NetSci-X 2020

International School and Conference on Network Science

Jan 20-23, 2020 | Tokyo, Japan

Waseda University International Conference Center

Keynote speakers: Albert-László Barabási / Alain Barrat / Katy Börner / Meeyoung Cha

Invited speakers: Manlio De Domenico / Shlomo Havlin / Petter Holme / Byungnam Kahng / Joe Labianca / Linyuan Lü / Misako Takayasu

https://netscix2020tokyo.github.io/

NetSci-X 2020:
International School and Conference on Network Science
~ Networks and Innovation ~

January 20–23, 2020 @ International Conference Center, Waseda University
Hosted by Waseda Innovation Lab

Sponsors:

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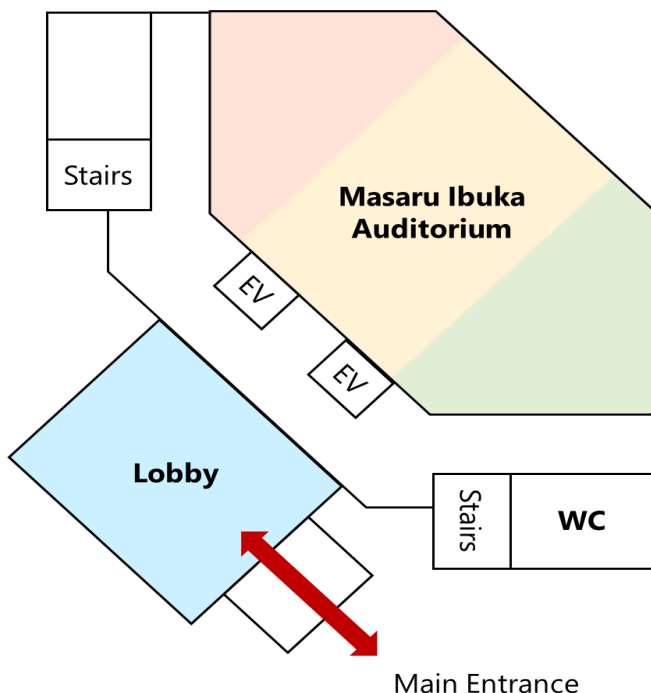**Other Committee Members**: Marko Jusup, Yohsuke Murase
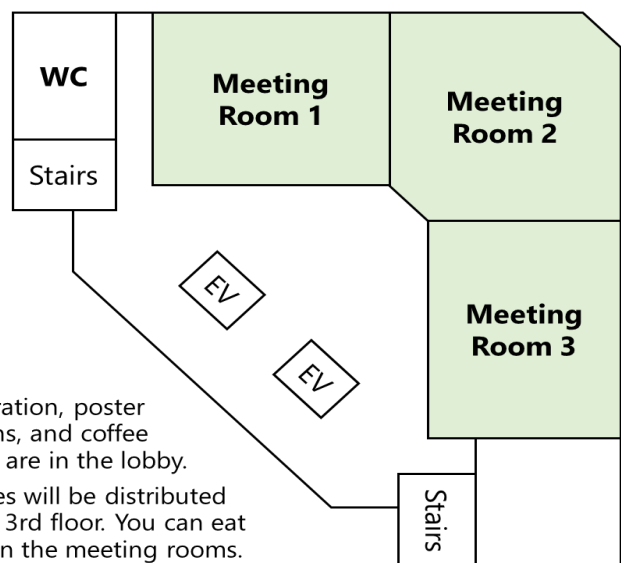
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Program Overview

MON, January 20		TUE, January 21		WED, January 22		THU, January 23
8:15	**Registration**	8:15	**Registration**	8:15	**Registration**	
9:00	**Opening remarks**	9:00	**Meeyoung Cha** Chair: Jesus Gómez-Gardeñes	9:00	**Alain Barrat** Chiar: Tao Jia	
9:10	**Katy Börner** Chair: Hiroki Sayama					**School / Special**
10:10	**Joe Labianca** Chair: Junichi Yamanoi	10:00	**Petter Holme** Chair: Jesus Gómez-Gardeñes	10:00	**Linyuan Lü** Chiar: Tao Jia	
10:40	**Coffee break**	10:30	**Coffee break**	10:30	**Coffee break**	
11:10	**Contributed session 1**	11:00	**Contributed session 3**	11:00	**Contributed session 5**	
12:30	**Lunch**	12:20	**Lunch**	12:20	**Lunch**	
14:00	**Misako Takayasu** Chair: Guido Caldarelli	13:50	**Shlomo Havlin** Chiar: Naoki Masuda	13:50	**Manlio De Domenico** Chair: Alex Arenas	
14:30	**Short break**	14:20	**Byungnam Kahng** Chiar: Naoki Masuda	14:20	**Short break**	
14:40	**Contributed session 2**			14:30	**Contributed session 6**	
		14:50	**Coffee break**			
16:00	**Coffee break**	15:20	**Contributed session 4**	15:50	**Coffee break**	
16:10 - 17:50	**Poster session 1**			16:20	**Albert-László Barabási** Chair: Kwang-Il Goh	
		16:40 - 18:20	**Poster session 2**	17:20 - 17:40	**Awards & Annoncements**	
18:00	**Reception** Places & Spaces: Mapping Science Digital Exhibit			18:00	**Banquet** Rihga Royal Hotel	

Keynote talks	
Invited talks	
Contributed talks	
Poster	

Floor Map

1st Floor

Stairs

Masaru Ibuka Auditorium

EV

EV

Lobby

Stairs

WC

Main Entrance

3rd Floor

WC

Stairs

Meeting Room 1

Meeting Room 2

EV

EV

Meeting Room 3

Stairs

- Registration, poster sessions, and coffee breaks are in the lobby.
- Lunches will be distributed on the 3rd floor. You can eat lunch in the meeting rooms.
- Reception will be in the meeting rooms on the 3rd floor.
- Banquet will be at the Rihga Royal Hotel (5 min. walk from the Conference Center).

Local Logistics

Registration desk – Registration will open at 8:15am on each day in the Lobby area. Please pick up your registration materials before going to sessions. You are required to always wear your name tag while you participate in the conference.

Coffee breaks – There will be morning and afternoon breaks with coffee/tea/water provided near the Lobby area on each day. See the conference schedule for details of the times.

Lunch – Your conference registration includes lunches (Japanese bento box) during the main conference (Monday, Tuesday and Wednesday). Vegetarian and other dietary options should be available for those who requested them. Lunch boxes will be distributed on the third floor. You can eat your lunch in the meeting rooms.

Reception – The reception in the evening of Monday January 20th will be held in the meeting rooms and open to all participants. Keynote speaker Katy Börner's *"Places & Spaces: Mapping Science" Digital Exhibit* (http://scimaps.org/) will be presented there. See how network models and visualizations can help us understand the world!

WiFi – The following WiFi connection will be available for NetSci-X 2020 participants at the venue during the conference: SSID: **waseda-event010** Security key: **5GzW4xwN**

Social media – We encourage participants to spread their conference experience on social media. The conference's official hashtag is **#NetSciX2020** .

For Presenters

Each session room is equipped with a standard VGA/HDMI projector. It is the presenter's responsibility to bring a laptop computer and any necessary adapter (especially for Mac users) for their presentation.

Poster sessions will be held in the Lobby. Posters assigned to Session 1 can be set up any time after 10:40 am on Monday and must be taken down at the end of Session 1. Posters assigned to Session 2 can be set up any time after 10:30 am on Tuesday and must be taken down at the end of Session 2.

Best Junior Researcher Presentation Award / Best Poster Award

NetSci-X 2020 will offer the Best Junior Researcher Presentation Award and the Best Poster Award. The winners will be selected from accepted talks and posters by the judge panels and will be recognized with a certificate at the end of the main conference on Wednesday.

Proceedings

The papers accepted in the Proceedings Track are now published in the following Springer Proceedings in Complexity volume:
https://www.springer.com/us/book/9783030389642

The whole volume will be made available for free download during the conference.

Keynote/Invited and Parallel Sessions Talk Schedule

Room	Theme	Authors	Title
Keynote/Invited [Monday Jan. 20, 2020 -- 9:10-10:40]			**Chair: Hiroki Sayama, Junichi Yamanoi**
Ibuka Auditorium (1F)	**Keynote**	Katy Börner	Network Models and Visualizations of Education, Scientific, and Job Market Developments
	Invited	Joe Labianca	Recognizing the Positive and Negative Ties in a Network
Contributed Session 1 [Monday Jan. 20, 2020 -- 11:10-12:30]			
Ibuka Auditorium (1F)	**Economic and Financial**	Irena Vodenska, Nima Dehmamy, Alexander Becker, Sergey Buldyrev, Shlomo Havlin, and Gene Stanley	Vulnerability of interconnected financial networks
	Chair: Giulio Cimini	Takayuki Mizuno, Shohei Doi, and Shuhei Kurizaki	Visualizing indirect influence of China in global shareholding networks
		Kimihiro Nakaga, Koji Eguchi, Takayuki Mizuno, and Atsuhiro Takasu	Embedding and predicting supply-chain networks
		Mayu Furukawa, Tomomi Kito, Junichi Yamanoi, and Hiroki Sayama	An integrated index for product & customer diversification strategies
Meeting Room 1 (3F)	**Network Structure 1**	Quoc Hoan Tran, Van Tuan Vo, and Yoshihiko Hasegawa	Scale-variant topological portraits of complex networks
	Chair: Jean-Gabriel Young	Takayuki Hiraoka and Koji Oishi	Genealogical network analysis of social group evolution
		Chihiro Noguchi and Tatsuro Kawamoto	Robustness of spectral clustering for networks with an overlapping community structure
		Ivana Bachmann, Francisco Sanhueza and Javier Bustos-Jiménez	Space geometry effect over the Internet as a physical-logical interdependent network
Meeting Room 2 (3F)	**Temporal**	Radosław Michalski, Jaroslaw Jankowski, and Piotr Bródka	Sequential seeding in temporal networks
	Chair: Hiroshi Kori	Hartmut Lentz, Andreas Koher, James Gleeson, and Philipp Hövel	Epidemic spreading on temporal networks - a contact-based model
		Kashin Sugishita, Mason Porter, Mariano Beguerisse-Diaz, and Naoki Masuda	Opinion dynamics in tie-decay networks
		Tomomichi Nakamura and Toshihiro Tanizawa	Constructing networks for multivariate nonlinear and nonstationary time series
Meeting Room 3 (3F)	**Brain**	Hardik Rajpal, Matthew Fredericks, Pedro Mediano, Fernando Rosas, Stefan Brugger, and Henrik Jeldtoft Jensen	Network and other higher order measures in the brain: lessons from a study of schizophrenia
	Chair: Carlo Vittorio Cannistraci	Makoto Fukushima and Kenji Leibnitz	Simulating packet-based communication on brain structural networks
		Tommaso Gili, Andrea Gabrielli, Guido Caldarelli, Fabrizio Piras, Gianfranco Spalletta, and Rossana Mastrandrea	Functional brain network topology maps the dysfunctional substrate of schizophrenia
		Hao Wang and Linyuan Lü	Higher-order morphorspace in individual myelin-based brain network
Invited [Monday Jan. 20, 2020 -- 14:00-14:30]			**Chair: Guido Caldarelli**
Ibuka Auditorium (1F)	**Invited**	Misako Takayasu	Modeling of the business transaction network in Japan and its practical applications
Contributed Session 2 [Monday Jan. 20, 2020 -- 14:40-16:00]			

Ibuka Auditorium (1F)	**Social**	Guido Caldarelli, Rocco De Nicola, Fabio Del Vigna, Marinella Petrocchi, and Fabio Saracco	The role of bot squads in the political propaganda on Twitter
Chair: Irena Vodenska		Amirhossein Farzam, Parham Moradi, Zahra Padar, Mahdi Sarikhani, and Kosar Karimipour	Collective identity and social bots in Farsi Twitter
		Jia-Rong Xie, Gang Yan, Jiachen Sun, Xiao Ma, and Yanqing Hu	Unexpectedly high capacity and extremely unbalanced discursive power of social media networks to spread information
		Diego Fregolent Mendes de Oliveira and Kevin S. Chan	Competition and spreading of low and high quality information in online social networks
Meeting Room 1 (3F)	**Network Structure 2**	Ignacio Morer, Alessio Cardillo, Albert Diaz-Guilera, Luce Prignano, and Sergi Lozano	Comparing spatial networks: a 'one size fits all' efficiency-driven approach
Chair: Takayuki Hiraoka		Michael Wilsher, Carl P. Dettmann and A.J. Ganesh	Connectivity of 1-dimensional Soft Random Geometric Graphs
		Serafino Matteo, Giulio Cimini, Amos Maritan, Samir Suweis, Jayanth Banavar, and Guido Caldarelli	Scale-free networks revealed from finite-size scaling
		Pim van der Hoorn, Dmitri Krioukov, Gabor Lippner, and Will Cunningham	Ollivier curvature in random geometric graphs on Riemannian manifolds
Meeting Room 2 (3F)	**Synchrony and Dynamics**	Ilja Rausch, Yara Khaluf, and Pieter Simoens	Network motifs and collective decision-making
Chair: Yohsuke Murase		Young Sul Cho	Concurrent formation of nearly synchronous clusters in each intertwined cluster set with parameter mismatches
		Per Sebastian Skardal and Alex Arenas	Higher-order interactions in complex networks of phase oscillators promote abrupt synchronization switching
		Hiroshi Kori	Noise stability and persistence of synchrony in a power grid model
Meeting Room 3 (3F)	**Biological and Chemical**	Boris Podobnik, Dean Korosak, Masa Skelin Klemen, Andraz Stozer, Jurij Dolensek, Marjan Slak Rupnik, Plamen Ch. Ivanov, Petter Holme, and Marko Jusup	B-cells operate collectively to help maintain glucose homeostasis
Chair: Tommaso Gili		Alessandro Muscoloni, Ilyes Abdelhamid, and Carlo Vittorio Cannistraci	Local-community network automata modelling based on length-three-paths for prediction of complex network structures in protein interactomes and food webs
		Takashi Okada, Je-Chiang Tsai, and Atsushi Mochizuki	Origin of adaptation and modularity in chemical reaction networks
		Wilmer Leal, Eugenio Llanos, Andrés Bernal, Guillermo Restrepo, Duc Luu, Juergen Jost, and Peter F. Stadler	Exploring the hypergraph structure underlying the chemical space

Keynote/Invited [Tuesday Jan. 21, 2020 -- 9:00-10:30]   Chair: Jesus Gómez-Gardeñes

Ibuka Auditorium (1F)	**Keynote**	Meeyoung Cha	Current challenges in computational social science: Fake news and robot rights
	Invited	Petter Holme	The big science of small networks

Contributed Session 3 [Tuesday Jan. 21, 2020 -- 11:00-12:20]

Ibuka Auditorium (1F)	**Urban**	Riccardo Gallotti, Giulia Bertagnolli, and Manlio De Domenico	Disentangling activity-aware human flows reveals the hidden functional organization of urban systems
Chair: Gourab Ghoshal		Mark He, Shankar Bhamidi, Joey Glasser and Nikhil Kaza	Intertemporal community detection in bikeshare networks
		Andrew Elliott, Stephen Law, and Luis Ospina-Forero	Characterising road networks through subgraph graphlet analysis
		Sakil Chowdhury, Laurent Hébert-Dufresne, and Jeff Frolik	Effective implementation of energy aware polarization diversity for iot networks using eigenvector centrality

Meeting Room 1 (3F)	Network Models and Percolation	Ivan Voitalov, Pim van der Hoorn, and Dmitri Krioukov	Weighted hypersoft configuration model with power-law degree and strength distributions
Chair: Xiaoke Xu		Andrea Gabrielli, Rossana Mastrandrea, Guido Caldarelli, and Giulio Cimini	Grand canonical ensemble of weighted networks
		John Ring, Jean-Gabriel Young, and Laurent Hébert-Dufresne	Connected graphs with a given degree sequence: efficient sampling, correlations, community detection and robustness
		Jung-Ho Kim and Kwang-Il Goh	K-selective percolation on complex networks
Meeting Room 2 (3F)	Dynamics 1	Takuma Narizuka and Yoshihiro Yamazaki	Burstiness for adjacency relationships in a Vicsek model
Chair: Oriol Artime		Huijuan Wang, Cunquan Qu, and Wioletta Ruszel	Self-avoiding pruning random walk on signed network
		Sungmin Lee, Kyu-Min Lee, and Kwang-Il Goh	Emergent complexity in dynamics on signed networks
		Guilherme Ferraz de Arruda, Giovanni Petri, and Yamir Moreno	Social contagion models on hypergraphs
Meeting Room 3 (3F)	Epidemic	Li Pi, Ceire Costelloe, and Paul Expert	Exploring carbapenem resistant enterobacteriaceae infections in imperial college healthcare trust: a network analysis using individual patient movement data
Chair: Marko Jusup		Daniela Perrotta, Enrique Frias-Martinez, Miguel Luengo-Oroz, Daniela Paolotti, Michele Tizzoni, and Alessandro Vespignani	Harnessing cell phone traces to model the spread of Zika in Colombia
		S. Jalil Kazemitabar and Arash A. Amini	Approximate identification of the optimal epidemic source in complex networks
		Minjae Jo, Bukyoung Jhun, and Byungnam Kahng	Hybrid phase transition of simplicial SIS model in scale-free uniform hypergraph

Invited [Tuesday Jan. 21, 2020 -- 13:50-14:50]   Chair: Naoki Masuda

Ibuka Auditorium (1F)	Invited	Shlomo Havlin	Some applications of network science
	Invited	Byungnam Kahng	Hybrid phase transitions in complex systems

Contributed Session 4 [Tuesday Jan. 21, 2020 -- 15:20-16:40]

Ibuka Auditorium (1F)	Innovation	Michael Park and Russell Funk	A first look at the relationship between the network of lobbying and innovation in high-tech industries
Chair: Sang Hoon Lee		Nagi Moriya, Tomomi Kito, and Junichi Yamanoi	Patent opposition network: adversarial interactions of companies and trend of innovation
		Sofia Dokuka, Kate Furman and Alex Furman	Gender imbalance in organization: females contribute to teamwork, while males increase skills
		Dion O'Neale, Steven Turnbull, and Kirsten Locke	Using network science to understand student pathways in and through STEM education
Meeting Room 1 (3F)	Inference	Nima Dehmamy, Albert-László Barabási, and Rose Yu	Learning network structure using graph convolutional networks
Chair: Laurent Hébert-Dufresne		Jean-Gabriel Young, George T. Cantwell, and M. E. J. Newman	Efficient and fully bayesian inference of complex networks from noisy data
		Fang Zhou, Manuel Mariani, and Linyuan Lü	Inferring individual influence and susceptibility in social networks from multiple cascade data
		Paolo Bertolotti, Ali Jadbabaie, and Fotini Christia	Tests for network cascades via branching processes

Meeting Room 2 (3F)	**Dynamics 2**	Akira Ishii, Nozomi Okano, Yuki Horio, and Yasuko Kawahata	Opinion dynamics theory including both trust and distrust in human relations
	Chair: Huijuan Wang	Hiroki Sayama and Junichi Yamanoi	Beyond social fragmentation: coexistence of cultural diversity and structural connectivity is possible with social constituent diversity
		Alberto Aleta and Yamir Moreno	The dynamics of collective social behavior in a crowd controlled game: Twitch plays Pokémon
		Koji Oishi and Kentaro Sakuwa	Evolution of alliance and rivalry networks in international relations
Meeting Room 3 (3F)	**Application**	Larry Zhang, Nichol Castro, Trevor Cohen, and Reza Hosseini Ghomi	Probing speech generation via semantic fluency networks in aging populations as a proxy of dementia and Alzheimer's disease
	Chair: Daniela Perrotta	Shilun Zhang, Matus Medo, Linyuan Lv and Manuel Sebastian Mariani	Anticipators of rising and declining popularity trends in socio-economic systems
		Cailean Osborne, Patrick Gildersleve, and Scott Hale	Navigating historical events through Wikipedia's link structure: a comparative analysis of article networks in 6 language editions
		Sudarshan Kumar, Tiziana Di Matteo, and Anindya Chakrabarti	Distress spillover on complex networks with feedback loops

Keynote/Invited [Wednesday Jan. 22, 2020 -- 9:00-10:30]   Chair: Tao Jia

Ibuka Auditorium (1F)	**Keynote**	Alain Barrat	Temporal contact networks
	Invited	Linyuan Lü	Vital nodes identification in complex networks

Contributed Session 5 [Wednesday Jan. 22, 2020 -- 11:00-12:20]

Ibuka Auditorium (1F)	**Game Theory**	Soya Miyoshi, Marko Jusup, and Petter Holme	Modeling the evolution of vaccine hesitancy
	Chair: Sadamori Kojaku	Xingru Chen and Fu Feng	Network-based approach to identify bridges and catalysts for persistent cooperation in the iterated prisoner's dilemma
		Jesus Gomez-Gardeñes, Clara Granell, Benjamin Steinegger, and Alex Arenas	Prevalence oscillations triggered by human prophylaxis driven by risk perception
		Alessio Cardillo and Naoki Masuda	Critical mass effect in evolutionary games on networks triggered by zealots
Meeting Room 1 (3F)	**Multilayer**	Piotr Bródka, Anna Chmiel, Matteo Magnani, and Giancarlo Ragozini	Quantifying layer similarity in multiplex networks
	Chair: Maksim Kitsak	Michael Danziger and Albert-László Barabási	Recovery coupling of multilayer networks
		Marya Bazzi, Lucas Jeub, Mason Porter, Alex Arenas, and Sam Howison	A framework for the construction of generative models for mesoscale structure in multilayer networks
		Dahae Roh and Kwang-Il Goh	Entropy production in majority-vote model on multiplex networks
Meeting Room 2 (3F)	**Time Series and Prediction**	Marcin Waniek, Kai Zhou, Yevgeniy Vorobeychik, Esteban Moro, Tomasz Michalak, and Talal Rahwan	How to hide one's relationships from link prediction algorithms
	Chair: Teruyoshi Kobayashi	Tao Jia, Yijun Ran, and Xiaoke Xu	The upper bound of link prediction by the AUC measure
		Carolina Mattsson, Shafique Jamal, Soren Heitmann and Guy Stuart	Quantifying the circulation of money within digital payment systems
		Michael Small and Debora Correa	Testing networks from time series: when is a network an adequate description of nonlinear dynamics?

Meeting Room 3 (3F)	**Robustness and Resilience**	Romeil Sandhu and Ji Liu	Maxwell's demon: controlling entropy via discrete Ricci flow over networks
Chair: Zi-ke Zhang		Yang Lou, Guanrong Chen, and Lin Wang	Towards optimal robustness of network controllability: an empirical necessary condition on node degrees
		Sergio Faci-Lázaro, Jordi Soriano Fradera, and Jesus Gomez-Gardeñes	Functional resilience of cultured neuronal networks
		Yamir Moreno	Biodiversity and structural stability of multilayer ecological networks

Invited [Wednesday Jan. 22, 2020 -- 13:50-14:20]   Chair: Alex Arenas

Ibuka Auditorium (1F)	**Invited**	Manlio De Domenico	Collective phenomena in socio-technical systems: from social bursts to social manipulation

Contributed Session 6 [Wednesday Jan. 22, 2020 -- 14:30-15:50]

Ibuka Auditorium (1F)	**Success**	Marc Santolini, Leo Blondel, Abhijeet Krishna, Emma Barme, Megan Palmer, and Albert-László Barabási	A large scale analysis of collaboration and innovation in an international science and engineering competition
Chair: Marya Bazzi		Orsolya Vasarhelyi, Igor Zakhlebin, Stasa Milojevic, and Agnes-Emoke Horvat	Gender diversity in collaboration networks and the online popularity of scientists
		Taekho You, Jinseo Park, June-Young Lee, Jinhyuk Yun, and Woo-Sung Jung	Comparing quality of questionable journals in academic ecosystem
		Riccardo Gallotti and Manlio De Domenico	Collective effects of individual decisions -- the case of the Nobel prize
Meeting Room 1 (3F)	**Embedding**	Maksim Kitsak and Dmitri Krioukov	Cross-geometric framework for complementarity-driven networks
Chair: Michael Danziger		Yanchen Liu, Nima Dehmami, and Albert-László Barabási	Topological characterization of 3D graph embedding landscapes using the graph linking number
		Olivier Guin, Roland Molontay, and Marcell Nagy	Comparing structural feature-based and graph embedding-based network classification methods
		Takeshi Hase and Masanori Shimono	Neural network embedding of real neuronal networks
Meeting Room 2 (3F)	**Cascade**	Oriol Artime and Manlio De Domenico	Cascade-based attacks on multilayer networks
Chair: Michael Small		Tomokatsu Onaga, Fabio Caccioli, and Teruyoshi Kobayashi	Modelling fire sales as heterostate dynamical processes on bipartite networks
		Yafei Zhang, Lin Wang, Jonathan Zhu, and Xiaofan Wang	The virality and growth of cascades
		Shaunette Ferguson, Sadamori Kojaku, and Teruyoshi Kobayashi	Diurnal dynamics of financial systemic risk
Meeting Room 3 (3F)	**Community**	Andrew Elliott, Angus Chiu, Marya Bazzi, Gesine Reinert, and Mihai Cucuringu	Core–periphery structure in directed networks
Chair: Alessio Cardillo		Vaiva Vasiliauskaite and Tim Evans	Making communities show respect for order
		Christopher Blöcker and Martin Rosvall	Mapping flow in bipartite networks
		Aditya Tandon and Santo Fortunato	Fast consensus clustering in complex networks

Keynote [Wednesday Jan. 22, 2020 -- 16:20-17:20]   Chair: Kwang-Il Goh

Ibuka Auditorium (1F)	**Keynote**	Albert-László Barabási	Taming Complexity: From networks to brain control

Poster Presentations

Session 1 (Monday January 20th, 4:10pm - 5:50pm)

Poster No.	Authors	Title
5	Francesco Pierri, Carlo Piccardi and Stefano Ceri	Revealing disinformation news with a structural comparison of Twitter diffusion networks
6	Alan Ballard	Statistical Community Detection in Temporal Networks
9	Xiaowen Zhong and Ying Fan	The emergence of cooperation in public goods games on signed network
13	Yandong Xiao, Liang Bai and Songyang Lao	Design Directed Network with Optimal Controllability
16	Xiuxiu Zhan, Alan Hanjalic and Huijuan Wang	Information diffusion backbones in temporal networks
17	Eitan Asher and Shlomo Havlin	EEG network synchronization increases with Parkinson's disease stage
18	Sayat Mimar, Mariamo Mussa Juane, Juyong Park, Alberto P. Munuzuri and Gourab Ghoshal	Turing patterns mediated by network topology in homogeneous active systems
19	Masanori Takano and Kenichi Nakazato	A balance between edge- and node-excitation mechanisms realizes the difference of communication systems
21	Fanhui Meng, Haoming Sun, Jiarong Xie, Chengjun Wang, Jiajing Wu and Yanqing Hu	Numerical Preferences on Online Social Networks
27	Milad Abbasiharofteh	Driving forces of invention in European regions: a network approach
28	Yoram Louzoun, Roi Naaman and Keren Cohen	Edge sign prediction based on a combination of network structural topology and sign propagation
29	Yoram Louzoun and Akiva Bruno Melka	Natural Emergence of a Core Structure in Networks via Clique Percolation
30	Yoram Louzoun, Jing Fang and Keren Cohen	Topology of products similarity network for market forecasting
31	Yinzuo Zhou and Jie Zhou	Effective Degree Theory for Awareness and Epidemic Spreading on Multiplex Networks
32	Ivan Smirnov	Association between depression and online social integration
33	Mi Jin Lee, Eun Lee, Byunghwee Lee, Hawoong Jeong, Deok-Sun Lee and Sang Hoon Lee	Uncovering hidden mutual importance in networks via information entropy
34	Chung-Yuan Huang and Wei-Chien-Benny Chin	Hierarchical Arc Type Analysis (HATA) Algorithm: Incorporating Significant Direction Effects to Uncover Arc Strength in Complex Directed Networks
35	Xiaoke Xu, Si-Yuan Liu and Jing Xiao	Sign Prediction by Motif Naive Bayes Model in Online Social Networks
36	Xiaoke Xu, Lin Ding and Jing Xiao	Uncovering the Dependence of Cascading Failures on Network Topology by Constructing Null Models
38	Jing Xiao and Xiaoke Xu	Constructing Real-Life Benchmarks for Community Detection by Rewiring Edges
43	Gabrielli Andrea, Giulio Cimini, Luciano Pietronero, Emanuele Pugliese, Andrea Zaccaria and Aurelio Patelli	Unfolding the innovation network for the development of countries: co-evolution of Science, Technology and Production
48	Jiachen Ye and Peng Ji	System performance metrics on the intra- and inter-clusters coupling balance
51	Tomonori Manabe, Shohei Usui and Kei Nakagawa	Relationship between corporate brand and market value, profitability, characteristics of business network in Japanese B2B markets
52	Xiaolu Jia, Daichi Yanagisawa, Claudio Feliciani and Katsuhiro Nishinari	Estimation of pedestrian evacuation time based on pedestrian flow network considering the variation of fundamental diagram

181	Yuji Fujita, Yuichi Kichikawa and Yoshi Fujiwara	Local bow-tie structure of the web
183	Maddalena Torricelli, Márton Karsai and Laetitia Gauvin	Event embedding for temporal networks
186	Akira Matsui	Extracting user traits by decomposing consumption behavior
189	Oriol Artime, Valeria D'Andrea, Riccardo Gallotti and Manlio De Domenico	Unraveling the resilience of online social networks to (the lack of) freedom of speech
191	Dimitri Loutchko	An algebraic formalism for the coarse-graining of functional biochemical networks
199	Elma Demir	"The Future of Work": An Interdisciplinary Study of the Global Structural Transformation
200	Toshihiro Tanizawa	Percolation transition on scale-free networks with strong degree assortativity
204	Yutaka Kuroki and Takayuki Shiohama	Bootstrap Estimation for Rating Based Network Centrality Measures
205	Satoru Morita, Hiromu Ito and Taro Yamamoto	Basic Reproduction Number of Sexually Transmitted Infections with Mother-to-Child Infection
208	Susumu Nagayama, Sho Izumo, Masahiro Kazama, Kazutaka Inoue, Yuji Uema and Yoshiki Ishikawa	The Signature of the Flow State: Eye-on-Eye Movements
209	Rishabh Kaushal, Shubham Singh and Ponnurangam Kumaraguru	NeXLink: Node Embedding Framework for Cross-Network Linkages Across Social Networks
211	Marcell Nagy and Roland Molontay	Comparing Box-covering Algorithms for Fractal Dimension of Complex Networks
214	Anri Suzuki and Fujio Toriumi	Detecting gullible users on Twitter
215	Sotaro Sada and Yuichi Ikeda	How the value flows through international trade
219	Alessandro Muscoloni and Carlo Vittorio Cannistraci	The trilogy of algorithms for network embedding in the hyperbolic space
220	Alessandro Muscoloni, Claudio Durán and Carlo Vittorio Cannistraci	Latent geometry inspired graph dissimilarities can boost community detection in complex networks

Session 2 (Tuesday January 21st, 4:40pm - 6:20pm)

Poster No.	Authors	Title
53	Ryutaro Hashimoto and Tatsuro Kawamoto	Numerical performance assessment for inference of block models with multiple edge labels
54	Mikaela Irene Fudolig, Takayuki Hiraoka and Hang-Hyun Jo	A temporal network framework for music theory
55	Orsolya Vasarhelyi and Balazs Vedres	Gendered behavior as a disadvantage in open source software development
57	Naoki Maejima, Shohei Usui and Takanori Nishida	Exploring Temporal Pattern of Structural Embeddedness and its Effect on Tie Strength
58	Chihiro Noguchi and Tatsuro Kawamoto	Robustness of spectral clustering for networks with an overlapping community structure
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276	Hirotaka Fukushige and Tomomi Kito	Road-Railway Detour Index for multimodal transportation networks
277	Malayaja Chutani and Neelima Gupte	Study of overlaps in scientific collaboration networks
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