

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

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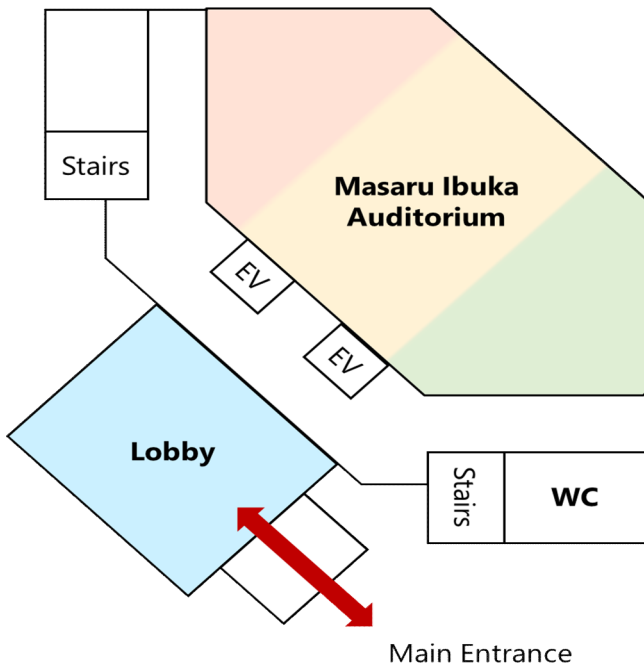
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Program Overview

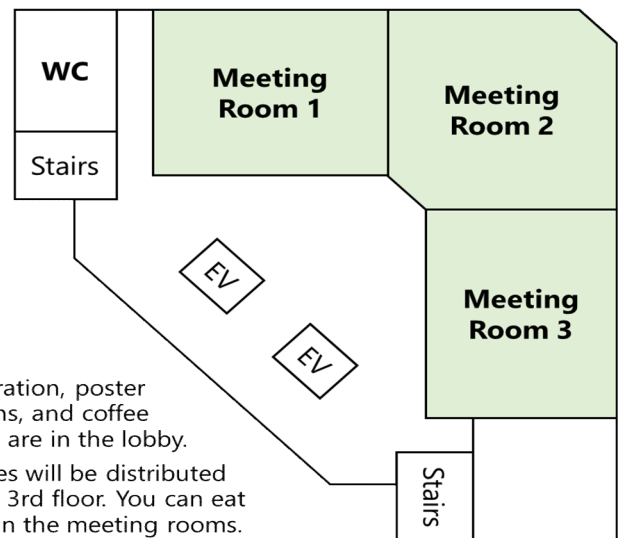
MON, January 20		TUE, January 21		WED, January 22		THU, January 23	
8:15	Registration	8:15	Registration	8:15	Registration	School / Special	
9:00	Opening remarks	9:00	Meeyoung Cha Chair: Jesus Gómez-Gardeñes	9:00	Alain Barrat Chair: Tao Jia		
9:10	Katy Börner Chair: Hiroki Sayama	10:00	Petter Holme Chair: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

Floor Map

1st Floor



3rd Floor



- 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.

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 Atsuhiko 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, Jarosław 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 morphospace 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

97	Ryota Kobayashi and Shigeru Shinomoto	Estimating Neural Connectivity from Spike Trains
100	Alberto Aleta, Xiangrong Wang, Yamir Moreno and Dan Lu	Directionality Reduces the Impact of Epidemics in Multilayer Networks
102	Jiawei Yan	Kinetic Uncertainty Relations for the Control of Stochastic Reaction Networks
105	Olivia Sashiko Shirai Reyna, Idalia Flores de la Mota and Katya Rodríguez Vázquez	TOPOLOGICAL ANALYSIS USING COMPLEX NETWORKS: THE MEXICO CITY METRO SYSTEM
106	Eyal Gal, Rodrigo Perin and Idan Segev	Neuron Geometry Underlies Universal Network Features in the Cortex
108	Wataru Souma	Whose paper is #1?
109	Ta-Chou Ng and Jui-Hsiang Lin	Inferring the Causal Structure of Disease Comorbidity Network from Longitudinal Medical Data
110	Kaiqi Zhang, Zinan Lv and Meixue Guo	An Adaptive Networks Model Based on Social Identity Theory
111	Shun Kimura and Koujin Takeda	Improved algorithm for neuronal ensemble inference by Monte Carlo method
112	Demival Vasques Filho and Dion O'Neale	The bipartite structure of social networks
113	Naoya Fujiwara, Takashi Kirimura and Takayuki Hiraoka	Mobility networks and distribution of location-specific nouns in geo-tagged tweets
115	Akira Ishii and Nozomi Okano	Two dimensional opinion dynamics of real opinion and official stance
117	Shuqi Xu, Manuel S Mariani, Linyuan Lü, Lorenzo Napolitano, Emanuele Pugliese and Andrea Zaccaria	The evolution of firms' technological impact and its predictability
120	Chun-Hsiang Chan, Tzai-Hung Wen, Tzu-How Chu and Jiun-Huei Protty Wu	Characterizing the roles of nodes in the global airline alliance network: Considering structure equivalence and geographic proximity
122	Gakuto Watanabe, Yukie Sano and Hiroki Sayama	Collective attention decay with exogenous event
123	Mikhail Sirenko, Scott Cunningham, Nuno Araujo and Trivik Verma	Disentangling Public Transit Ridership into a Spatiotemporal Geography
124	Xinwei Wang, Guo-Ping Jiang and Xu Wu	Reconstructing topological structures for general weighted complex dynamical networks with incomplete measurements
125	Alexandru Topirceanu, Mihai Udrescu and Radu Marculescu	Complex Networks Antifragility Under Sustained Edge Attack-Repair Mechanisms
126	Matúš Medo, Manuel Sebastian Mariani and Linyuan Lü	Universal patterns in the commenting network of online news articles
130	Patrick Gildersleve, Taha Yasseri and Renaud Lambiotte	Bridging the Floating Gap: How News Events Build Networks of Collective Memory on Wikipedia
132	Ayumi Ozawa and Hiroshi Kori	Suppression of synchronization in coupled non-identical oscillators by global feedback
133	Hyewon Kim, Hang-Hyun Jo and Hawoong Jeong	Influence of environmental changes on temporal networks
134	Je Ung Song	Effective potential approach to hybrid synchronization transitions
136	Wonjun Choi, K. Choi and B. Kahng	A hybrid percolation transition of scale-free network
137	Yuka Fujiki and Kousuke Yakubo	Identification of fractality by assortativity invariance under renormalization
169	Yang Lou, Guanrong Chen and Lin Wang	Toward Stronger Robustness of Network Controllability: The q-Snapback Network Model
171	Cong Li, Shumin Zhang and Xiang Li	Can multiple social ties help improve human location prediction?
174	Sang-Hwan Gwak and Kwang-Il Goh	Percolation process on signed complex networks
175	Tianlong Fan, Jing Guo and Linyuan Lü	Towards the cycle structures in complex network: A new perspective
180	Yasuko Kawahata	Examination of urban movement tendency using multi-dimensional data considering personal information

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 Hanq-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
61	Minjun Kim and Hiroki Sayama	The Power of Communities: A Text Classification Model with Automated Labeling Process Using Network Community Detection
63	Riho Kawaguchi, Dachi Yanagisawa and Katsuhiko Nishinari	The influence of variation of processing speed on flow of an assembly line
65	Youjin Lee and Elizabeth Ogburn	Testing for Network and Spatial Autocorrelation
66	Shohei Usui, Naoki Maejima and Takanori Nishida	Who has a lot of effective encounters?
67	Orr Levy, Guy Amit, Dana Vaknin, Tom Snir, Peter Castaldi, Yang-Yu Liu, Haim Cohen, Sol Efroni and Amir Bashan	Loss of gene-to-gene transcriptional coordination unveils the stochastic nature of aging
69	Yukie Sano	Empirical Analysis of Academic Network based on Acknowledgment Statement

71	Kohei Ichikawa, Yuma Kajihara and Kotaro Sakamoto	Local synaptic pruning rule achieving near-optimal network controllability
72	Mariko Ito and Takaaki Ohnishi	Minimum spanning tree of biologically relevant chemical space
75	Masaki Chujyo and Yukio Hayashi	Rewirings by enhancing loops improve network robustness
76	Nanxin Wei, Qing Yao and James Gleeson	Generalised Cascade Condition for Watts Threshold Model on Complex Networks
77	Liang Zhao and Tianyi Peng	An Allometric Scaling for the Number of Representative Nodes in Social Networks
78	Liao Fuxuan and Yukio Hayashi	A new relation of k-shell and feedback vertex set
79	Hirotooshi Kanda and Yukio Hayashi	How to change the generation rule from selfish preferential attachment to cooperative intermediation attachment
80	Radosław Michalski and Michal Weskida	Social Influence Maximization with Time Constraints using Genetic Algorithm
84	Takanori Nishida, Susumu Nagayama, Naoki Maejima and Shohei Usui	Magical Encounters in the Business Card Exchange Networks
86	Paul Expert and Takayuki Nozawa	Blind Source Graph Signal Transform Denoising
91	Marcel Weiss and Sebastian E. Ahnert	Detecting and estimating the community structure of neutral components in the genotype-phenotype map of RNA secondary structure
94	Hiromitsu Goto, Yuji Nakatani and Chikara Funabashi	Learning Community and Online Social Network: Case of Japanese Study Abroad Program
96	Hibiki Taguchi, Tsuyoshi Murata and Xin Liu	BiMLPA : Community Detection in Bipartite Networks by Multi-Label Propagation
98	Genki Ichinose and Hiroki Sayama	Sensitivity and Levy flights in spatial cooperation
140	Fei Yu, Makoto Nirei and Toshiaki Shoji	Formation of Chinese Venture Capital Network
143	Makoto Takeuchi	Epidemic modeling of viral music diffusion
144	Ryoji Sato, Ichiro Sato, Masahiko Kaneko and Takayuki Mizuno	Prediction of Shock Propagation Through Supply Chain with Machine Learning
146	Ken Yamamoto and Takuma Narizuka	Growth of ball-passing networks in football games
147	Fei Ying Kuo and Tzai Hung Wen	Regionalization for Infection Control: A Graph Partitioning Algorithm Considering Regularity of Human Mobility for Delineating Quarantine Zones
148	Joomi Jun and Takayuki Mizuno	Extract Unethical Users in Bitcoin Networks
149	Ollin Langle-Chimal and Nick Cheney	Nonbacktracking community detection algorithm for weighted and directed networks
151	Deokjae Lee, Yongsun Lee and Byoungnam Kahng	Growth of scientific collaborations: emergent of first Betti number in growing simplicial complex
153	Inho Hong, Morgan Frank, Iyad Rahwan, Woo-Sung Jung and Hyejin Youn	Cities recapitulate a universal pathway to innovative economies
154	Jinhyuk Yun, Sejung Ahn and June Young Lee	Relatedness inspired clustering of scientific literatures using direct citations exclusively
155	Juan Carlos Sanchez Herrera and Carolyn Dimitri	Farm2Recipe, Connecting Food Recipes to Local and Organic Products. A Network Science approach.
156	Sakurako Tanida, Ken'ya Furuta, Kaori Nisikawa, Tetsuya Hiraiwa, Hiroaki Kojima and Masaki Sano	Effect of Volume Exclusion on the Ordered Phase of Collective Motion
157	Masaki Aida, Chisa Takano and Masaki Oqura	On the Fundamental Equation of User Dynamics and the Structure of Online Social Networks
158	Xin Zhang, Jialiang Yu and Gene Stanley	The evolution of the cross-broader venture capital network:1970–2018
159	Chisa Takano and Masaki Aida	Universality of Nodal Degree Correlation in Twitter Follower Relationships
160	Jinha Park, Sudo Yi, K. Choi, Deokjae Lee and Byoungnam Kahng	Interevent time distribution, burst, and hybrid percolation transition
163	Jongshin Lee and Byungnam Kahng	Betweenness centrality distribution based on research teams in a co-authorship simplicial complex.
164	Hoyun Choi, Jinha Park and B. Kahng	Interevent time distribution in abrupt percolation transition

165	Kota Takeda, Masato Hisakado and Shintaro Mori	How to collect private signals in information cascade : an empirical study
221	Alessandro Muscoloni and Carlo Vittorio Cannistraci	A nonuniform popularity-similarity optimization (nPSO) model to efficiently generate realistic complex networks with communities
222	Toshimichi Wakabayashi and Yasuko Kawahata	Examination of approach to opinion distribution on Web media in large-scale relay event using stochastic process
225	Yuma Takeuchi, Tomomi Kito and Junichi Yamanoi	Trademark network analysis for investigation of name-branding strategies
230	Muhammad Mohsin Hakeem	Startups Going Public: A Rare Sight in Japanese Financial Markets
231	Nicolo Pagan, Wenjun Mei and Florian Dorfler	Emergence of scaling on the followers of social media influencers
234	Marco Cogoni, Giovanni Busonera and Gianluigi Zanetti	Percolation transition in simulated urban traffic
235	Suman Acharyya, Baruch Barzel and Reuven Cohen	Real-time mitigation of the propagation of perturbations on complex networks
236	Elohim Reis, Aming Li and Naoki Masuda	Human dynamics as a mixture of Poisson processes
237	Demival Vasques Filho and Dion O'Neale	Latent space generative model for bipartite networks
238	Jason Bassett, Maksim Kitsak and Igor Linkov	Role Interplay and Information Distortion on Command and Control Structures
240	Flavio Iannelli and Manuel Sebastian Mariani	Ranking nodes at and above criticality
241	Jun Ohnuki and Mitsunori Takano	Allosteric pathway in protein explored by Ising machine
244	Alexander P. Becker and Irena Vodenska	Systemic Risk Underestimation in Reconstructed Networks
251	S J Pevzner and C L Motuzas	The Hidden Network: Radiology in Patient-Physician Interactions
252	Rodrigo Dorantes-Gilardi, Hiram Hernández-Ramos and Jesús Espinal-Enríquez	Eight years of crime evolution in the city of Monterrey under a network approach
255	Byungjoon Min and Claudio Castellano	Searching for an influential spreader in mutually cooperative coinfections
258	Paulo McMiller, Juliana Angeiras Batista da Silva and Ricardo Luiz Longo	Investigation of liquid water behavior with complex networks analysis
260	Yanchen Liu	Pattern emergence in networks via diffusion processes
261	Kishore Vasan, Carl Bergstrom and Jevin West	Should granting agencies actively engage in co-funding?
271	Hartle, Papadopolous and Krioukov	Evolving Hidden-Variable Network Ensembles
273	Lucas Almeida	Spatial Contagion of Mass Shootings in the USA
275	Orr Levy, Yoed Kenett and Shlomo Havlin	Identifying the interactions between phonology and semantics using a multiplex network approach
276	Hiroataka Fukushima and Tomomi Kito	Road-Railway Detour Index for multimodal transportation networks
277	Malayaja Chutani and Neelima Gupte	Study of overlaps in scientific collaboration networks
278	Emily Harvey and Dion O'Neale	Using network science to quantify economic disruptions in regional input-output networks
279	Yuma Aoki, Jun Kitazono and Masafumi Oizumi	Bi-directionally connected cores of causal networks in the brain



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