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# The 2020 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining

Virtual, 07-10 December 2020

Final Program

ASONAM 2020 and the Co-Located Events

FAB 2020, FOSINT-SI 2020, HIBIBI 2020

To Enter any of the Six Rooms

Refer to the Correspond **ZOOM ID/Passcode** shared with you by email



## Plan for the Presentations/Demos

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**All presentations are intended to be live. We want to avoid recorded presentation. Everyone can connect to ZOOM from anywhere, including home or work, share slides and present, no need to open your camera in case you do not have good internet connection.**

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**Full Paper**      30 Minutes including Q/A period

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**Short Paper**      20 Minutes including Q/A period

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**Demo**              10 Minutes including Q/A period and 10 minutes Demo, each one of the 7 DEMOS may be available in one of the rooms for discussion with interested participants

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**An additional ZOOM account will be made available as a LOUNGE for participants to get together and have private chats and discussions during the breaks and when they are not interested in attending sessions.**

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**The opening ceremony will be on Tuesday 8 December 2020 at 1:30 PM (13:30 GMT)  
All participants are invited and encouraged to attend**

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**Program of  
ASONAM 2020 - FAB 2020 - FOSINT-SI 2020, HI-BI-BI 2020**

**December 7<sup>th</sup> (Tutorials)**

**Time is specified in GMT**

Time Slot Type	Hour (GMT time)	Parallel I: <b>Jerusalem</b>	Parallel II: <b>Istanbul</b>	Parallel III: <b>Shanghai</b>
East	13:30-15:00	Tutorial III: Network-Oriented Modeling and Analysis for Adaptive Networks <b>(13:30-15:30 &amp; 16:00-18:00)</b>	Tutorial I: Perils and Promises of Automated Hate Speech Detection <b>(13:30-15:30)</b>	Tutorial II: Knowledge Graphs - A Practical introduction across Disciplines <b>(16:00-18:00)</b>
Hybrid	15:15-16:45			
Americas	17:00-18:30	<b>Use Prof. Jan Treur's zoom information as shared by email.</b>	Tutorial IV: Accelerated Large Scale Network Analysis using RAPIDS <b>(18:30-20:30)</b>	
	19:00-20:30			

**December 8<sup>th</sup> (Research Track)**

Time Slot Type	Hour (GMT time)	Parallel I: <b>Jerusalem</b>	Parallel II: <b>Istanbul</b>	Parallel III: <b>Shanghai</b>
East	13:30-14:00	<b>Opening Ceremony Jerusalem</b>		
Asia/Oceania	14:00-15:30		Applications I	Recommender Systems I
Hybrid	16:00-17:30	Deep Learning on Graphs I	Applications II	Complex Networks I
Americas	18:00-19:30	Community Detection I	Social Media I	Diffusion I
	19:50-20:50	<b>Keynote I (Marta Sales-Pardo) Jerusalem</b>		

**December 9<sup>th</sup> (Research Track)**

Time Slot Type	Hour (GMT time)	Parallel I: <b>Jerusalem</b>	Parallel II: <b>Istanbul</b>	Parallel III: <b>Shanghai</b>
Asia/Oceania	13:30-15:00			Diffusion II
Hybrid	15:15-16:45	Community Detection II	Social Media II	Complex Networks II
Americas	17:30-19:00	Deep Learning on Graphs II	Social Networks I	Recommender Systems II
	19:30-20:30	<b>Keynote II (Johan Suykens) Jerusalem</b>		

**December 10<sup>th</sup> (Research Track)**

Time Slot Type	Hour (GMT time)	Parallel I: <b>Jerusalem</b>	Parallel II: <b>Istanbul</b>	Parallel III: <b>Shanghai</b>
Asia/Oceania	13:30-15:00	Deep Learning on Graphs III	Social Networks II	Complex Networks III
Hybrid	15:15-16:45	Epidemics	Applications III	Diffusion III
Americas	17:30-18:30	<b>Keynote III (Daniela Paolotti) Jerusalem</b>		
	18:30-19:00	<b>Closing Session</b>		

**Program of  
ASONAM 2020 - FAB 2020 - FOSINT-SI 2020, HI-BI-BI 2020**

**December 7<sup>th</sup> (Workshops - PhD Track - Demos Track)**

Time Slot Type	Hour (GMT time)	Parallel I: <b>Dhaka</b>	Parallel II: <b>Calgary</b>	Parallel III: <b>Mardin</b>
Asia/Oceania	13:30-15:00		SNAST Workshop I	
Hybrid	15:15-16:45	BISON Workshop	SNAST Workshop II	MSNDS Workshop
Americas	17:00-18:30	PhD- Track	DEMO Session	SNAA & SI Workshops
	19:00-20:30			

**December 8<sup>th</sup> (FAB - FOSINT-SI - HI-BI-BI)**

Time Slot Type	Hour (GMT time)	Parallel I: <b>Dhaka</b>	Parallel II: <b>Calgary</b>	Parallel III: <b>Mardin</b>
Asia/Oceania	14:00-15:30		Industrial I	FOSOINT-SI I
Hybrid	16:00 -17:30	HI-BI-BI -I	Industrial II	FOSOINT-SI II
Americas	18:00-19:30	HI-BI-BI - II	Industrial III	FOSOINT-SI III

**December 9<sup>th</sup> (Industrial Track - Multidisciplinary Track)**

Time Slot Type	Hour (GMT time)	Parallel I: <b>Dhaka</b>	Parallel II: <b>Calgary</b>	Parallel III: <b>Mardin</b>
Asia/Oceania	13:30-15:00	FAB I		multidisciplinary I
Hybrid	15:15-16:45	FAB II	Industrial IV	multidisciplinary II
Americas	17:30-19:00	FAB III		multidisciplinary III

**December 10<sup>th</sup> (Industrial Track - Multidisciplinary Track)**

Time Slot Type	Hour (GMT time)	Parallel I: <b>Dhaka</b>	Parallel II: <b>Calgary</b>	Parallel III: <b>Mardin</b>
Asia/Oceania	13:30-15:00	FAB IV		multidisciplinary IV
Hybrid	15:15-16:45			

Deep Learning on Graphs I	<b>Authors</b>	<b>Title</b>	<b>Jerusalem</b>	<b>Type</b>	<b>Dominant Region</b>
	Fatemeh Salehi Rizi and Michael Granitzer	Multi-task Network Embedding with Adaptive Loss Weighting		Short	Europe
	Styliani Bourli and Evaggelia Pitoura	Bias in Knowledge Graph Embeddings		Short	Europe
	Koosha Zarei, Reza Farahbakhsh, Noel Crespi and Gareth Tyson	Impersonation on Social Media: A Deep Neural Approach to Identify Ingenuine Content		Short	Europe
	Duy Tin Vo and Richard Khoury	Language Identification on Massive Datasets of Short Messages using an Attention Mechanism CNN		Full	Americas
Deep Learning on Graphs II	<b>Authors</b>	<b>Title</b>	<b>Jerusalem</b>	<b>Type</b>	<b>Dominant Region</b>
	Palash Goyal, Sachin Raja, Di Huang, Sujit Rokka Chhetri, Arquimedes Canedo, Ajoy Mondal, Jaya Shree and Cv Jawahar	Graph Representation Ensemble Learning		Full	Americas
	Munira Syed, Daheng Wang, Meng Jiang, Oliver Conway, Vishal Juneja, Sriram Subramanian and Nitesh V. Chawla	Overcoming Data Sparsity in Predicting User Characteristics from Behavior through Graph Embeddings		Short	Americas
	Jiyang Bai, Yuxiang Ren and Jiawei Zhang	DEAM: Adaptive Momentum with Discriminative Weight for Stochastic Optimization		Short	Americas
	<b>Authors</b>	<b>Title</b>	<b>Jerusalem</b>	<b>Type</b>	<b>Dominant Region</b>
Yue Sun, Zhi Yang and Yafei Dai	TrustGCN: Enabling Graph Convolutional Network for Robust Sybil Detection in OSNs		Full	East Asia	
Hao-Shang Ma and Jen-Wei Huang	User Preference Translation Model for Recommendation System with Item Influence Diffusion Embedding		Short	East Asia	
Md. Saqib Hasan, Rukshar Alam and Muhammad Abdullah Adnan	Truth or Lie: Pre-emptive Detection of Fake News in Different Languages Through Entropy-based Active Learning and Multi-model Neural Ensemble		Short	East Asia	
Stefanos Antaris and Dimitrios Rafailidis	Distill2Vec: Dynamic Graph Representation Learning with Knowledge Distillation		Short	Europe	
Community Detection I	<b>Authors</b>	<b>Title</b>	<b>Jerusalem</b>	<b>Type</b>	<b>Dominant Region</b>
	Helen Purchase, Nathan Stirling and Daniel Archambault	Proximity, Communities, and Attributes in Social Network Visualisation		Full	Europe
	Neil Gupta, Joydeep Ghosh, Gunjan Gupta, Sheshank Shankar and Alex Tarasar	Detection and Visualization of Dense Subgroups at Multiple Resolutions in Large Social Networks		Full	Americas
	Chaoqi Yang, Jinyang Li, Ruijie Wang, Shuochao Yao, Huajie Shao, Dongxin Liu, Shengzhong Liu, Tianshi Wang and Tarek Abdelzaher	Hierarchical Overlapping Belief Estimation by Structured Matrix Factorization		Full	Americas

<b>Community Detection II</b>	<b>Authors</b>	<b>Title</b>	<b>Jerusalem</b>	<b>Type</b>	<b>Dominant Region</b>
	Derek Weber and Frank Neumann	Who's in the Gang? Revealing Coordinating Communities in Social Media		Short	<b>Oceania</b>
	Ehsan Ul Haq, Tristan Braud and Pan Hui	Community Matters more than Anonymity: Analysis of User Interactions on the Quora Q&A Platform		Short	<b>East Asia</b>
	Soroosh Shalileh and Boris Mirkin	A Data Recovery Method for Community Detection in Feature-Rich Networks		Full	<b>Europe</b>
	Subhasis Dasgupta and Amamath Gupta	Discovering Interesting Subgraphs in Social Media Networks		Short	<b>Americas</b>
<b>Epidemics</b>	<b>Authors</b>	<b>Title</b>	<b>Jerusalem</b>	<b>Type</b>	<b>Dominant Region</b>
	Rahul Goel and Rajesh Sharma	Mobility Based SIR Model For Pandemics – With Case Study Of COVID-19		Full	<b>Europe</b>
	Rana Tallal Javed, Mirza Elaaf Shuja, Muhammad Usama, Junaid Qadir, Waleed Iqbal, Gareth	A First Look at COVID-19 Messages on WhatsApp in Pakistan		Full	<b>Europe</b>
	Viet Duong, Phu Pham, Tongyu Yang, Yu Wang and Jiebo Luo	The Ivory Tower Lost: How College Students Respond Differently than the General Public to the COVID-19 Pandemic		Short	<b>Americas</b>
<b>Social Media I</b>	<b>Authors</b>	<b>Title</b>	<b>Istanbul</b>	<b>Type</b>	<b>Dominant Region</b>
	Yang Zhang, Ruohan Zong and Dong Wang	A Hybrid Transfer Learning Approach to Migratable Disaster Assessment in Social Media Sensing		Full	<b>Americas</b>
	Shuaidong Pan, Faner Lin and Jiebo Luo	Do Sports and Politics Mix? Cross-Analysis of Fan Bases of Major League Sports and Presidential Candidates		Full	<b>Americas</b>
	Fan Yang, Eduard Dragut and Arjun Mukherjee	Claim Verification under Positive Unlabeled Learning		Full	<b>Americas</b>
<b>Social Media II</b>	<b>Authors</b>	<b>Title</b>	<b>Istanbul</b>	<b>Type</b>	<b>Dominant Region</b>
	Firoj Alam, Ferda Ofli, Muhammad Imran, Tanvirul A	Social Media Image Classification Benchmarks for Various Disaster Response Tasks		Full	<b>Middle East</b>
	Matteo Cardaioli, Pallavi Kaliyar, Pasquale Capuozz	Predicting Twitter Users' Political Orientation: An Application to the Italian Political Scenario		Full	<b>Europe</b>
	Maram Kudi, Nuha Albadi and Shivakant Mishra	"Video Unavailable": Analysis and Prediction of Deleted and Moderated YouTube Videos		Full	<b>Americas</b>

<b>Information &amp; Influence diffusion I</b>	<b>Authors</b>	<b>Title</b>	<b>Shanghai</b>	<b>Type</b>	<b>Dominant Region</b>
	Abiola Osho, Caden Waters and George Amariuca	An Implicit Crowdsourcing Approach to Rumor Identification in Online Social Networks		Full	<b>Americas</b>
	Bhavtosh Rath, Aadesh Salecha and Jaideep Srivastava	Early Detection of Fake News Spreaders in Social Networks using Inductive Representation Learning		Full	<b>Americas</b>
	Jean Marie Tshimula, Belkacem Chikhaoui and Shengrui Wang	On Predicting Behavioral Deterioration in Online Discussion Forums		Full	<b>Americas</b>
<b>Information &amp; Influence diffusion II</b>	<b>Authors</b>	<b>Title</b>	<b>Shanghai</b>	<b>Type</b>	<b>Dominant Region</b>
	Khurshed Ali, Chih-Yu Wang, Mi-Yen Yeh and Yi-Shin Chen	Addressing Competitive Influence Maximization on Unknown Social Network with Deep Reinforcement Learning		Full	<b>East Asia</b>
	Jihoon Ko, Kyuhan Lee, Kijung Shin and Noseong Park	MONSTOR: An Inductive Approach for Estimating and Maximizing Influence over Unseen Networks		Full	<b>East Asia</b>
	Ehsan Ul Haq, Tristan Braud, Young D. Kwon and Pan Hui	Enemy at the Gate: Evolution of Twitter User's Polarization During National Crisis		Short	<b>East Asia</b>
<b>Information &amp; Influence diffusion III</b>	<b>Authors</b>	<b>Title</b>	<b>Shanghai</b>	<b>Type</b>	<b>Dominant Region</b>
	Pedro Ramaciotti Morales, Jean Philippe Cointet and Julio Laborde	Your most telling friends: Propagating latent ideological features on Twitter using neighborhood coherence		Short	<b>Europe</b>
	Ece Mutlu, Toktam Oghaz, Ege Tutunculer and Ivan Garibay	Do Bots Have Moral Judgements? The Difference Between Bots and Humans in Moral Rhetoric		Short	<b>Americas</b>
	Xiaoyun Fu, Madhavan Rajagopal Padmanabhan, Raj Gaurav Kumar, Samik Basu, Shawn Dorius and A Pavan	Measuring the Impact of Influence on Individuals: Roadmap to Quantifying Attitude		Short	<b>Americas</b>
	Fernando C. Erd, André L. Vignatti and Murilo da Silva	Blocking the Spread of Misinformation in a Network under Distinct Cost Models		Short	<b>Americas</b>
	Jaqueline Oliveira, Humberto T. Marques-Neto and Márton Karsai	Information Adoption via Repeated or Diversified Social Influence on Twitter		Short	<b>Americas</b>
<b>Recommender Systems I</b>	<b>Authors</b>	<b>Title</b>	<b>Shanghai</b>	<b>Type</b>	<b>Dominant Region</b>
	Emmanouil Krasanakis, Symeon Papadopoulos and Ioannis Kompatsiaris	Stopping Personalized PageRank without an Error Tolerance Parameter		Full	<b>Europe</b>
	Pedro Ramaciotti Morales, Lionel Tabourier and Raphael Fournier	Testing the Impact of Semantics and Structure on Recommendation Accuracy and Diversity		Full	<b>Europe</b>
	Spiros Apostolou, Panayiotis Tsaparas and Evimaria Terzi	Template-Driven Team Formation		Full	<b>Europe</b>

<b>Recommender Systems II</b>	<b>Authors</b>	<b>Title</b>	<b>Shanghai</b>	<b>Type</b>	<b>Dominant Region</b>
	Aparup Khatua and Wolfgang Nejdl	Matching Recruiters and Jobseekers on Twitter		Short	<b>Europe</b>
	Mahreen Nasir and Christie Ezeife	Semantics Embedded Sequential Recommendation for E-Commerce Products (SEMSRec)		Short	<b>Americas</b>
	Debashish Roy and Chen Ding	Movie Recommendation using YouTube Movie Trailer Data as the Side Information		Short	<b>Americas</b>
	Jean Marie Tshimula, Belkacem Chikhaoui and Shengrui Wang	A Pre-training Approach for Stance Classification in Online Forums		Short	<b>Americas</b>
<b>Social Networks I</b>	<b>Authors</b>	<b>Title</b>	<b>Istanbul</b>	<b>Type</b>	<b>Dominant Region</b>
	Yan Zhong, Xiao Huang, Jundong Li and Xia Hu	Scalable Social Tie Strength Measuring		Full	<b>Americas</b>
	Marc-André Larochelle and Richard Khoury	Generalisation of Cyberbullying Detection		Short	<b>Americas</b>
	Oyesh Singh, Sandesh Timilsina, Bal Krishna Bal and Anupam Joshi	Aspect Based Abusive Sentiment Detection in Nepali Social Media Texts		Short	<b>Americas</b>
<b>Social Networks II</b>	<b>Authors</b>	<b>Title</b>	<b>Istanbul</b>	<b>Type</b>	<b>Dominant Region</b>
	Yang Chen and Jiamou Liu	Social Capital Game: Social Structure Emergence Through Multi-agent Reinforcement Learning		Full	<b>Oceania</b>
	Derek Weber, Mehwish Nasim, Lewis Mitchell and Lucia Falzon	A method to evaluate the reliability of social media data for social network analysis		Short	<b>Oceania</b>
	Wienke Strathern, Mirco Schönfeld, Raji Ghawi and Jürgen Pfeffer	Against the Others! Detecting Moral Outrage in Social Media Networks		Short	<b>Europe</b>
	Koosha Zarei, Damilola Ibojiola, Reza Farahbakhsh, Zafar Gilani, Kiran Garimella, Noel Crespi and Gareth Tyson	Characterising and Detecting Sponsored Influencer Posts on Instagram		Short	<b>Europe</b>
<b>Complex Networks I</b>	<b>Authors</b>	<b>Title</b>	<b>Shanghai</b>	<b>Type</b>	<b>Dominant Region</b>
	Rouzbeh Hasheminezhad, Moses Boudourides and Ulrik Brandes	Scale-free networks need not be fragile		Full	<b>Europe</b>
	Cindarella Petz, Raji Ghawi and Jürgen Pfeffer	A Longitudinal Analysis of a Social Network of Intellectual History		Full	<b>Europe</b>
	Shima Moghtasedi, Cristina Ioana Muntean, Franco Maria Nardini, Roberto Grossi and Andrea Marino	High-Quality Prediction of Tourist Movements using Temporal Trajectories in Graphs		Short	<b>Europe</b>



Complex Networks II	<b>Authors</b>	<b>Title</b>	<b>Shanghai</b>	<b>Type</b>	<b>Dominant Region</b>
	Siegfried Müller, Raji Ghawi and Jürgen Pfeffer	Using Communication Networks to Predict Team Performance in Massively Multiplayer Online Games		Full	Europe
	Risul Islam, Md. Omar Faruk Rokon, Ahmad Darki and Michalis Faloutsos	HackerScope: The Dynamics of a Massive Hacker Online Ecosystem		Full	Americas
	Karen Amos, Chris Kuhlman and S. S. Ravi	Despotic Regimes Instilling Fear in Citizens to Suppress Protests		Short	Americas
Complex Networks III	<b>Authors</b>	<b>Title</b>	<b>Shanghai</b>	<b>Type</b>	<b>Dominant Region</b>
	Sergey Shvydun	Dynamic Analysis of the Global Financial Network		Short	Europe
	Natalia Meshcheryakova	Network Analysis of Bilateral Trade Data Under Asymmetry		Short	Europe
	Konstantinos Semertzidis and Evaggelia Pitoura	A Hybrid Approach to Temporal Pattern Matching		Short	Europe
Applications I	<b>Authors</b>	<b>Title</b>	<b>Istanbul</b>	<b>Type</b>	<b>Dominant Region</b>
	Ai-Ni Lee, Kuan-Ying Chen and Cheng-Te Li	ActRec: A Word Embedding-based Approach to Recommend Movie Actors to Match Role Descriptions		Full	East Asia
	Takayasu Fushimi, Kazumi Saito, Kouzou Ohara, Masahiro Kimura and Hiroshi Motoda	Opening and Closing Dynamics of Competing Shop Groups over Spatial Networks		Full	East Asia
	Ekta Gujral, Georgios Theocharous and Evangelos Papalexakis	C <sup>3</sup> APTION: Constraint Coupled CP And PARAFAC2 Tensor Decomposition		Full	Americas
Applications II	<b>Authors</b>	<b>Title</b>	<b>Istanbul</b>	<b>Type</b>	<b>Dominant Region</b>
	Jitin Krishnan, Hemant Purohit and Huzefa Rangwala	Unsupervised and Interpretable Domain Adaptation to Rapidly Filter Tweets for Emergency Services		Full	Americas
	Dominic Seyler, Lunan Li and Chengxiang Zhai	Semantic Text Analysis for Detection of Compromised Accounts on Social Networks		Short	Americas
	Lanyu Shang, Daniel Zhang, Siamul Karim Khan, Jialie Shen and Dong Wang	CaMR: Towards Connotation-aware Music Retrieval on Social Media with Visual Inputs		Short	Americas
	Lucas Henrique Costa de Lima, Julio Reis, Philippe Melo, Fabricio Murai and Fabricio Benevenuto	Characterizing (Un)moderated Textual Data in Social Systems		Short	Americas

<b>Applications III</b>	<b>Authors</b>	<b>Title</b>	<b>Istanbul</b>	<b>Type</b>	<b>Dominant Region</b>
	John Palowitch and Bryan Perozzi	Debiasing Graph Representations via Metadata-Orthogonal Training		Full	<b>Americas</b>
	Aman Tyagi, Joshua Uyheng and Kathleen Carley	Affective Polarization in Online Climate Change Discourse on Twitter		Short	<b>Americas</b>
	Samuel Guimarães, Julio Reis, Lucas Henrique C. Lima, Filipe Ribeiro, Marisa Vasconcelos, Jisun An, Haewoon Kwak and Fabricio Benevenuto	Identifying and Characterizing Alternative News Media on Facebook		Short	<b>Americas</b>
<b>PhD Track</b>	<b>Authors</b>	<b>Title</b>	<b>Dhaka</b>	<b>Type</b>	<b>Dominant Region</b>
	Francesco Scotti, Davide Magnanimi, Valeria Maria Urbano and Francesco Pierri	Online feelings and sentiments across Italy during pandemic: investigating the influence of socio-economic and epidemiological variables		Full	
	Aleksey Panasyuk, Kishan Mehrotra and Edmund Yu	Improving Geocoding of a Twitter User Group using their Account Creation Times and Languages		Full	
	Youcef Benkhedda, Faical Azouaou and Sofiane Abbar	Identity linkage across diverse social networks		Short	
	Jakapun Tachaiya, Joobin Gharibshah, Evangelos Papalexakis and Michalis Faloutsos	RThread: A thread-centric analysis of security forums.		Short	
<b>Industrial Session I</b>	<b>Authors</b>	<b>Title</b>	<b>Calgary</b>	<b>Type</b>	<b>Dominant Region</b>
	Shakshi Sharma and Rajesh Sharma	Forecasting Transactional Amount in Bitcoin Network Using Temporal GNN Approach		Full	<b>Europe/China</b>
	Stefanos Antaris and Dimitrios Rafailidis	VStreamDRLS: Dynamic Graph Representation Learning with Self-Attention for Enterprise Distributed Video Streaming Solutions		Full	
	Zikai Guo, Deqing Yang, Liu Baichuan, Lyuxin Xue and Yanghua Xiao	Co-refining User and Item Representations with Feature-level Self-attention for Enhanced Recommendation		Full	
<b>Industrial Session II</b>	<b>Authors</b>	<b>Title</b>	<b>Calgary</b>	<b>Type</b>	<b>Dominant Region</b>
	Matthew Beatty	Graph-Based Methods to Detect Hate Speech Diffusion on Twitter		Short	<b>Americas</b>
	Mayank Kejriwal, Ravi Kiran Selvam, Chien-Chun Ni and Nicolas Torzec	Locally Constructing Product Taxonomies from Scratch Using Representation Learning		Full	
	Risul Islam, Md. Omar Faruk Rokon, Evangelos E. Papalexakis and Michalis Faloutsos	TenFor: A Tensor-Based Tool to Extract Interesting Events from Security Forums		Full	

<b>Industrial Session III</b>	<b>Authors</b>	<b>Title</b>	<b>Calgary</b>	<b>Type</b>	<b>Dominant Region</b>
	Vladimir Barash, Clay Fink, Christopher Cameron, Aurora Schmidt, Wei Dong, Michael Macy, John Kelly and Amruta Deshpande	A Twitter Social Contagion Monitor		Full	<b>Americas</b>
	Omer Zulfiqar, Yi-Chun Chang, Po-Han Chen, Chang-Tien Lu, David Solnick and Yanlin Li	RISECURE: Metro Incidents And Threat Detection Using Social Media		Short	
	Shishir Kulkarni, Jay Ketan Katariya and Katerina Potika	GloVeNoR: GloVe for Node Representations with Second Order Random Walks		Full	
Lucas L. Rolim, Jefferson E. Simões and Daniel R. Figueiredo	Network and Revenue of the Clube Hurb Affiliate Marketing Program: A Story of Two Tales		Short		
<b>Industrial Session IV</b>	<b>Authors</b>	<b>Title</b>	<b>Calgary</b>	<b>Type</b>	<b>Dominant Region</b>
	Andreea Nita and Laurentiu Rozylowicz	Dynamics of the international environmental treaties – perspectives for future cooperation		Full	
	Sumin Han, Dasom Hong and Dongman Lee	Exploring Commercial Gentrification using Instagram Data		Full	
	Zhou Yang, Long Nguyen, Jiazhen Zhu, Zhenhe Pan, Jia Li and Fang Jin	Coordinating Disaster Emergency Response with Heuristic Reinforcement Learning		Full	
<b>multidisciplinary I</b>	<b>Authors</b>	<b>Title</b>	<b>Mardin</b>	<b>Type</b>	<b>Dominant Region</b>
	Md Shoaib Ahmed, Tanjim Taharat Aurpa and Md Musfique Anwar	Online Topical Clusters Detection for Top-k Trending Topics in Twitter		Full	
	Aditya Tyagi, Diego Gomez-Zara and Noshir Contractor	Friendship, Advice, and Teams in Graduate Student Social Networks		Full	
	Saud Alashri and Turki Alalola	Discourse Analysis of US Elections on Twitter and Facebook using Machine Learning		Full	
<b>multidisciplinary II</b>	<b>Authors</b>	<b>Title</b>	<b>Mardin</b>	<b>Type</b>	<b>Dominant Region</b>
	Ian Mcculloh and Onur Savas	k-Truss Network Community Detection		Full	
	Victor Stroele, Tales Lopes, Victor Ströele, Regina Braga and Michael Bauer	Unraveling the Semantic Evolution of Core Nodes in a Global Contribution Network		Full	
	Francesca Spezzano and Don Winiiecki	How Do People Decide Political News Credibility?		Full	

		<b>Authors</b>	<b>Title</b>	<b>Mardin</b>	<b>Type</b>	<b>Dominant Region</b>
<b>multidisciplinary</b> <b>III</b>		Christian Luhmann and Brian Yang	Mechanisms of Behavioral Contagion: An Approximate Bayesian Approach		Full	
		John Pfaltz	The Interior of a Network		Full	
		Eduardo Hargreaves, Eduardo Freire Mangabeira, Jonice Oliveira, Tiago Cruz França and Daniel Sadoc Menasché	Facebook News Feed personalization filter: a case study during the Brazilian elections		Full	
		<b>Authors</b>	<b>Title</b>	<b>Mardin</b>	<b>Type</b>	<b>Dominant Region</b>
<b>multidisciplinary</b> <b>IV</b>		Badhan Chandra Das, Md Musfique Anwar and Md. Al-Amin Bhuiyan	Attribute Driven Temporal Local Active Online Community Detection		Full	
		Jolin Kwan and Kwan Hui Lim	Understanding Public Sentiments, Opinions and Topics about COVID-19 using Twitter		Full	
		Ankur Sharma, Navreet Kaur, Anirban Sen, Aaditeshwar Seth	Ideology Detection in the Indian Mass Media		Full	
		<b>Authors</b>	<b>Title</b>	<b>Dhaka</b>	<b>Type</b>	<b>Dominant Region</b>
<b>FAB Session I</b>		Luce le Gorrec and Philip Knight	A Simple Embedding for Classifying Networks with a few Graphlets		Full	
		Konstantinos Xylogiannopoulos and Panagiotis Karampelas	Identifying Social Networks of Programmers using Text Mining for Code Similarity Detection		Full	
		Sebastião Pais, Irfan Tanoli, Miguel Albardeiro and João Cordeiro	Unsupervised Approach to Detect Extreme Sentiments on Social Networks		Full	
		<b>Authors</b>	<b>Title</b>	<b>Dhaka</b>	<b>Type</b>	<b>Dominant Region</b>
<b>FAB Session II</b>		Carson Leung, Yibin Zhang and Fan Jiang	Compression for very sparse big social data		Full	
		Jorge Victorino, Jorge Rudas, Ana Reyes, Cristian Pulido, Luisa Fernanda Chaparro, Darwin Eduardo Martínez Riaño, Luz Narvaez and Francisco Gómez	Spatial-temporal patterns of aggressive behaviors. A case study Bogota, Colombia		Full	
		Patrick Shepherd, Mia Weaver and Judy Goldsmith	An Investigation into the Sensitivity of Social Opinion Networks to Heterogeneous Goals and Preferences		short	

<b>FAB Session III</b>	<b>Authors</b>	<b>Title</b>	<b>Dhaka</b>	<b>Type</b>	<b>Dominant Region</b>
	Ying Zhao and Gabe Mata	Leverage Artificial Intelligence to Learn, Optimize, and Win (LAILOW) for the Marine Maintenance and Supply Complex System		Full	
	Luisa Fernanda Chaparro, Cristian Pulido, Jorge Rudas, Ana Reyes, Jorge Victorino, Darwin Eduardo Martínez Riaño, Luz Narvaez and Francisco Gómez	Sentiment Analysis of Social Network Content to Characterize the Perception of Security		Full	
	Evan Williams, David Levin and Ian McCulloh	Improving LDA Topic Modeling with Gamma and Simmelian Filtration		short	
	Sehaj P. Singh and Carson Leung	A theoretical approach for discovery of friends from directed social graphs		short	
<b>FAB Session IV</b>	<b>Authors</b>	<b>Title</b>	<b>Dhaka</b>	<b>Type</b>	<b>Dominant Region</b>
	Carmela Comito	Learning Sequential Mobility and User Preference for new Location Recommendation in Online Social Networks		Full	
	Duygu Selin Ak, Tansel Özyer and Reda Alhajj	Recent Trends in Emotion Analysis: A Big Data Analysis Perspective		short	
	Jorge Rudas Castaño, Ana Reyes, Cristian Pulido, Luisa Fernanda Chaparro, Jorge Victorino, Darwin Eduardo Martínez Riaño, Luz Narvaez and Francisco Gómez	Consistent spatial decomposition of temporal occurrence of aggressive behaviors: A case study in Bogota, Colombia		short	
<b>FOSINT-SI I</b>	<b>Authors</b>	<b>Title</b>	<b>Mardin</b>	<b>Type</b>	<b>Dominant Region</b>
	Amendra Shrestha, Nazar Akrami and Lisa Kaati	Introducing Digital-7: Threat Assessment of Individuals in Digital Environments		Full	Europe
	Annika Andreasson, Henrik Artman, Joel Brynielsson and Ulrik Franke	Employee Communications on Cybersecurity during the COVID-19 Pandemic		Full	Europe
	Naimisha Kolli and N Balakrishnan	Hybrid Features for Churn Prediction in Mobile Telecom Networks with Data Constraints		Full	India

<b>FOSINT-SI II</b>	<b>Authors</b>	<b>Title</b>	<b>Mardin</b>	<b>Type</b>	<b>Dominant Region</b>
	Ian McCulloh, Nathan Ellis, Onur Savas and Paul Rodrigues	Assessing e-Recruiting on Social Media: FBI Case Study		Short	Americas
	Timothy Wright, Shaun Whitfield, Sean Cahill and John Duffy	Project Umbra		Short	Americas
	Donald Winiiecki, Katherine Kappelman, Bryant Hay, Mikel Joaristi, Edoardo Serra and Francesca Spezzano	Validating Bad Entity Ranking in the Panama Papers via Open-source Intelligence		Full	Americas
<b>FOSINT-SI III</b>	<b>Authors</b>	<b>Title</b>	<b>Mardin</b>	<b>Type</b>	<b>Dominant Region</b>
	Razieh Nokhbeh Zaeem, Chengjing Li and K. Suzanne Barber	On Sentiment of Online Fake News		Full	Americas
	Srihaasa Pidikiti, Jason Shuo Zhang, Richard Han, Tamara Lehman, Qin Lv and Shivakant Mishra	Understanding How Readers Determine the Legitimacy of Online News Articles in the Era of Fake News		Full	Americas
	Andrew Park and Stefano Stamato	Social Network Analysis of Global Transshipment: A Framework for Discovering Illegal Fishing Networks		Full	Americas
<b>HIBIB Session I</b>	<b>Authors</b>	<b>Title</b>	<b>Dhaka</b>	<b>Type</b>	<b>Dominant Region</b>
	Robin Givens	Analysis of COVID-19 Mitigation Measures on a Small Liberal Arts College Network		Full	
	Hisham Al-Mubaid and Izzat Alsmadi	Analysis and Prediction of COVID-19 Timeline and Infection Rates		Full	
	Swapna Gokhale	Comparing the Impact of Unhealthy Behaviors and Preventive Services on Chronic Health Outcomes		Short	
<b>HIBIB Session II</b>	<b>Authors</b>	<b>Title</b>	<b>Dhaka</b>	<b>Type</b>	<b>Dominant Region</b>
	Sleiman Alhaji, Salih Gencer	Investigating Side Effects of Existing Drugs Used in Covid-19 Treatment		Full	
	Jennifer Jin, Sophia Lam, Onur Savas and Ian McCulloh	Approaches for Quantifying Video Prominence, Narratives, & Discussion: Engagement on COVID-19 Related YouTube Videos		Full	
	Adway S. Wadekar	A Psychosocial Approach to Predicting Substance Use Disorder (SUD) Among Adolescents		Full	

SNAST Workshop I	<b>Authors</b>	<b>Title</b>	<b>Type</b>	<b>Dominant Region</b>
	Ananya Zabin and Thirimachos Bourlai	A Deep Learning Based Approach to Iris Sensor Identification	Full	
	Panos Kostakos	Strings and Things: A Semantic Search Engine for news quotes using Named Entity Recognition	Short	
	Victoria Sophie Hazebrouck	See it. Say it. Sorted. An empirical analysis of the influence of the British Vigilance Campaign.	Short	
SNAST Workshop II	<b>Authors</b>	<b>Title</b>	<b>Type</b>	<b>Dominant Region</b>
	Panagiotis Aposporis	Object Detection Methods for Improving UAV Autonomy and Remote Sensing Applications	Full	
	Dimitris Spiliotopoulos, Costas Vassilakis and Dionisis Margaritis	On Recommending Safe Travel Periods to High Attack Risk Destinations	Full	
BISON Workshop	<b>Authors</b>	<b>Title</b>	<b>Type</b>	<b>Dominant Region</b>
	Konstantinos Xylogiannopoulos and Panagiotis Karampelas	Visualization of Repeated Patterns in Multivariate Discrete Sequences	Full	
	Costas Vassilakis, Dimitra Maniataki, George Lepouras, Angeliki Antoniou, Dimitris Spiliotopoulos, Vassilis Pouloupoulos, Manolis Wallace and Dionisis Margaritis	Database Knowledge Enrichment Utilizing Trending Topics from Twitter	Full	
	Dionisis Margaritis, Dimitris Spiliotopoulos and Costas Vassilakis	Neighbourhood Aging Factors for Limited Information Social Network Collaborative Filtering	Full	
SI & SNAA Workshops	<b>Authors</b>	<b>Title</b>	<b>Type</b>	<b>Dominant Region</b>
	Hassan Abedi Firouzjaei, Sina Furkan Özdemir	Effect of readability of political tweets on positive user engagement	Full	
	James Ashford, Liam Turner, Roger Whitaker, Alun Preece and Diane Felmlee	Assessing temporal and spatial features in detecting disruptive users on Reddit	Full	
	Francis Spiegel Rubin, Adriana Cesário De Faria Alvim, Rodrigo Pereira dos Santos and Carlos Eduardo Ribeiro de Mello.	Detecting Influential Communities in Twitter during Brazil Oil Field Auction in 2019	Full	
	Michelle Edwards, Jonathan Tuke, Matthew Roughan and Lewis Mitchell	The one comparing narrative social network extraction techniques	Full	

## MSNDS Workshop

<b>Authors</b>	<b>Title</b>	<b>Type</b>	<b>Dominant Region</b>
Li chen Cheng, Legaspi Rhea Sharmayne, Choi Sonyeon	Analyzing Digital banking Reviews Using Text Mining	Full	
Mike Tian-Jian Jiang, Shih-Hung Wu, Yi-Kun Chen, Zhao-Xian Gu, Cheng-Jhe Chiang, Yueh-Chia Wu, Yu-Chen Huang, Cheng-Han Chiu, Sheng-Ru Shaw, and Min-Yuh Day	Fine-tuning technique and data augmentation on transformer-based models for conversational texts and noisy user-generational content	Full	
I-Hsien Ting, Su-Chen Yang, Chia-Sung Yen, Tsung Hsing Tsai	Hot Topics Detection by Using 2-Layers Keywords Extraction	Full	

## DEMO Session

<b>Authors</b>	<b>Title</b>	<b>Calgary</b>	<b>Type</b>	<b>Dominant Region</b>
Radosław Michalski and Marcin Pieczka	Dru: Studying Blockchain as a Complex Network			
Claudio Linhares, Jean Ponciano, José Gustavo Paiva, Luis Rocha and Bruno Travençolo	DyNetVis - An interactive software to visualize structure and epidemics on temporal networks			
Hiroto Yamaguchi, Yuya Ogawa, Seiji Maekawa, Yuya Sasaki and Makoto Onizuka	Controlling Internal Structure of Communities on Graph Generator			
Zhou Yang, Jiwei Xu, Zhenhe Pan and Fang Jin	COVID19 Tracking: An Interactive Tracking, Visualizing and Analyzing Platform			
Vinay Jayachandra, Rashmi Kesidi, Zhou Yang, Chen Zhang, Zhenhe Pan, Victor Sheng and Fang Jin	BeSober: Assisting relapse prevention in Alcohol Addiction using a novel mobile app-based intervention			
Zhenhe Pan, Dhruv Mehta, Anubhav Tiwari, Siddhartha Ireddy, Zhou Yang and Fang Jin	An Interactive Platform to Track Global COVID-19 Epidemic			
Noora Aroken, Maryam Alabdooli, Sumaya Khoory and Hakim Hacid	SpeculoLab: A Protocol and a Tool for Identity Deception Experimentation in Social Networks			



## Tutorial I: Roy Ka-Wei Lee and Bio - Rui Cao (13:30-15:30) Singapore Management University

**Title:** Perils and Promises of Automated Hate Speech Detection

**Abstract:** Online hate speech is an important issue that breaks the cohesiveness of online social communities and even raises public safety concerns in our societies. Motivated by this rising issue, researchers have developed many traditional machine learning and deep learning methods to detect hate speech in online social platforms automatically. This tutorial aims to introduce the pressing problem of online hate speeches and demonstrate state-of-the-art hate speech detection methods. The tutorial is meant to be a "start-up" guide for researchers interested in understanding the online hate speech problem and intend to conduct further research into this critical problem. No particular background is expected from the audience.

**Bio - Roy Ka-Wei Lee:** Roy Ka-Wei Lee is an assistant professor in the Design and Artificial Intelligence (DAI) programme and Information Systems Technology and Design (ISTD) pillar. Previously, he was an Assistant Professor of Computer Science at the University of Saskatchewan, Adjunct Faculty at School of Information Systems, Singapore Management University, and Research Scientist at the Living Analytics Research Centre. Roy's research lies at the intersection of data mining, machine learning, and social computing, where he has published several papers in top conferences and journals on these research areas. Currently, Roy is leading the *Social AI Studio*, which aims to understand user behaviours and design the data-driven systems and algorithms for improving user experiences in online social platforms.

**Bio - Rui Cao:** Rui Cao is currently a PhD student at the school of Information System, Singapore Management University. Her research interests are natural language processing, machine learning, and data mining. Specifically, she is interested in multimodal NLP, visual question answering (VQA) and hate speech detection.

## Tutorial II: Mayank Kejriwal (16:00-18:00) University of Southern California

Title: Knowledge Graphs: A Practical Introduction across Disciplines

Abstract: Knowledge Graphs (KGs) like Wikidata, NELL and DBPedia have recently played instrumental roles in several machine learning applications, including search and information retrieval, natural language processing, and data mining. The simplest definition of a KG is as a directed, labeled multi-network. Yet, despite being ubiquitous in the communities mentioned above, KGs have not witnessed much research attention in the network science and social network communities. With the rapid rise in Web data, there are interesting opportunities to construct domain-specific knowledge graphs, including over social media data. We propose a tutorial that will provide a detailed and rigorous introduction to KGs, and a synthesis of KG research and applications in multiple areas of computer science and AI, including e-commerce, social media analytics and biology.

### **Bio:**

This tutorial will be delivered by **Dr. Mayank Kejriwal**, a research assistant professor and research lead at the University of Southern California's Information Sciences Institute (USC/ISI). He is affiliated with the [Center on Knowledge Graphs](#) at USC/ISI. His research focuses on knowledge graphs (KG), an exciting area of AI that has found widespread applications in industry (including Amazon and Google), academia (health informatics and social sciences) and for social causes (fighting human trafficking and crisis response). He has given talks and tutorials in international academic and industrial venues, most recently serving as a roundtable speaker and participant at the [Concordia Summit](#) that was co-held with the UN General Assembly in New York City in September, 2019. He is also the [upcoming author of an MIT Press textbook](#) on knowledge graphs, and he authored the popular Springer Brief '[Domain-specific Knowledge Graph Construction](#)' in 2019.

## Tutorial III: Jan Treur (13:30- 15:30 & 16:00- 18:00) Vrije Universiteit Amsterdam

Title: Network-Oriented Modeling and Analysis for Adaptive Networks

### **Abstract**

This multidisciplinary tutorial addresses the challenging topic of modeling and analysis of adaptive networks with inherently complex behaviour. Networks usually can be modeled using neat, declarative and conceptually transparent structures specifying connectivity, aggregation and timing characteristics that define a network structure, including characteristics for its internal node dynamics. For adaptive networks involving changing network structure, it is different. Traditionally, procedural specifications are added for the adaptation process, leading to a not very transparent, hybrid specification, part of which often is more at an algorithmic or programming level than at a neat declarative modelling level.

This tutorial presents a modeling and analysis approach that makes the design and analysis of adaptive network models easier: also the adaptation process is modeled as a network, by a self-model that is added to the base network. A self-model is a subnetwork that represents (adaptive) network structure characteristics such as connection weights by its (dynamic) nodes. This approach lifts the network adaptation process to the same declarative modeling level as used for the base network, so that it can be understood, designed and analysed without any need of algorithmic or programming skills. Moreover, it also becomes easy to address second- and higher-order adaptive networks by just applying the approach in an iterative manner. A freely downloadable dedicated software environment is available to run these adaptive network models from their high-level specifications (used as input in the form of specific tables), and to support analysis of their adaptive and perhaps complex behaviour (for example, in relation to empirical data).

Various examples of adaptive mental networks and adaptive social networks will be addressed. Among the network adaptation principles covered are bonding by homophily, triadic closure, preferential attachment, and interaction connects (for adaptive connectivity characteristics), and adaptive node excitability and timing (for adaptive aggregation and timing characteristics). In addition, also second-order network adaptation principles such as inhibiting adaptation, adaptive adaptation speed, and adaptive persistence of adaptation will be covered.

Main reference: Treur, J. (2020). Network-Oriented Modeling for Adaptive Networks: Designing Higher-Order Adaptive Biological, Mental and Social Network Models. Springer Nature Publishers.

### **Bio:**

Jan Treur works as a full professor in Artificial Intelligence. He is an internationally well-recognized expert in human-directed AI and cognitive and social modelling. He has been and still is active both by author and PC member roles in practically all relevant conferences and journals in these areas. His research during the past 10 years mostly concerns network-oriented modeling and analysis. This covers methods and techniques

for modelling and analysis in a number of application areas, including biological, (neuro)cognitive, social, and health science areas. Part of his research on network-oriented modeling and analysis is described in two books published in 2016 and 2020, where the last book focusses on adaptive networks in particular. Applications cover (multi-order) adaptive network models for biological, mental and social processes that can be used as a basis for human-aware or socially aware AI systems and virtual agents. More details can be found at URL [https://www.researchgate.net/profile/Jan\\_Treur](https://www.researchgate.net/profile/Jan_Treur).

## Tutorial IV: Brad Rees, Corey Nolet (18:30- 20:30) NVIDIA

**Title:** Accelerated Large Scale Network Analysis using RAPIDS

**Abstract:**

The ability to collect data has exploded, drastically increasing the size (nodes, edges, and attributes) of networks to be analyzed and opening a range of new analytic techniques. Unfortunately, more data equates to more headaches as analysts spend 70-90% of their time cleaning and preparing data, just to leverage tools that do not scale. A review of popular SNA tools shows that many assume that data has been prepared beforehand. A new holistic approach is needed, where ETL, Graph, and ML work together. The RAPIDS open-source GPU software libraries, incubated by NVIDIA, gives analysts the power to execute end-to-end analytic pipelines fully on GPUs. Through the use of a familiar DataFrame API, which integrates machine learning and graph algorithms, RAPIDS enables analysts to interact with their data without losing their train of thought. This tutorial walks through several SNA problems, introducing the various components and features of RAPIDS.

**Bio:**

Brad Rees

Brad Rees is a Sr. Manager in the AI Infrastructure group at NVIDIA and lead of the RAPIDS cuGraph team. Brad has been designing, implementing, and supporting a variety of advanced software and hardware systems for over 30 years, specializes in complex analytic systems, primarily using graph analytic techniques for social and cyber network analysis. His technical interests are in HPC, machine learning, deep learning, and graph. Brad has a Ph.D. in Computer Science from the Florida Institute of Technology.

Corey Nolet

Corey Nolet is a Data Scientist & Senior Engineer on the RAPIDS cuML team at NVIDIA, where he focuses on building and scaling machine learning algorithms to support extreme data processing at light speed. Corey has over a decade experience building massive-scale analytics platforms for HPC environments in the defense industry. Corey holds BS. & MS. degrees in Computer Science and is currently working towards his PhD with a focus on scaling unsupervised machine learning algorithms. Corey has a passion for using data to make better sense of the world.