver Colliot, Valentina La Corte, Bruno Dubois, Denis Schwartz, Mario Chavez and Fabrizio De Vico Fallani. *Loss of inter-frequency brain hubs in Alzheimer's disease* • Xiangrong Wang, Johan L. A. Dubbeldam and Piet Van Mieghem. *Kemeny's constant and the effective graph resistance* • Taichi Haruna. *Open Networks from Within: From Categorical Network Theory to New Centrality Measures of Nodes as Input or Output* • John Matta*. A Comparison of Approaches to Computing Betweenness Centrality for Large Graphs* • Vandana Ravindran, Sunitha V and Ganesh Bagler. *Investigation of control profiles in biological networks*

10:30	**Poster P3A: Biological & Brain Networks** **Poster P3B: Motif Discovery & Urban Networks** Chair: *Huijuan Wang*
	• Rémi Souriau, Jaakko Nevalainen, Guillaume Pinna, Florent Chatelain and Laurent Guyon. *Gene interaction network to prioritize gene selection using Markov Random Fields model* • Rodrigo Dorantes-Gilardi, Claire Lesieur and Laurent Vuillon. *Perturbation of amino acid networks: A statistical study of the defects introduced in proteins by mutations* • Xi Chen and Ding-Ding Han. *Complexity of the clonal network of Spartina alterniflora by random walk model** • Jai Woo Lee and Jiang Gui. *Covariate-Adjusted Binary Ising Model* • Quoc-Trung Vuong, Roselyne Chauvin, Sergiu Ivanov, Nicolas Glade and Laurent Trilling. *A logical constraint-based approach to infer and explore diversity and composition in thresholded Boolean automaton networks* • Michael Pitcher, Ruth Bowness, Simon Dobson and Stephen Gillespie. *A Network-Based Metapopulation Model to Simulate a Pulmonary Tuberculosis Infection* • Myriam Patricia Cifuentes, Clara Mercedes Suarez, Sam Windels, Ricardo A. Cifuentes, Nathan Doogan, Noel Malod-Dognin, Darryl Hood and Natasa Przulj. *A network analysis of the incidence pattern of microcephaly in the context of Zika Virus Infection* • Pablo Amil, Irene Sendiña and Cristina Masoller. *Complex network analysis of images of human retina* • Alberto Cacciola, Alessandro Muscoloni, Vaibhav Narula, Alessandro Calamuneri, Salvatore Nigro, Emeran Mayer, Jennifer Labus, Giuseppe Anastasi, Aldo Quattrone, Angelo Quartarone, Demetrio Milardi and Carlo Vittorio Cannistraci. *Coalescent embedding in the hyperbolic space unsupervisedly discloses the hidden geometry of the brain* • Maxim Panov and Nikita Mokrov. *Simultaneous Matrix Diagonalization for Structural Brain Networks Classification*
	• Orestis Kostakis and Aristides Gionis. *On Mining Temporal Patterns in Dynamic Graphs, and Other Unrelated Problems* • Zhaolong Ning, Lei Liu, Shuo Yu and Feng Xia. *Detection of Four-node Motif in Complex Networks* • Matteo Cinelli, Giovanna Ferraro and Antonio Iovanella. *Rich-*

	Club Ordering and the Dyadic Effect: Two Interrelated Phenomena
	• Damien Seux, Fragkiskos Malliaros, Apostolos Papadopoulos and Michalis Vazirgiannis. *Core Decomposition of Uncertain Graphs Using Representative Instances*
	• Aly-Joy Ulusoy and Ivan Stoianov. *Hydraulically informed graph theoretic metric for the resilience analysis of water supply networks*
	• Leonardo Bellocchi and Nikolas Geroliminis. *Dynamical efficiency in congested road networks*
	• Armando Di Nardo, Michele Di Natale, Carlo Giudicianni, Roberto Greco and Giovanni Francesco Santonastaso. *Water distribution network clustering: Graph partitioning or spectral algorithms*
11:15	**Oral O4A: Diffusion & Epidemics** Chair: *Kwang-Il Goh*
	• Qiang Liu and Piet Van Mieghem. *Synchronized epidemic process and the possibly largest non-Markovian SIS threshold on networks*
	• Sara Joneydi, Mohammad Khansari and Amin Kaveh. *An Opportunistic Network Approach Towards Disease Spreading*
	• Samuel Unicomb, Gerardo Iñiguez and Márton Karsai. *Threshold driven contagion on weight heterogeneous networks*
	• Letizia Milli, Giulio Rossetti, Fosca Giannotti and Dino Pedreschi. *Information Diffusion in Complex Networks: The Active/Passive Conundrum*
	• Ali Safari, Paolo Moretti and Miguel Angel Munoz. *Dimensionality and activity spreading in hierarchical modular networks*
	• Lorenzo Zino, Giacomo Como and Fabio Fagnani. *Fast diffusion of mutant mosquitoes in controlled evolutionary dynamics*
	• Edmund Barter and Thilo Gross. *Meta-foodwebs as a many-layer epidemic process on networks*
	• Raul Mondragon. *Efficient network exploration via a core-biased random walk*
11:15	**Oral O4B: Networks in Finance & Economics** Chair: *Frank Takes*
	• Daryl Deford. *Multiplex Dynamics on the World Trade Web*
	• Xiang Niu, Alaa Moussawi, Noemi Derzsy, Xin Lin, Gyorgy Korniss and Boleslaw K. Szymanski. *Evolution of the Global Risk*

Network Mean-Field Stability Point

- Pierre-Louis Giscard and Richard C. Wilson. *Loop-centrality in economic and biological networks*
- Borut Sluban, Jasmina Smailović, Petra Kralj Novak, Igor Mozetič and Stefano Battiston. *Analysis of the Lobbyist Network in Banking and Finance*
- Takayuki Mizuno, Takaaki Ohnishi and Tsutomu Watanabe. *Irresponsible communities in global supply chain*
- Yoshiyuki Arata, Abhijit Chakraborty, Yoshi Fujiwara, Hiroyasu Inoue, Hazem Krichene and Masaaki Terai. *Shock propagation through customer-supplier relationships: An application of the stochastic actor-oriented model*
- Jun-Home Chen, Jyi-Shane Liu, Yu-Lieh Huang and Yi-Jia Lin. *Analyses on the Authority Migration and Geographical Context in Progeny Networks*
- Frank Takes, Walter Kosters and Boyd Witte. *Detecting Motifs in Multiplex Corporate Networks*

13:15	**Lunch**

14:45	**Oral O5A: Network Models** Chair: *Igor Smolyarenko*
	- Owen Courtney and Ginestra Bianconi. *Generalized network structures: The configuration model and the canonical ensemble of simplicial complexes* - Alessandro Muscoloni, Josephine Maria Thomas, Sara Ciucci, Ginestra Bianconi and Carlo Vittorio Cannistraci. *Machine learning meets complex networks via coalescent embedding of networks in the hyperbolic space* - Alessandro Muscoloni and Carlo Vittorio Cannistraci. *Local-ring network automata and the impact of hyperbolic geometry in complex network link-prediction* - Robert Palovics and Andras A. Benczur. *Raising Graphs from Randomness* - Ivan Kryven. *Analytical expression for the size distribution of connected components in the infinite configuration model*
14:45	**Oral O5B: Social Reputation & Influence** Chair: *Yaniv Dover*
	Petra Kralj Novak, Luisa De Amicis, Catherine Hughes and Igor Mozetič. *Exploring the Twitterland of the Impact Investing*

	Market
	• Matija Piškorec, Nino Antulov-Fantulin, Iva Miholić, Tomislav Smuc and Mile Šikić. *Modeling peer and external influence in online social networks: Case of 2013 referendum in Croatia* • Maria Evgenia Rossi, Bowen Shi, Nikolaos Tziortziotis, Fragkiskos Malliaros, Christos Giatsidis and Michalis Vazirgiannis. *MATI: An Efficient Algorithm for Influence Maximization in Social Networks* • Livio Bioglio and Ruggero G. Pensa. *Is this movie a milestone? Identification of most influential movies in the history of cinema* • Marc Santolini, Abhijeet Krishna, Christos Ellinas, Leo Blondel, Thomas Landrain and Albert-László Barabási. *Team success in the iGEM scientific competition*
16:00	**Poster P4A: Community Structure** **Poster P4B: Link Analysis** **Chair:** *Hamamache Kheddouci*
	• Alexander Chepovskiy. *Methods to reveal communities without the property of "picking up junk"* • Yanmei Hu, Qiucheng Wang and Jun Li. *Community-based feature selection for credit card default prediction* • Remy Cazabet, Rim Baccour, Matthieu Latapy and Clemence Magnien. *Tracking bitcoin users activity using community detection on a network of weak signals* • Ryan McConville, Weiru Liu and Jun Hong. *Vertex Deduplication Based on String Similarity and Community Membership* • Yang Li and Hadi Papei. *Stochastic Local Community Detection in Networks* • Maxim Panov, Konstantin Slavnov and Roman Ushakov. *Consistent Estimation of Mixed Memberships with Successive Projections* • Amenah Al-Dayyeni and Richard Everson. *Detecting Dynamic Communities in Social Networks Using Viterbi and Evolutionary Algorithms* • Zhana Kuncheva and Giovanni Montana. *Spectral Multi-scale Community Detection in Temporal Networks with an Application* • Issam Falih, Nistor Grozavu, Rushed Kanawati and Younès Bennani. *ANCA : Attributed Network Clustering Algorithm* • Jianpeng Zhang, Kaijie Zhu, Yulong Pei, George H. L. Fletcher and Mykola Pechenizkiy. *A Clustering-structure Representative Sampling from Graph Streams*

	• Luca Luceri, Alberto Vancheri, Torsten Braun and Silvia Giordano. *On the Social Influence in Human Behavior: Physical, Homophily, and Social Communities*
	• Gali-Ketema Mbogo, Alexander Visheratin and Stepan Rakitin. *Layer-wise model stacking for link prediction in multilayer networks. Case of scientific collaboration networks* • Alessandro Muscoloni and Carlo Vittorio Cannistraci. *A nonuniform popularity-similarity optimization (nPSO) model to efficiently generate realistic complex networks with communities* • Carlos Pineda, Jorge Flores, Carlos Gershenson, Sergio Sanchez, Germinal Cocho and Gerardo Iñiguez. *The Shifting Traveling Salesman Problem*
16:45	**Jennifer NEVILLE** **The impact of network structure on relational machine learning** Chair: *Francesco Bonchi*
17:30	**Oral O6A: Resilience, Control & Synchronization** Chair: *Luis M. Rocha*
	• Tsuyoshi Murata and Hokuto Koga. *Methods for Influence Maximization in Dynamic Networks* • Pouria Babvey and Babak Heydari. *Improving Coordination in Heterogeneous Human-Agent Complex Networks: The case of Vertex-Covering Problem* • Yaniv Dover and Guy Kelman. *Nucleation of Social Groups: The Role of Centrality Inequality and Social Mobility* • Viplove Arora and Mario Ventresca. *Action-based Model for Topologically Resilient Supply Networks* • Bryan Chong and Mario Ventresca. *Attacking Unexplored Networks - the Probe-and-Attack Problem* • Ricardo Viana and Fabiano Ferrari. *Bursting synchronization in a neuronal network model for cortical areas of the human brain* • Luis M. Rocha. *The effective structure of complex networks: Canalization in the dynamics of complex networks drives dynamics, criticality and control*
17:30	**Oral O6B: Network Analysis & Measures** Chair: *Boleslaw Szymanski*
	• Amin Kaveh, Matteo Magnani and Christian Rohner. *Degree in Probabilistic Networks: Revisited* • Giulia Cesari, Encarnación Algaba, Stefano Moretti and Juan A. Nepomuceno. *A game theoretic neighbourhood-based*

	relevance index • Christoph Martin. *The impact of partially missing communities on the reliability of centrality measures* • Mehdi Djellabi, Bertrand Jouve and Frederic Amblard. *Behind the communities, the structure of the sparse part of a network* • Vsevolod Salnikov, Renaud Lambiotte and Daniele Cassese. *Concepts co-occurrence for the identification of higher order concepts in Mathematics articles.* • Anes Bendimerad, Rémy Cazabet, Marc Plantevit and Céline Robardet. *Contextual Subgraph Discovery With Mobility Models* • Claudio Juan Tessone, Albert Sole, Manuel S. Mariani and Javier Borge-Holthoefer. *In-block Nested Structural Patterns in Ecological and Social Networks*
19:30	**Sessions End**
20:00	**Dinner Banquet** **Le Caro de Lyon**
22:30	**Day ends!**

Program at a Glance Day 3

08:30	**Registration**
08:45	Keynote Speaker: Frank Schweitzer Chair: *Sabrina Gaito*
09.30	Lighting L3: Network Models – Social & Political Networks Chair: *Chantal Cherifi*
10:30	Poster P5A: Dynamics on/of Networks Poster P5B: Resilience & Control Chair: *Huijuan Wang*
	Coffee Break

11:15	Oral O7A Dynamics on/of Networks Chair: *Gerardo Iniguez*	Oral O7B Brain Networks Chair: *Fabrizio De Vico Fallani*
13:15	**Lunch**	
14:45	Oral O8A Network Models Chair: *Carlo Vittorio Cannistraci*	Oral O8B Networks in Finance & Economics Chair: *Yuichi Ikeda*
16:00	**Coffee Break**	
16:30	Keynote Speaker: Katharina A. Zweig Chair: *Cristina Masoller*	
17:15	Oral O9A Community Structure Chair: *Gergely Palla*	Oral O9B Network Analysis & Measures Chair: *Giuseppe Mangioni*
18:30	**Closing**	

DETAILED PROGRAM **DAY 3**

08:30	**Registration**
08:45	**Frank SCHWEITZER** **Spreading influence in social networks: From link-centric to node-centric models** Chair: *Sabrina Gaito*
09:30	**Lighting L3: Network Models – Social & Political Networks** Chair: *Chantal Cherifi*
	- Giona Casiraghi. *Multiplex Network Regression: How Do Relations Drive Interactions?* - Yongzheng Sun and Wang Li. *Coherence of multi-agent networks with reaction time delays* - Christian Hofer, Georg Jäger and Manfred Füllsack. *Generating realistic road usage information and origin-destination data for traffic simulations: augmenting agent-based models with network techniques* - Sara Heydari, Sam G.B. Roberts, R.I.M Dunbar and Jari Saramäki. *Multichannel Social Signatures and Persistent Features of Ego Networks* - Marija Mitrovic Dankulov and Jelena Smiljanic. *Associative nature of event-driven social dynamics: a network theory approach* - Kuntal Dey, Ritvik Shrivastava, Vaibhav Mathur and Saroj Kaushik. *Assessing the Effects of Social Familiarity and Stance Similarity in Interaction Dynamics* - Jacob Levy Abitbol, Márton Karsai, Jean-Pierre Chevrot, Jean-Philippe Magué and Eric Fleury. *Socioeconomic and network dependencies of linguistic patterns in Twitter* - Rijul Magu and Gonzalo Mateos. *United Nations General Assembly Vote Similarity Networks* - Simon Schweighofer, Giona Casiraghi and Frank Schweitzer. *Predicting Offline Political Support with Online Behavioral Traces* - Nan Zhou, Xiu-Xiu Zhan, Qiang Ma, Song Lin, Jun Zhang and Zi-Ke Zhang. *Identifying spreading sources and influential nodes of hot events on social networks*

10:30	**Poster P5A: Dynamics on/of Networks**
	Poster P5B: Resilience & Control
	Chair: *Huijuan Wang*

- Arkadiusz Jędrzejewski. *Pair approximation for the q-voter model with independence on complex networks*
- Kajari Gupta and G. Ambika. *Interplay of time scales on the dynamics of complex networks*
- Ines P. Mariño, Sara Pérez-Vieites and Joaquín Míguez. *Parameter Estimation and State Forecasting in Meteorological Models*
- Joris Broere, Vincent Buskens, Jeroen Weesie and Henk Stoof. *Network effects on coordination in asymmetric games*
- Rui Sarmento and Mario Cordeiro. *Efficient Incremental Laplace Centrality algorithm for Dynamic Networks*
- Eisha Nathan, James Fairbanks and David Bader. *Ranking in Dynamic Graphs using Exponential Centrality*
- Ferenc Beres and Andras A. Benczur. *Online Centrality in Temporally Evolving Networks*
- Henk J. van Waarde, Pietro Tesi and M. Kanat Camlibel. *Topology Reconstruction of Dynamical Networks via Constrained Lyapunov Equations*
- Gwen Spencer. *High Clustering Protects Against Catastrophic Collapse*

- Gyula Dorgo, Gergely Honti, Daniel Leitold and Janos Abonyi. *Key Factors and Mechanisms of Sustainability - Network Analysis Comparision of Texts and Causal-loop Diagrams*
- Stylianos Savvopoulos and Sotiris Moschoyiannis. *Impact of removing nodes on the controllability of complex networks*
- Javier Villalba-Díez, Ilaria Desanctis, Joaquín Ordieres-Meré and Filippo Ciarapica. *Lean Structural Network Resilience*
- Maryam Zamani and Tamas Vicsek. *Measuring the stability of complex hierarchical networks*
- Mohammed Alenazi. *On SDN Controller Placement to Achieve Robustness against Targeted Attacks*
- Malbor Asllani and Timoteo Carletti. *Topological resilience in non-normal networked systems*
- Monica Bianchi, Gian Paolo Clemente, Alessandra Cornaro and Anna Torriero. *Measuring Robustness via Kirchhoff Index*
- Ivana Bachmann and Javier Bustos-Jiménez. *Improving the*

	Chilean Internet robustness: increase the interdependencies or change the shape of the country?
	• Fernando Rosas and Kwang-Cheng Chen. _Social Learning Against Data Falsification in Sensor Networks_
11:15	**Oral O7A: Dynamics on/of Networks** Chair: _Gerardo Iniguez_
	• Ernesto Estrada, Ehsan Hameed, Matthias Langer and Naomichi Hatano. _Dynamical processes modelled by k-path Laplacian operators_ • Janos Török and Janos Kertesz. _Cascading collapse of online social networks_ • Fredrik Erlandsson, Piotr Bródka and Anton Borg. _Seed selection for information cascade in multilayer networks_ • Alexey Medvedev and Renaud Lambiotte. _Modeling structure and dynamics of discussion threads in online boards with Hawkes processes_ • Kuntal Dey, Kritika Garg, Ritvik Shrivastava and Saroj Kaushik. _A Semantic Continuity Based Analysis of Topic Lifecycle on Social Networks_ • Igor Zakhlebin and Emőke-Ágnes Horvát. _Network signatures of success: Emulating expert and crowd assessment in science, art, and technology_ • Fabiana Zollo, Borut Sluban, Igor Mozetič and Walter Quattrociocchi. _Emotional Behavior and Polarization Dynamics on Facebook_ • Philipp Lorenz, Frederik Wolf, Jonas Braun, Natasa Djurdjevac Conrad and Philipp Hövel. _Capturing the Dynamics of Hashtag-Communities_
11:15	**Oral O7B: Brain Networks** Chair: _Fabrizio De Vico Fallani_
	• Yael Jacob, Ayelet Or-Borochov, Gilan Jackont and Talma Hendler. _Network based fMRI Neuro-Feedback for Emotion Regulation; Proof-of-Concept_ • Ilias Foudalis, Constantine Dovrolis, Bistra Dilkina and Shella Keilholz. _δ-MAPS: From fMRI data to functional brain networks_ • Dali Guo, Viplove Arora, Enrico Amico, Joaquín Goñi and Mario Ventresca. _Dynamic Generative Model of the Human Brain in Resting-state_ • Leto Peel, Jean-Charles Delvenne and Renaud Lambiotte. _Multiscale mixing patterns in networks_

	• Onerva Korhonen, Elisa Ryyppö, Enrico Glerean, Elvira Brattico and Jari Saramäki. *Regions of Interest as nodes of dynamic functional brain networks* • Catalina Obando Forero and Fabrizio De Vico Fallani. *Exponential random graph model for brain networks* • Chengtao Ji, Natasha M. Maurits and Jos Roerdink. *Visualization of Multichannel EEG Coherence Networks Based on Community Structure* • Tuan Nguyen, Kelly O'Connor, Krishna Sheth and Nick Bolle. *Mapping connectivity of bursting neuronal networks* • Fabrizio De Vico Fallani, Vito Latora and Mario Chavez. *Filtering information in complex brain networks*
13:15	**Lunch Break**
14:45	**Oral O8A: Network Models** Chair: *Carlo Vittorio Cannistraci*
	• Diamantino Da Silva, Ginestra Bianconi, Rui Da Costa, Sergey Dorogovtsev and José Mendes. *Complex network view of evolving manifolds* • Igor Smolyarenko. *A branching process with fitness.* • Cristina Masoller. *Quantification of network dissimilarities and application to the modeling of a Power Grid network* • Takayasu Fushimi, Kazumi Saito, Tetsuo Ikeda and Kazuhiro Kazama. *Fast Extraction Method of Functional Clusters from Large-Scale Spatial Networks Based on Transfer Learning* • Amin Khiali-Miab, Maarten J. van Strien, Kay W. Axhausen and Adrienne Grêt-Regamey. *Monitoring polycentric settlement development using a hierarchy-based network indicator*
14:45	**Oral O8B: Networks in Finance & Economics** Chair: *Yuichi Ikeda*
	• Hiroshi Iyetomi, Yuichi Ikeda, Takayuki Mizuno, Takaaki Ohnishi and Tsutomu Watanabe. *International Trade Relationship from a Multilateral Point of View* • Isabella Cingolani, Pietro Panzarasa and Lucia Tajoli. *Countries' positions in the international global value networks: Centrality and economic performance* • Chikara Mizokami and Takaaki Ohnishi. *Revealing Persistent Structure of International Trade by Nonnegative Matrix Factorization* • Jean-Pascal Bassino, Pablo Jensen and Matteo Morini. *The evolution of Japanese business networks in ASEAN countries*

	since the 1960s
	• Junqing Tang, Layla Khoja and Hans Heinimann. *Modelling stock survivability resilience in signed temporal networks: A study from London stock exchange*
16:00	Coffee Break
16:30	**Katharina A. ZWEIG** **Network analysis literacy: a socioinformatic approach** Chair: *Cristina Masoller*
17:15	**Oral 9A: Community Structure** Chair: *Gergely Palla*
	• Mandar Chaudhary, Stephen Ranshous and Nagiza Samatova. *A Community-driven Graph Partitioning Method for Constraint-based Causal Discovery* • Raphaël Tackx, Fabien Tarissan and Jean-Loup Guillaume. *ComSim: A bipartite community detection algorithm using cycle and node's similarity* • Ferran Parés, Dario Garcia-Gasulla, Armand Vilalta, Jonatan Moreno, Eduard Ayguadé, Jesús Labarta, Ulises Cortés and Toyotaro Suzumura. *Fluid Communities: A Competitive, Scalable and Diverse Community Detection Algorithm* • Philippe Gagnon, Gilles Caporossi and Sylvain Perron. *Parallel Community Detection Methods for Sparse Complex Networks* • Zhao Yang, Juan Ignacio Perotti and Claudio Juan Tessone. *A comparison of hierarchical community detection algorithms*
17:15	**Oral 9B: Network Analysis & Measures** Chair: *Giuseppe Mangioni*
	• Marco Bastos, Carlo Piccardi, Michael Levy, Neil McRoberts and Mark Lubell. *Core-periphery or decentralized? Topological shifts of specialized information on Twitter* • Fabian Maschler, Fabian Geier, Bodo Bookhagen and Emmanuel Müller. *Clustering of Spatially Embedded Time Series via Complex Networks* • Davide Vega and Matteo Magnani. *Text networks: foundations and structural analysis* • Yuan Gao, Zhen Zhu and Massimo Riccaboni. *Consistency and Trends of Technological Innovations: A Network Approach to the International Patent Classification Data* • Jürgen Hackl. *tikz-network: a LaTeX library for vizualizing complex networks*
18:30	**Closing**

LUNCH

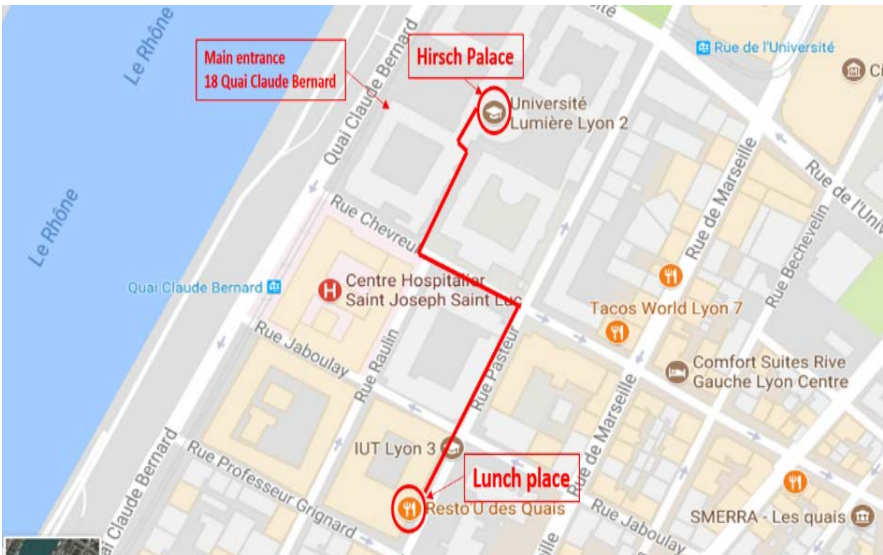Restaurant Universitaire des Quais

94, Rue Pasteur, 69007 Lyon
Do not forget to bring your lunch ticket!

It's a **5 minutes walk** from the **Hirsch Palace**

- From the Hirsch Palace, use the side entrance to reach Rue Chevreul
- Turn left on Rue Chevreul, then turn right on Rue Pasteur
- Cross Rue Jaboulay; the entrance of "Resto U des Quais" is on your right

WELCOME RECEPTION

Wednesday, November 29, 2017

Reception Room
Hirsch Palace - Lyon 2 University

In the heart of the **Hirsch Palace**, on the first floor, the Reception room will host the Welcome ceremony

19:15 - 19:30 Welcome remarks:

Isabelle VON BUELTZINGSLOEWEN Vice-President, University of Lyon 2
Yanick RICARD Vice-President, ENS Lyon
Yacine OUZROUT DISP Lab, University of Lyon 2

Thursday, November 30, 2017

Le Caro de Lyon   23/25, rue du Bât d'Argent, 69001 Lyon

http://lecarodelyon.fr/
04 78 39 58 58

Do not forget to bring your dinner ticket!

How to get there *walking:*

From **Hirsch Palace**, it's a **30 minutes' walk** to get there through a touristic route

- From the main entrance cross the University bridge (Pont de l'Université)
- Turn right on Quai Dr Gailleton, then walk around 500m and turn left Rue de la Barre. Go straight until the famous Bellecour square (*Place Bellecour*)
- Turn right on Rue de la République
- Keep going and after 150m, turn left on Rue des Archers, then move forward up to the end of the street until Célestins square (*Place des Celestins*) where you can admire the Célestins theater (*Théâtre des Célestins*) and turn right on Rue Jean Fabre
- Keep going and after 150m, cross the beautiful Jacobins square (*Place des Jacobins*) and take Rue du Président Herriot
- After 400m, turn right on Rue du Bât d'Argent

DINNER BANQUET

Thursday, November 30, 2017

Le Caro de Lyon   23/25, rue du Bât d'Argent, 69001 Lyon

http://lecarodelyon.fr/
04 78 39 58 58

Do not forget to bring your dinner

How to get there by *Public transportation*:

It takes **around 15 minutes from the Hirsch Palace**

- Take the tram T1 at "Quai Claude Bernard "station on the Perrache direction
- Get off at Perrache station and take the metro Line A, on the "Vaulx-en-Velin La Soie" direction
- Get off at "Hôtel de Ville - Louis Pradel" station
- Once outside, you can see the *Opéra de Lyon* and the *Hôtel de Ville*
- From there, take Rue Joseph Serlin and turn right on Rue du Garet
- Keep going and turn left on Rue du Bât d'Argent

Time	Day 1 - November, 29 2017
08:00 - 08:45	Registration
08:45 - 09:00	Opening
09:00 - 09:45	Speaker 1: Alex Arenas
09:45 - 10:45	L1: Reputation & influence - Community Structure
10:45 - 11:30	P1A: Diffusion & Epidemics - P1B: Network in Finance & Economics (C. Break)
11:30 - 13.15	O1A: Social Reputation & Influence - O1B: Biological Networks
13:15 - 14:45	Lunch
14:45 - 16:00	O2A: Diffusion & Epidemics - O2B: Link Analysis & Ranking
16:00 - 16:45	P2A: Network Analysis & Measures - P2B: Network Models (C. Break)
16:45 - 17:30	Speaker 2: Daniele Quercia
17:30 - 19:15	O3A: Dynamics on/of Networks - O3B: Modeling Human Behavior
19:15 - 19:30	Welcome Remarks
19:30 - 21:30	Welcome Reception

Time	Day 2 - November 30, 2017
8:00 - 8:45	Registration
8:45 - 9:30	Speaker 3: Santo Fortunato
9:30 - 10:30	L2: Diffusion & Epidemics - Network Measures
10:30 - 11:15	P3A: Bio & Brain Networks - P3B: Motif Discovery & Urban Networks (C. break)
11:15 - 13.15	O4A: Diffusion & Epidemics - O4B: Network in Finance &Economics
13:15 - 14:45	Lunch
14:45 - 16:00	O5A: Network Models - O5B: Social Reputation & Influence
16:00 - 16:45	P4A: Community Structure - P4B: Link Analysis (C. Break)
16:45 - 17:30	Speaker 4: Jennifer Neville
17:30 - 19:15	O6A: Resilience, Control & Synchronization - O6B: Network Analysis & Measures
20:00 - 22:00	Dinner Banquet

Time	Day 3 - December 01, 2017
8:00 - 8:45	Registration
8:45 - 9:30	Speaker 5: Frank Schweitzer
9:30 - 10:30	L3: Network Models - Social & Political Networks
10:30 - 11:15	P5A: Dynamics on/of Networks - P5B: Resilience & Control (C. Break)
11:15 - 13.15	O7A: Dynamics on/of Networks - O7B : Brain Networks
13:15 - 14:45	Lunch
14:45 - 16:00	O8A: Network Models - O8B: Networks in Finance & Economics
16:00 - 16:30	Coffee Break
16:30 - 17:15	Speaker 6: Katharina Zweig
17:15 - 18:30	O9A: Community Structure - O9B: Network Analysis & Measures
18:30 - 18:45	Closing
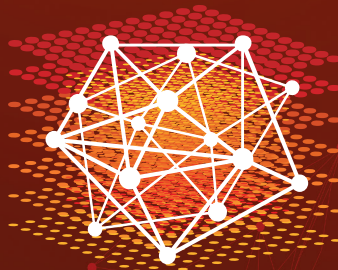
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The 6th International Conference on Complex Networks and Their Applications
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