



The 2021 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining

Virtual, 08-11 November 2021

Final Program

ASONAM 2021 and the Co-Located Events
FAB 2021, FOSINT-SI 2021, HIBIBI 2021

To Enter any of the Six Rooms

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



For all participants:

1. All times are in Europe (Amsterdam time)
2. The room for each session is specified in the main summary of the program
3. Papers with authors for each session are shown in the detailed part of the program
4. The room are specified in the first part (general program overview).
5. The papers are lists in the detailed program given after the general overview.

All times are in Amsterdam (Europe) time

The time conversion is as following for various time zones:

GMT+1 == EST(+6) == PST (+9) == Sydney (-10) == Beijing, China (-7)

For all presenters:

Please show up in the room specified in the program before their session begins and inform the session chair

All times in
Amsterdam time

**Program of ASONAM 2021 (All Tracks and Workshops)
FAB 2021, FOSINT-SI 2021, HI-BI-BI 2021**

November 8th Tutorials Program

13:30 – 16:00	Tutorial I: Network Science Applications to Education in the 21st Century (Room: Calgary)	15:00 – 17:00	Tutorial III – Part 1: Using the net.science Cyberinfrastructure in Research on Social Contact Networks and Discrete Dynamical Systems (Room: Istanbul)
16:00 – 16:30	<i>Coffee Break</i>	17:00 – 17:30	<i>Coffee Break</i>
16:30 – 19:30	Tutorial II: Influence Learning and Maximization (Room: Calgary)	17:30 – 19:30	Tutorial III – Part 2 (Room: Istanbul)

November 8th

14:00 – 15:40	MSNDS 2021 (Room: Tehran)		
15:40 – 16:10	<i>Coffee Break</i>		
16:10 – 17:50	SI2021 (Room: Tehran)		DEMO Session (Room: Mardin)
17:50 – 18:20	<i>Coffee Break</i>		
18:20 – 20:00			PhD Track (Room: Mardin)

November 9th

13:45 – 15:25	FOSINT-SI Session I (Room: Tehran)		HI-BI-BI Session I (Room: Mardin)
15:25 – 16:00	<i>Coffee Break</i>		
16:00 – 17:00		Keynote I – Jiawei Han (Room: Calgary)	
17:00 – 17:30		<i>Coffee Break</i>	
17:30 – 19:40	FOSINT-SI Session II (Room: Tehran)		HI-BI-BI Session II (Room: Mardin)

November 10th

13:45 – 15:25 FOSINT-SI Session III **(Room: Tehran)** Multidisciplinary Track **(Room: Mardin)**

15:25 – 16:00 *Coffee Break*

16:00 – 17:00 *Keynote II – Amit Sheth* **(Room: Calgary)**

17:00 – 17:30 *Coffee Break*

17:30 – 19:40 FAB Session I **(Room: Tehran)** Industrial Session I **(Room: Mardin)**

November 11th

13:30 – 13:45 *Best Paper award session* **(Room: Calgary)**

13:45 – 15:25 FAB Session II **(Room: Tehran)** Industrial Session II **(Room: Mardin)**

15:25 – 16:00 *Coffee Break*

16:00 – 17:00 *Keynote III – Daniel Keim* **(Room: Calgary)**

17:00 – 17:30 *Coffee Break*

17:30 – 19:00 FAB Session III **(Room: Tehran)** Industrial Session III **(Room: Mardin)**

All times in
Amsterdam
time

Program of ASONAM 2021 (All Tracks and Workshops)
FAB 2021, FOSINT-SI 2021, HI-BI-BI 2021

Track A

Track B

November 9th

13:30 – 13:45	Opening Remarks from organizers (Room: Calgary)	
13:45 – 15:25	Session 1a (2R+2S) (Room: Calgary)	Session 1b (2R+2S) (Room: Istanbul)
15:25 – 16:00	<i>Coffee Break</i>	
16:00 – 17:00	Keynote I – Jiawei Han (Room: Calgary)	
17:00 – 17:30	<i>Coffee Break</i>	
17:30 – 19:40	Session 2a (2R+2S) (Room: Calgary)	Session 2b (2R+2S) (Room: Istanbul)

November 10th

13:30 – 13:45	Best Paper award session (Room: Calgary)	
13:45 – 15:25	Session 3a (2R+2S) (Room: Calgary)	Session 3b (2R+2S) (Room: Istanbul)
15:25 – 16:00	<i>Coffee Break</i>	
16:00 – 17:00	Keynote II – Amit Sheth (Room: Calgary)	
17:00 – 17:30	<i>Coffee Break</i>	
17:30 – 19:40	Session 4a (2R+2S) (Room: Calgary)	Session 4b (2R+2S) (Room: Istanbul)

November 11th

13:45 – 15:25	Session 5a (2R+2S) (Room: Calgary)	Session 5b (2R+2S) (Room: Istanbul)
15:25 – 16:00	<i>Coffee Break</i>	
16:00 – 17:00	Keynote III – Daniel Keim (Room: Calgary)	
17:00 – 17:30	<i>Coffee Break</i>	
17:30 – 19:00	Session 6a (1R+3S) (Room: Calgary)	Session 6b (1R+3S) (Room: Istanbul)
19:00 – 19:15	Closing Remarks from organizers (Room: Calgary)	

Detailed Program of ASONAM 2021 (All Tracks and Workshops) FAB 2021, FOSINT-SI 2021, HI-BI-BI 2021

Session	Date	Start Time	End Time	Authors	Title	Type
1a	Nov 9 th	13:45	14:15	Takayasu Fushimi, Kazumi Saito and Hiroshi Motoda	Efficient Analytical Computation of Expected Frequency of Motifs of Small Size by Marginalization in Uncertain Network	Regular
		14:15	14:35	Faisal Ghaffar and Neil Hurley	Modelling Social Capital: The Structural Hole Connections Game	Short
		14:35	14:55	Chung-Chi Chen, Hen-Hsen Huang and Hsin-Hsi Chen	Which Kind of Rumor May Undermine Society: Perspectives from Court Orders	Short
		14:55	15:15	Vaibhav Pulastya, Gaurav Nuti, Yash Kumar Atri and Tanmoy Chakraborty	Assessing the Quality of the Datasets by Identifying Mislabeled Samples	Short
1b	Nov 9 th	13:45	14:15	Liang-Yu Chen, Yutong Chen, Young D. Kwon, Youwen Kang and Pan Hui	IAN: Interpretable Attention Network for Churn Prediction in LBSNs	Regular
		14:15	14:45	Mingxuan Chen, Xinqiao Chu and Koduvayur P. Subbalakshmi	MMCoVaR: Multimodal COVID-19 Vaccine Focused Data Repository for Fake News Detection and a Baseline Architecture for Classification	Regular
		14:45	15:05	Rey C. Rodriguez and Ma Regina Justina E. Estuar	A Spatial Agent-Based Model for Preemptive Evacuation Decisions During Typhoon	Short
		15:05	15:25	Mehak Preet Dhaliwal	Fairness and Diversity in the Recommendation and Ranking of Participatory Media Content	Short

2a	Nov 9 th	17:30	18:00	Athanasia Polychronopoulou, Zoran Obradovic and Jumanah Alshehri	Distinguishability of graphs: a case for quantum-inspired measures	Regular
		18:30	19:00	Athanasia Polychronopoulou, Zoran Obradovic and Fang Zhou	Cosine Similarity for Multiplex Network Summarization	Regular
		19:00	19:20	Josemar Caetano, Jussara Almeida, Marcos Goncalves, Wagner Meira Jr., Humberto T. Marques-Neto and Virgilio Almeida	Analyzing Topic Attention in Online Small Groups	Short
		19:20	19:40	Charalampos Chelmis and Khandker Sadia Rahman	Peeking Through the Homelessness System with a Network Science Lens	Short
2b	Nov 9 th	17:30	18:00	Anisa Halimi and Erman Ayday	Real-Time Privacy Risk Quantification in Online Social Networks	Regular
		18:30	19:00	Hang Cui and Tarek Abdelzaher	The Voice of Silence: Interpreting Silence in Truth Discovery on Social Media	Regular
		19:00	19:20	Bing He, Caleb Ziems, Sandeep Soni, Naren Ramakrishnan, Diyi Yang and Srijan Kumar	A Yearlong Study of COVID-19 Anti-Asian Hate and Counterspeech Tweets	Short
		19:20	19:40	Kin Ng, Sameera Horawalavithana and Adriana Iamnitchi	Social-Media Activity Forecasting with Exogenous Information Signals	Short
3a	Nov 10 th	13:45	14:15	Anish Krishna Vallapuram, Nikhil Nanda, Young Dae Kwon and Pan Hui	Interpretable Business Survival Prediction	Regular
		14:15	14:45	Inzamam Rahaman and Patrick Hosein	A Model for Optimizing Article Recommendation for Reducing Polarization	Regular
		14:45	15:05	Shiori Furukawa and Sho Tsugawa	Limitations of Link Deletion for Suppressing Real Information Diffusion on Social Media	Short
		15:05	15:25	Anjan Chowdhury, Sriram Srinivasan, Sanjukta Bhowmick, Animesh Mukherjee and Kuntal Ghosh	Constant Community Identification in Million Scale Networks Using Image Thresholding Algorithms	Short

3b	Nov 10 th	13:45	14:15	Ahmad El Shoghri, Jessica Liebig, Raja Jurdak and Salil Kanhere	How disease spread dynamics evolve over time	Regular
		14:15	14:45	Luca Vassio, Michele Garetto, Carla Chiasserini and Emilio Leonardi	Temporal Dynamics of Posts and User Engagement of Influencers on Facebook and Instagram	Regular
		14:45	15:05	Fa-Yuan Liu, Shiou-Chi Li and Jen-Wei Huang	Forming a Team of Cost-effective and Well-collaborated Experts in Social Networks Based on Hierarchical Skill Model	Short
		15:05	15:25	Soroosh Shalileh and Boris Mirkin	Community Detection in Feature-Rich Networks to Meet K-means	Short
4a	Nov 10 th	17:30	18:00	Meng-Chieh Lee, Hung T. Nguyen, Dimitris Berberidis, Vincent S. Tseng and Leman Akoglu	GAWD: Graph Anomaly Detection in Weighted Directed Graph Databases	Regular
		18:30	19:00	Yang Zhang, Ruohan Zong, Lanyu Shang, Ziyi Kou and Dong Wang	A Deep Contrastive Learning Approach to Extremely-Sparse Disaster Damage Assessment in Social Sensing	Regular
		19:00	19:20	Huixin Zhan, Kun Zhang, Chenyi Hu and Victor Sheng	HGATs: Hierarchical Graph Attention Networks for Multiple Comments Integration	Short
		19:20	19:40	Yin Zhang, Yun He and James Caverlee	Vibe Check: Social Resonance Learning for Enhanced Recommendation	Short
4b	Nov 10 th	17:30	18:00	Padmaksha Roy, Shailik Sarkar, Subhodip Biswas, Fanglan Chen, Zhiqian Chen, Naren Ramakrishnan and Chang-Tien Lu	Incorporating network-level mobility information for deep diffusion-based forecasting of COVID-19	Regular
		18:30	19:00	Matt Reville, Carlotta Domeniconi and Ben Gelman	Group-Node Attention for Community Evolution Prediction	Regular
		19:00	19:20	Abishai Joy, Anu Shrestha and Francesca Spezzano	Are You Influenced? Diffusion of Fake and Real News in Social Media	Short
		19:20	19:40	Rohit Mujumdar and Srijan Kumar	HawkEye: A Robust Reputation System for Community-based Misinformation Detection	Short

5a	Nov 11 th	13:45	14:15	Asmit Kumar Singh, Chirag Jain, Jivitesh Jain, Rishi Raj Jain, Shradha Sehgal, Tanisha Pandey and Ponnurangam Kumaraguru	What's Kooking? Characterizing India's Emerging Social Network, Koo	Regular
		14:15	14:45	Mounir Haddad, Cecile Bothorel, Philippe Lenca and Dominique Bedart	Temporalizing Static Graph Autoencoders to Handle Temporal Networks	Regular
		14:45	15:05	Shiyuan Zheng, Hong Xie and John C.S. Lui	Pricing Social Visibility Service in Online Social Networks: Modeling and Algorithms	Short
		15:05	15:25	Alexandru Topirceanu and Mihai Udrescu	Fast colonization algorithm for seed selection in complex networks based on community detection	Short
5b	Nov 11 th	13:45	14:15	Manisha Dubey, P.K. Srijith and Maunendra Sankar Desarkar	Multi-view Hypergraph Convolution Network for Semantic Annotation in LBSNs	Regular
		14:15	14:45	Joseph Kwarteng, Serena Coppolino Perfumi, Tracie Farrell and Miriam Fernandez	Misogynoir: Public Online Response Towards Self-Reported Misogynoir	Regular
		14:45	15:05	Shangbin Feng, Herun Wan, Ningnan Wang and Minnan Luo	BotRGCN: Twitter Bot Detection with Relational Graph Convolutional Networks	Short
		15:05	15:25	Jules Azad Emery and Matthieu Latapy	Full Bitcoin Blockchain Data Made Easy	Short
6a	Nov 11 th	17:30	18:00	Behnaz Moradijamei, Brandon L. Kramer, J. Bayoan Santiago Calderon and Gizem Korkmaz	Community Formation and Detection on GitHub Collaboration Networks	Regular
		18:00	18:20	Giuseppe Pirrò	Edge-Centric Network Analysis	Short
		18:20	18:40	Stephany Rajeh, Marinette Savonnet, Eric Leclercq and Hocine Cherifi	Identifying Influential Nodes Using Overlapping Modularity Vitality	Short
		18:40	19:00	Maria J. Blesa, Pau García-Rodríguez and Maria Serna	Forward and Backward Linear Threshold Ranks	Short

6b	Nov 11 th	17:30	18:00	Risul Islam, Ben Treves, Md Omar Faruk Rokon and Michalis Faloutsos	LinkMan: Hyperlink-Driven Misbehavior Detection in Online Security Forums	Regular
		18:00	18:20	Valeria Fionda and Giuseppe Pirrò	Community Deception in Attributed Networks	Short
		18:20	18:40	Akrati Saxena, Mykola Pechenizkiy, George H. L. Fletcher, Yulong Pei, Jan Veldsink and Werner V. Ipenburg	The Banking Transactions Dataset and its Comparative Analysis with Scale-free Networks	Short
		18:40	19:10	Lihi Idan	Using Dynamic Bayesian Networks to infer behavioral intentions of social-network users	Regular

DEMO Track Session	Nov 8 th	Thomas Marcoux, Oluwaseyi Adeliyi and Nitin Agarwal		Characterizing Video-based Online Information Environment using VTracker
		Mayank Kejriwal and Ke Shen		Unsupervised real-time induction and interactive visualization of taxonomies over domain-specific concepts
		Can Yang, Bernardo Pereira Nunes, Jonatas Castro dos Santos, Sean Wolfgang Matsui Siqueira and Xinyuan Xu		The BiasChecker: How biased are social media searches?
		Abiola Akinnubi, Nitin Agarwal, Zachary Stine and Sodiq Oyedotun		Analyzing Online Opinions and Influence Campaigns on Blogs using BlogTracker
		Zhenhe Pan, Shuang Jiang, Juntao Su, Muzhe Guo and Yuanlin Zhang		Knowledge Graph Based Platform of COVID-19 Drugs and Symptoms

PhD Track Session	Nov 8 th	Effrosyni Papanastasiou and Anastasios Giovanidis		Bayesian Inference of a Social Graph with Trace Feasibility Guarantees
		Lauren Hudson, Roger M. Whitaker, Stuart M. Allen, Liam D. Turner and Diane Felmlee		The Centrality of Edges based on their role in Induced Triads

Multidisciplinary Track Session	Nov 10 th	Pedro Ramaciotti Morales, Jean-Philippe Cointet, Gabriel Muñoz Zolotoochin	Unfolding the dimensionality structure of social networks in ideological embeddings	Short
		Philippe Giabbanelli, Michael Galgoczy, Duc Nguyen, Romain Foy, Ketra Rice, Nisha Nataraj, Margaret Brown, Christopher Harper	Mapping the Complexity of Suicide by Combining Participatory Modeling and Network Science	Short
		Suomi Kobayashi, Shohei Matsugu, Hiroaki Shiokawa	Fast Indexing Algorithm for Efficient kNN Query on Complex Networks	Short
		Demetris Paschalides, George Pallis, Marios Dikaiakos	POLAR: A Holistic Framework for the Modelling of Polarization and Identification of Polarizing Topics in News Media	Regular
		Lynnette Ng, John Yeh Han Tan, Darryl Jing Heng Tan, Roy Ka-Wei Lee	Will You Dance To The Challenge? Predicting Social Contagion of TikTok Challenges	Short

Industrial Track Session I	Nov 10 th	Jakapun Tachaiya, Arman Irani, Kevin Esterling and Michalis Faloutsos.	SentiStance: Measuring and Quantifying Sentiment and Stance in Online Discourse
		Renhao Cui, Gagan Agrawal and Rajiv Ramnath	Constraint-Embedded Paraphrase Generation for Commercial Tweets
		Saket Gurukar, Srinivasan Parthasarathy, Rajiv Ramnath, Catherine Calder and Sobhan Moosavi.	LocationTrails: A Federated Approach to Learning Location Embeddings
Industrial Track Session II	Nov 11 th	Stefanos Antaris, Dimitrios Rafailidis and Sarunas Girdzijauskas	Meta-Reinforcement Learning via Buffering Graph Signatures for Live Video Streaming Events
		Berk Kardas, Ismail Erdem Bayar, Tansel Ozyer, Reda Alhajj	Detecting Spam Tweets Using Machine Learning and Effective Preprocessing
		Tanmay Sachan, Nikhil Pinnaparaju, Manish Gupta and Vasudeva Varma.	SCATE: Shared Cross Attention Transformer Encoders for Multimodal Fake News Detection
Industrial Track Session III	Nov 11 th	Md Rashidul Hasan, Dheeman Saha, Farhan Asif Chowdhury, James Degnan and Abdullah Mueen.	DiffuScope: Inferring Post-specific Diffusion Network
		Nadir Emre Zirekbilek, Mustafa Ekrem Erakın, Tansel Ozyer, Reda Alhajj	Hot Topic Detection and Evaluation of Multi-Relation Effects

		Sofia Hurtado, Radu Marculescu, Justin A Drake and Ravi Srinivasan	Pruning Digital Contact Networks for Meso-scale Epidemic Surveillance Using Foursquare Data
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MSNDS Workshop Session	Nov 8 th	Fabio Bertone, Luca Vassio and Martino Trevisan	The Stock Exchange of Influencers: A Financial Approach for Studying Fanbase Variation Trends
		I-Hsien Ting	Towards Automatic Content Generated Website Based on Content Classification and Auto-article Generation
		Min-Yuh Day	Artificial Intelligence for Knowledge Graphs of Cryptocurrency Anti-money Laundering in Fintech
		Tomislav Duricic, Dominik Kowald, Markus Schedl and Elisabeth Lex	My friends also prefer diverse music: homophily and link prediction with user preferences for mainstream, novelty, and diversity in music

SI Workshop Session	Nov 8 th	Ninghan Chen, Xihui Chen, Zhiqiang Zhang and Jun Pang	From #Jobsearch to #Mask: Improving COVID-19 Cascade Prediction with Spillover Effects
		Sarvnaz Sadeghi and Pooya Moradian Zadeh	A Novel Knowledge-based Multi-Population Framework for Studying Opinion Dynamics of Migrated Individuals
		Abida Sadaf, Luke Mathieson and Katarzyna Musial-Gabrys	Network Structure Measures and Number of Driver Nodes: An Insight
		Fabián Riquelme, Francisco Muñoz and Rodrigo Olivares	Social influence under improved multi-objective metaheuristics
		Ninghan Chen, Xihui Chen, Zhiqiang Zhang and Jun Pang	From #Jobsearch to #Mask: Improving COVID-19 Cascade Prediction with Spillover Effects

HI-BI-BI Session I	Nov 9 th	Carmela Comito, Deborah Falcone and Agostino Forestiero	Diagnosis Prediction based on Similarity of Patients Physiological Parameters
		M.Taleb Albrijawi, Amrou Haj Ibrahim, Reda Alhajj	Predictions of Drug Metabolism Pathways Through CYP 3A4 Enzyme By Analysing Drug-Target Interactions Network Graph
		Aya Alhajj, Sleiman Alhajj and Sibel Tariyan Özyer	Combining Multiple Clustering and Network Analysis for Discoveries in Gene Expression Data
HI-BI-BI Session II	Nov 9 th	Kunihiro Miyazaki, Takayuki Uchiba, Fujio Toriumi, Kenji Tanaka and Takeshi Sakaki	Retrospective Analysis of Controversial Topics on COVID-19 in Japan
		Carmela Comito and Clara Pizzuti	Predicting COVID-19 with AI techniques: current research and future directions
		Farzaneh Jouyandeh, Sarvnaz Sadeghi, Bahareh Rahmatikargar and Pooya Moradian Zadeh	Fake News and COVID-19 Vaccine: A Comparative Study

FAB Session I	Nov 10 th	Yang Guo, Xuekui Zhang, Fatemeh Esfahani, Venkatesh Srinivasan, Alex Thomo and Li Xing	Multi-Stage Graph Peeling Algorithm for Probabilistic Core Decomposition
		Anmol Mann, Venkatesh Srinivasan and Alex Thomo	Approximating 4-Cliques in Streaming Graphs: The Power of Dual Sampling
		Connor Hryhoruk and Carson Leung	Compressing and mining social network data
		Haripriya Chakraborty and Liang Zhao	An Auction-Based Mechanism to Promote Cooperation in Resource Exchange Networks
FAB Session II	Nov 11 th	Zikai Guo	Topology Optimization for Graph Neural Network based Collaborative Filtering
		Yaren Yilmaz	Enriching Demand Prediction with Product Relationship Information using Graph Neural Networks
		Carson Leung	A Mathematical Model for Friend Discovery from Dynamic Social Graphs

FAB Session III	Nov 11 th	Mayank Bhasin, Harshit Harshit and Pawan Goyal	Which Acts Model Happiness? An Exploratory Analysis on Twitter and Goodreads
		Yu-Che Tsai	CARE: Learning Convolutional Attentional Recurrent Embedding for Sequential Recommendation
		Dmitri Goldenberg and Eyal Tenzer	Deterministic Influence Maximization Approach for Sequential Active Marketing

FOSINT-SI Session I	Nov 9 th	Yichen Wang, Richard Han, Tamara Lehman, Qin Lv, Shivakant Mishra	Analyzing Behavioral Changes of Twitter Users After Exposure to Misinformation	Regular
		Mohamad Imad, Mahaini, Shujun Li	Detecting Cyber Security Related Twitter Accounts and Different Sub-Groups: A Multi-Classifer Approach	Regular
		Farhan Asif Chowdhury, Dheeman Saha, Md Rashidul Hasan, Koustuv Saha, Abdullah Mueen	Examining Factors Associated with Twitter Account Suspension Following the 2020 U.S. Presidential Election	Regular
FOSINT-SI Session II	Nov 9 th	Luke Osterritter, Kathleen Carley	Conversations around Organizational Risk and Insider Threat	Regular
		Malek Malkawi, Tansel Ozyer, Reda Alhajj	Automation of Active Reconnaissance Phase: An Automated API-based Port and Vulnerability Scanner	Regular
		Mikko Korkiakosk, Fatima Sadiq, Febrian Setianto, Umami Khaira Latif, Paula Alaves, Panos Kostakos	Using Smart Glasses for Monitoring Cyber Threat Intelligence Feeds	Short
FOSINT-SI Session III	Nov 10 th	Johan Fernquist, Björn Pelzer, Lukas Lundmark, Lisa Kaati, Fredrik Johansson	Similarity Ranking using Handcrafted Stylometric Traits in a Swedish Context	Regular
		Neha Kumari, Tushar Mohan, Balaji Buduru, Ponnurangam Kumaraguru	Truth and Travesty Intertwined: A Case Study of #SSR Counterpublic Campaign	Regular
		Febrian Setianto, Erion Tsani, Fatima Sadiq, Georgios, Domalis, Dimitris Tsakalidis, Panos Kostakos	GPT-2C: A parser for honeypot logs using large pre-trained language models	Short