

# **The 15th International Conference on Knowledge Science, Engineering and Management (KSEM 2022)**

August 6-8, 2022  
Singapore

## **Conference Program and Information Booklet**



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## KSEM 2022 Keynotes

Aug. 6th, 2022, 9:00, Room A



### **Title: Weakly Supervised Machine Learning for Knowledge Discovery from Unstructured Text**

**Prof. Jiawei Han**

Michael Aiken Chair Professor,

Fellow of ACM and IEEE

University of Illinois at Urbana-Champaign

**Bio:** Jiawei Han is Michael Aiken Chair Professor in the Department of Computer Science, University of Illinois at Urbana-Champaign. He received ACM SIGKDD Innovation Award (2004), IEEE Computer Society Technical Achievement Award (2005), IEEE Computer Society W. Wallace McDowell Award (2009), and Japan's Funai Achievement Award (2018). He is Fellow of ACM and Fellow of IEEE and served as the Director of Information Network Academic Research Center (INARC) (2009-2016) supported by the Network Science-Collaborative Technology Alliance (NS-CTA) program of U.S. Army Research Lab and co-Director of KnowEnG, a Center of Excellence in Big Data Computing (2014-2019), funded by NIH Big Data to Knowledge (BD2K) Initiative. Currently, he is serving on the executive committees of two NSF funded research centers: MMLI (Molecular Make Research Institute)—one of NSF funded national AI centers since 2020 and I-Guide—The National Science Foundation (NSF) Institute for Geospatial Understanding through an Integrative Discovery Environment (I-GUIDE) since 2022.

**Abstract:** The real-world big data are largely dynamic, interconnected, and unstructured texts. It is important to transform such massive unstructured data into structured knowledge. Many researchers rely on labor-intensive labeling and curation to extract knowledge from text data. Such approaches, however, are not scalable. We vision that massive text data itself may disclose a large body of hidden structures and knowledge. Equipped with pretrained language models and machine learning methods, it is promising to transform unstructured data into structured knowledge. In this talk, we overview a set of weakly supervised machine learning methods developed recently in our group for such an exploration, including joint spherical text embedding, discriminative topic mining, taxonomy construction, text classification, and taxonomy-guided text analysis. We show that weakly supervised approach could be promising at transforming massive text data into structured knowledge.

## KSEM 2022 Keynotes

Aug. 6th, 2022, 10:00, Room A



### **Title: Talent Analytics: Prospects and Opportunities**

**Prof. Hui Xiong**

Chair Professor, Fellow of AAAS and IEEE

Hong Kong University of Science and Technology  
Guangzhou, China

**Bio:** Dr. Hui Xiong is currently a Chair Professor at the Hong Kong University of Science and Technology, Guangzhou, China. Dr. Xiong's research interests include data mining, mobile computing, and their applications in business. Dr. Xiong received his PhD in Computer Science from University of Minnesota, USA. He has served regularly on the organization and program committees of numerous conferences, including as a Program Co-Chair of the Industrial and Government Track for the 18th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), a Program Co-Chair for the IEEE 2013 International Conference on Data Mining (ICDM), a General Co-Chair for the 2015 IEEE International Conference on Data Mining (ICDM), and a Program Co-Chair of the Research Track for the 2018 ACM SIGKDD International Conference on Knowledge Discovery and Data Mining. He received the 2021 AAAI Best Paper Award and the 2011 IEEE ICDM Best Research Paper award. For his outstanding contributions to data mining and mobile computing, he was elected an AAAS Fellow and an IEEE Fellow in 2020

**Abstract:** The big data trend has made its way to human resource management. Indeed, the availability of large-scale human resource (HR) data provide unparalleled opportunities for business leaders to understand talent behaviors and generate useful talent knowledge, which in turn deliver intelligence for real-time decision making and effective people management at work. In this talk, we introduce the powerful set of innovative Artificial Intelligence (AI) techniques developed for intelligent human resource management, such as recruiting, performance evaluation, talent retention, talent development, job matching, team management, leadership development, and organization culture analysis. In addition, we will also demonstrate how the results of talent analytics can be used for other business applications, such as market trend analysis and financial investment.

## KSEM 2022 Keynotes

Aug. 6th, 2022, 15:00, Room A



### **Title: Random Fuzzy Sets and Belief Functions: Application to Machine Learning**

**Prof. Thierry Denoeux**

Professor

Université de Technologie de Compiègne

**Bio:** Thierry Denoeux is a Full Professor with the Department of Information Processing Engineering at the University of Compiègne, France, and a senior member of the French Academic Institute (Institut Universitaire de France). His research interests concern reasoning and decision-making under uncertainty and, more generally, the management of uncertainty in intelligent systems. His main contributions are in the theory of belief functions with applications to statistical inference, pattern recognition, machine learning and information fusion. He has published more than 300 papers in this area. He is the Editor-in-Chief of the International Journal of Approximate Reasoning, and an Associate Editor of several journals including Fuzzy Sets and Systems and International Journal on Uncertainty, Fuzziness and Knowledge-Based Systems.

**Abstract:** The theory of belief functions is a powerful formalism for uncertain reasoning, with many successful applications to knowledge representation, information fusion, and machine learning. Until now, however, most applications have been limited to problems (such as classification) in which the variables of interest take values in finite domains. Although belief functions can, in theory, be defined in infinite spaces, we lacked practical representations allowing us to manipulate and combine such belief functions. In this talk, I show that the theory of epistemic random fuzzy sets, an extension of Possibility and Dempster-Shafer theories, provides an appropriate framework for evidential reasoning in general spaces. In particular, I introduce Gaussian random fuzzy numbers and vectors, which generalize both Gaussian random variables and Gaussian possibility distributions. As an illustration, I show an application of this new formalism to nonlinear regression.

Related reference:

T. Denoeux, Reasoning with fuzzy and uncertain evidence using epistemic random fuzzy sets: general framework and practical models. Preprint arXiv:2202.08081, <https://doi.org/10.48550/arXiv.2202.08081>



## Technical Program

### The 15th International Conference on Knowledge Science, Engineering and Management (KSEM 2022)

#### KSEM Volume 1 – Session 1:

Aug. 6th, 2022, 12:30, Room A

Online Session

- Haoyang Ma, Zhaoyun Ding, Zeyu Li and Hongyu Guo. OTE: An Optimized Chinese Short Text Matching Algorithm based on External Knowledge.
- Yuejia Wu, Jiale Li and Jiantao Zhou. KIR: A Knowledge - -enhanced Interpretable Recommendation Method.
- Gangli Liu. ICKEM: a tool for estimating one's understanding of conceptual knowledge.
- Yingqi Zhang, Wenjun Ma and Yuncheng Jiang. MCSN: Multi-graph Collaborative Semantic Network for Chinese NER.
- Yuting Wang, Qian Gao and Jun Fan. KEAN: Knowledge-Enhanced and Attention Network for News Recommendation.

#### KSEM Volume 1 – Session 2

Aug. 6th, 2022, 13:30, Room A

Online Session

- Haohao Qu, Sheng Liu, Zihan Guo, Linlin You and Jun Li. Customization and Learning to Learn (CLL): A knowledge transfer Approach for Few-sample Parking Occupancy Prediction.
- Wang Xin, Yang Lan, He Honglian, Fang Yu, Zhan Huayi and Zhang Ji. ConCas: Cascade Popularity Prediction based on Topic-Aware Graph Contrastive Learning.
- Wen Chen, Wenjun Ma, Yuncheng Jiang and Xiaomao Fan. GADN: GCN-based Attentive Decay Network for Course Recommendation.
- Ya Wang, Cungen Cao, Zhiwen Chen and Shi Wang. ECCKG: An Eventuality-Centric Commonsense Knowledge Graph.
- Ya Wang, Cungen Cao, Zhiwen Chen and Shi Wang. CKGAC: a Commonsense Knowledge Graph about Attributes of Concepts.

#### KSEM Volume 1 – Session 3

Aug. 7th, 2022, 10:30, Room A

Online Session

- Yawei Zhao, Yangyuanxiang Xu and Zhiwei Wang. Edge-shared GraphSAGE: A New Method of Buffer Calculation for Parallel Management of Big Data Project Schedule.
- Chen Ling, Xianren Zhang, Jiaying Shang, Dajiang Liu, Yong Li, Wu Xie and Baohua Qiang. ConCas: Cascade Popularity Prediction based on Topic-Aware Graph Contrastive Learning.
- Wenying Feng, Daren Zha, Lei Wang and Xiaobo Guo. IMDb30: A Multi-relational Knowledge Graph Dataset of IMDb Movies.
- Chuanrui Wang, Jun Bai, Xiaofeng Zhang, Cen Yan, Yuanxin Ouyang, Wenge Rong and Zhang Xiong. KnowReQA: A Knowledge-aware Retrieval Question Answering System.
- Yu Sun, Kailang Ma, Xuanxin Liu and Jian Cui. Cross-CAM: Focused Visual Explanations for Deep Convolutional Networks via Training-Set Tracing.

#### KSEM Volume 1 – Session 4

Aug. 7th, 2022, 11:30, Room A

Online Session

- Gui Yuan, Gang Liu and Xinyun Wu. A decoupled YOLOv5 with deformable convolution and multi-scale attention.
- Xunhan Chen, Zhiyong Ma, Zhenghong Xiao, Qi Xia and Shaopeng Liu. KGESS - A Knowledge Graph Embedding method based on Semantics and Structure..
- Hejian Gu, Hang Yu and Xiangfeng Luo. DBGARE: Across-Within Dual Bipartite Graph Attention for Enhancing Distantly Supervised Relation Extraction.
- Yuan Yuan, Yan Tang and Luomin Du. MGR: Metric Learning with Graph Neural Network for Multi-behavior Recommendation.
- Baoshuai Du, Tong Fang, Lulu Gao, Guang Yang and Jingbo Zhao. Recognition of mechanical parts based on improved YOLOv4-Tiny algorithm.

#### KSEM Volume 1 – Session 5

Aug. 7th, 2022, 13:30, Room A

Online Session

- Shiyang Lin, Chenhe Dong and Ying Shen. Cross-perspective Graph Contrastive Learning.
- Yue Luo, Chunming Yang, Bo Li, Xujian Zhao, and Hui Zhang. CP Tensor Factorization for Knowledge Graph Completion.
- Kai Wang, Chunhong Zhang, Jibin Yu and Qi Sun. Signal Embeddings For Complex Logical Reasoning In Knowledge Graphs.



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- Ruiguo Yu, Siyao Gao, Jian Yu, Mankun Zhao, Tianyi Xu, Hongwei Liu, Mei Yu and Xuwei Li. Knowledge Graph Embedding with Direct and Disentangled Neighborhood Representation Attention Network.
- Piotr Swędrak, Weronika T. Adrian and Krzysztof Kluza. Combining knowledge graphs with semantic similarity metrics for sentiment analysis.

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### **KSEM Volume 1 – Session 6**

Aug. 7th, 2022, 14:30, Room A

Online Session

- Dongjun Fu, Chunhong Zhang, Jibin Yu and Qi Sun. Improving Dialogue Generation with Commonsense Knowledge Fusion and Selection.
- Boyao Zhang, Zijian Wang, Haikuo Zhang, Yonghua Zhao, Jingqi Sun and Jing Wang. Construction Research and Applications of Industry Chain Knowledge Graphs.
- Linqing Yang, Kecen Guo and Bo Liu. Question Answering over Knowledge Graphs with Query Path Generation.
- Yuanhao Hu, Yuanxin Ouyang, Jun Bai, Chuanrui Wang, Wenge Rong and Zhang Xiong. Asymmetric Neighboring Context Modeling for Knowledge Graph Embedding.
- Jingqi Wang, Cui Zhu and Wenjun Zhu. Dynamic Embedding Graph Attention Networks for Temporal Knowledge Graph Completion.

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### **KSEM Volume 1 – Session 7**

Aug. 8th, 2022, 9:00, Room A

Online Session

- Tengwei Song, Jie Luo and Xinagyu Chen. Pre-train Unified Knowledge Graph Embedding with Ontology.
- Xin Wang, Min Luo, Chengliang Si and Huayi Zhan. Answering Complex Questions on Knowledge Graphs.
- Yi Liang, Shuai Zhao and Bo Cheng. Tackling Solitary Entities for Few-Shot Knowledge Graph Completion.
- Shun Mao, Jieyu Zhan, Jiawei Li and Yuncheng Jiang. Knowledge Structure-aware Graph-Attention Networks for Knowledge Tracing.
- Xiang Ying, Minghao Li, Jian Yu, Mankun Zhao, Tianyi Xu, Mei Yu, Hongwei Liu and Xuwei Li. Text-Enhanced and Relational Context based Hyperbolic Knowledge Graph Embedding.

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### **KSEM Volume 1 – Session 8**

Aug. 8th, 2022, 10:00, Room A

Online Session

- Biao Ma, Xiaoying Chen and Shengwu Xiong. Query and Neighbor-aware Reasoning based Multi-hop Question Answering over Knowledge Graph.
- Yu Ling and Zhilong Shan. Knowledge Concept Recommender Based on Structure Enhanced Interaction Graph Neural Network.
- Maoyu Zhang and Haiming Li. A Rating Prediction Model Based on Knowledge Modeling.
- Liu Yang, Bingyuan Xie, Jun Long, Wenti Huang, Shuyi Liu and Tingxuan Chen. Attending to SPARQL logs for knowledge representation learning.
- Tengwei Song and Jie Luo. Attention-based Learning for Multiple Relation Patterns in Knowledge Graph Embedding.

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### **KSEM Volume 1 – Session 9**

Aug. 8th, 2022, 11:20, Room A

Online Session

- Borui Xu, Tong Zhang and Weiguo Liu. A Multi-scale Convolution and Gated Recurrent Unit Based Network for Limit Order Book Prediction.
- Zhang Yu, Li Yimeng, Chaomu Rilige and Weng Yu. A Study of Event Multi-triple Extraction Methods Based on Edge-Enhanced Graph Convolution Networks.
- Ruixin Ma, Guangyue Lv, Liang Zhao, Yunlong Ma, Hongyan Zhang and Xiaobin Liu. Multi-Attention User Information Based Graph Convolutional Networks for Explainable Recommendation.
- Piotr Wiśniewski, Krzysztof Kluza and Antoni Ligeza. Recomposition of Process Choreographies using a Graph-based Model Repository.
- Thanh Le, Chi Tran, Loc Tran and Bac Le. Integrating Quaternion Graph Convolutional Networks with Tucker Decomposition for Link Prediction on Knowledge Graphs.

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### **KSEM Volume 1 – Session 10**

Aug. 8th, 2022, 13:30, Room A

Online Session

- Wu Yubin, Hao Sheng, Shuai Wang and Zhang Xiong. Data Association with Graph Network for Multi-Object Tracking.
- Sijie Wang, Ziwen Zhang, Yong Dou, Jun Luo, Zhen Huang, Biao Hu, Zhongwu Chen, Xiubin Yu, Zhenliang Guo and Xinxin Su. Discourse Component Recognition via Graph Neural Network in Chinese Student Argumentative Essays.



- Chuanqing Wang, Yangyang Li, Chaoqun Fei and Xikun Huang. Labeled Knowledge-based Decision Making with Assumption-based Argumentation.
- Yanze Ren, Yan Liu, Guangsheng Zhang, Lian Liu and Peng Lv. Discrimination of News Political Bias Based on Hetero-geneous Graph Neural Network.
- Mariam Ben Hassen, Faiez Gargouri and Mohamed Turki. BPMN4SBP for Multi-Dimensional Modeling of Sensitive Business Processes for Knowledge Management

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### **KSEM Volume 1 – Session 11**

Aug. 8th, 2022, 14:30, Room A

Online Session

- Pengyun Xie, Xinning Zhu, Zheng Hu and Chunhong Zhang. Cross-Sentence Temporal Relation Extraction with Relative Sentence time.
- Yashen Wang, Xiaoye Ouyang, Xiaoling Zhu and Huanhuan Zhang. Concept Commons Enhanced Knowledge Graph Representation.
- Yashen Wang, Xiaoling Zhu and Huanhuan Zhang. Relation Prediction Based on Source-Entity Behavior Preference Modeling via Heterogeneous Graph Pooling.
- Xiaotian Xiong, Qianshi Yuan and Xiaomei Wei. Graph-Based Neural Collaborative Filtering Model for Drug-Disease Associations Prediction.
- Yingpei Chen and Yan Tang. Attentive Capsule Graph Neural Networks for Session-based Recommendation.
- Xixi Zhu, Bin Liu, Zhaoyun Ding, Li Yao and Cheng Zhu. Implementing Large-scale ABox Materialization Using Subgraph Reasoning.

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### **KSEM Volume 2 – Session 1**

Aug. 6th, 2022, 12:30, Room B

Online Session

- Yijie Wang, Yihai Chen, Deemah Alomair and Ridha Khedri. DISEL: A Language for Specifying DIS-based Ontologies.
- Xiaohui Wei, Mingkai Hou, Hengshan Yue and Chenghao Ren. MSSA-FL: High-Performance Multi-Stage Semi-Asynchronous Federated Learning with Non-IID Data.
- Jing Ren, Tianyang Cao, Yifan Yang, Yunyan Zhang, Xi Chen, Tian Feng, Baobao Chang, Zhifang Sui, Ruihui Zhao, Yefeng Zheng and Bang Liu. CLINER: Clinical Interrogation Named Entity Recognition.
- Hao Yang, Tao Shimin and Zhang Min. CCDC: a Chinese-centric Cross Domain Contrastive learning framework.
- Amitabh Priyadarshi and Krzysztof J. Kochut. PartKG2Vec: Embedding of partitioned Knowledge Graphs.

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### **KSEM Volume 2 – Session 2**

Aug. 6th, 2022, 13:30, Room B

Online Session

- Chen Lin. Mario Fast Learner: Fast and Efficient solutions for Super Mario Bros.
- Ankun Wang, Feng Liu, Zhen Huang, Minghao Hu, Dongsheng Li, Yifan Chen and Xinjia Xie. Deep-to-bottom Weights Decay: A Systemic Knowledge Review Learning Technique for Transformer Layers in Knowledge Distillation.
- Qiwei Ji, Bo Yu, Zhiwei Yang and Hechang Chen. LAM: Lightweight Attention Module.
- Thanh Le, Anh-Hao Phan and Bac Le. ACRM: Integrating Adaptive Convolution with Recalibration Mechanism for Link Prediction.
- Weipeng Cao, Dachuan Li, Xingjian Zhang, Meikang Qiu and Ye Liu. BLSHF: Broad Learning System with Hybrid Features.

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### **KSEM Volume 2 – Session 3**

Aug. 7th, 2022, 10:30, Room B

Online Session

- Tiechui Yao, Jue Wang, Haizhou Cao, Fang Liu, Yangang Wang and Xuebin Chi. A Multi-level Attention-based LSTM Network for Ultra-short-term Solar Power Forecast using Meteorological Knowledge.
- Xiaochun Qu, Zheyuan Zhang, Wei Xiao, Jinye Ran, Guodong Wang and Zili Zhang. Sparse Dense Transformer Network for Video Action Recognition.
- Ming Wu, Junqian Xing and Shanxiong Chen. Deep User Multi-Interest Network for Click-Through Rate Prediction.
- Zhao Li, Yong Zhang, Zhao Zhang, Xing Wang and Lin Zhu. Adaptive Spatial-Temporal Convolution Network for Traffic Forecasting.
- Qian Zhou, Ming Yang, Shidong Chen, Mengfan Tang and Xingbin Wang. Multi-modal Face Anti-spoofing Using Channel Cross Fusion Network and Global Depth-wise Convolution.

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### **KSEM Volume 2 – Session 4**

Aug. 7th, 2022, 11:30, Room B

Online Session

- Tianxing Han, Pengyi Hao and Cong Bai. Structural and Temporal Learning for Dropout Prediction in MOOCs.

- Zhengyang Ai, Guangjun Wu and Zisen Qi. Towards Better Personalization: A Meta-Learning Approach for Federated Recommender Systems.
- Junlin Zhu, Xudong Luo and Jiaye Wu. A BERT-Based Method for Legal Case Retrieval.
- Yang Liu, Xinxhi Wang, Yudong Chang and Chao Jiang. Towards Explainable Reinforcement Learning Using Scoring Mechanism Augmented Agents.
- Yingdong Wang. Domain-Agnostic EEG emotion Learning on multi-source Using Mutual Information Maximization.

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### **KSEM Volume 2 – Session 5**

Aug. 7th, 2022, 13:30, Room B

Online Session

- Bo Liu, Lei Liu and Peiyi Wang. Few-shot Learning with Self-supervised Classifier for Complex Knowledge Base Question Answering.
- Yizhao Wang and Yuncheng Jiang. A GAT-based Chinese Text Classification Model: Using of Redical Guidance and Association Between Characters Across Sentences.
- Ronghua Zhang, Zhenlong Zhu, Changzheng Liu, Yuhua Li and Ruixuan Li. Deep Neural Factorization Machine for Recommender System.
- Songwei Zhao, Jiuman Song, Xinqi Du, Tianyi Liu, Huiling Chen and Hechang Chen. Avoidance-aware Epidemic Prediction by Enhanced Whale Optimization.
- Qingfeng Chen, Jing Wu, Feihu Huang and Yu Han. Multi-Layer LSTM Parallel Optimization Based on Hardware and Software Cooperation.

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### **KSEM Volume 2 – Session 6**

Aug. 7th, 2022, 14:30, Room B

Online Session

- Huifan Yang, Da-Wei Li, Zekun Li, Donglin Yang, Jinsheng Qi and Bin Wu. Open Relation Extraction via Query-based Span Prediction.
- Baolin Jia, Shiqin Yin, Ningchao Wang and Junli Lin. Relational Triple Extraction with Relation-Attentive Contextual Semantic Representations.
- Xingsheng Zhang, Yue Hu, Yajing Sun, Luxi Xing, Yuqiang Xie, Yunpeng Li and Wei Peng. Document-Level Multi-Event Extraction via Event Ontology Guiding.
- Kaili Sun, Xudong Luo and Michael Luo. A Survey of Pretrained Language Models.
- David Graf, Werner Retschitzegger, Wieland Schwinger, Elisabeth Kapsammer and Norbert Baumgartner. Bridging Signals and Human Intelligence - Log Mining-Driven and Meta Model-Guided Ontology Population in Large-Scale IoT.

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### **KSEM Volume 2 – Session 7**

Aug. 8th, 2022, 9:00, Room B

Online Session

- Yanyun Pang, Aimin Wang, Yuying Lian, Jiahui Li and Geng Sun. A Multi-Objective Optimization Method for Joint Feature Selection and Classifier Parameter Tuning.
- Luomin Du, Yan Tang and Yuan Yuan. A Link Prediction Method using Local Node Importance.
- Krzysztof Kluza, Piotr Wiśniewski, Mateusz Zaremba, Weronika T. Adrian, Anna Suchenia and Antoni Ligeza. Proposal of a method for creating a BPMN model based on the data extracted from a DMN model.
- Xinqi Du, Tianyi Liu, Songwei Zhao, Jiuman Song and Hechang Chen. District-Coupled Epidemic Control via Deep Reinforcement Learning.
- Li Xu, Wohuan Jia, Yuntao Yu and Jiacheng Jiang. An Interpretability Algorithm of Neural Network Based on Neural Support Decision Tree.

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### **KSEM Volume 2 – Session 8**

Aug. 8th, 2022, 10:00, Room B

Online Session

- Zongguo Wang, Xinfu He, Han Cao, Ziyi Chen, Yuedong Cui, Meng Wan, Jue Wang and Yangang Wang. Data-driven Approach for Investigation of Irradiation Hardening Behavior of RAFM Steel.
- Ameni Chamekh, Mariem Mahfoudh and Germain Forestier. Sentiment analysis based on deep learning in e-commerce.
- Hadhami Mejbri, Mariem Mahfoudh and Germain Forestier. Deep learning-based sentiment analysis for predicting financial movements.
- Juan Chen, Yuanteng Xu and Haiyang Jia. Study on Learning Performance Analysis Based on Mixed Teaching Data.
- Ying Li, Qingfeng Wu and Bin Chen. Multi-attention Relation Network for Figure Question Answering.

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### **KSEM Volume 2 – Session 9**

Aug. 8th, 2022, 11:20, Room B

Online Session

- Ouxia Du, Ya Li, Yujia Zhang, Xinyue Li, Junyi Zhu and Tanghu Zheng. Multi-View Heterogeneous Network Embedding.

- Xiubin Yu, Xingjun Chen, Zhen Huang, Yong Dou, Biao Hu, Sijie Wang, Zhenliang Guo, Zhongwu Chen and Xinxin Su. Topic and Reference Guided Keyphrase Generation from Social Media.
- Langzhou He, Jiaxin Wang, Chao Gao and Li Tao. Integrating Global Features into Neural Collaborative Filtering.
- Zied Bouraoui, Sebastien Konieczny, Thanh Ma and Ivan Varzinczak. Tree Edit Distance Based Ontology Merging Evaluation Framework.
- Shun Li, Zehen Zhong and Bing Shi. Ride-hailing Order Matching and Vehicle Repositioning using Value Function.

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### **KSEM Volume 2 – Session 10**

Aug. 8th, 2022, 13:30, Room B

Online Session

- Bo Li, Tianbao Liang, Jianming Lv, Shengjing Chen and Hongjian Xie. Unsupervised Person Re-ID via Loose-Tight Alternate Clustering.
- Baoshuo Kan, Wenpeng Lu, Xueping Peng, Shoujin Wang, Guobiao Zhang, Weiyu Zhang and Xinxiao Qiao. Word Sense Disambiguation Based on Memory Enhancement Mechanism.
- Nhung Nguyen Thi-Hong, Phuong Ha Phan-Dieu, Luan Nguyen Thanh, Kiet Nguyen Van and Ngan Nguyen Luu Thuy. Sentence Transformer Base Information System for Healthcare Domain.
- Yan Tan. Multi-objective beetle swarm optimization for portfolio selection.
- Dehong He, Song Wu, Jinpeng Liu and Guoqiang Xiao. Cross Transformer Network for Scale-Arbitrary Image Super-Resolution.

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### **KSEM Volume 2 – Session 11**

Aug. 8th, 2022, 14:30, Room B

Online Session

- Yang Liu, Xinzhi Wang, Yudong Chang, Chao Jiang and Qingjie Zhang. Incorporating Explanation to Balance the Exploration and Exploitation of Deep Reinforcement Learning.
- Liang Zhu, Gengchen Hou, Xin Song, Yonggang Wei and Yu Wang. A spatial interpolation using clustering adaptive inverse distance weighting algorithm with linear regression.
- Haythem Chniti and Mariem Mahfoudh. Design a model of driving scenarios for autonomous vehicles.
- Xu Wang, Frank Van Harmelen, Michael Cochez and Zhisheng Huang. Scientific item Recommendation using a Citation Network.
- Jingyuan Zhang. A New K-Multiple-Means Clustering Method.

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### **KSEM Volume 3 – Session 1**

Aug. 6th, 2022, 12:30, Room C

Online Session

- Ying Lin, Shengfu Ning, Jianpeng Hu, Jiansong Liu, Yifan Cao, Junyuan Zhang and Huan Pi. PPBR-FL: a Privacy-preserving and Byzantine-robust Federated Learning System.
- Zhongxuan Xue, Jiang Zhong, Qizhu Dai and Rongzhen Li. CorefDRE: Coref-aware Document-level Relation Extraction.
- Errikos Streviniotis, Athina Georgara and Georgios Chalkiadakis.  $\epsilon$ -MC nets: A Compact Representation Scheme for Large Cooperative Game.
- Zhengchao Jiang, Zili Zhang, Fan Zhang, Hao Xu and Li Tao. MEOD: A Novel Multi-stage Ensemble Model Based on Rank Aggregation and Stacking for Outlier Detection.
- Leyao Chen, Wei Zheng and Wenxin Hu. MTN-Net: A Multi-Task Network for Detection and Segmentation of Thyroid Nodules in Ultrasound Images.

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### **KSEM Volume 3 – Session 2**

Aug. 6th, 2022, 13:30, Room C

Online Session

- Shengdong Qu, Jingxian Li, Yan Chu and Qingchao Zhao. TSC: A Face Clustering Method Based on GCN.
- Lijian Li, Yuanpeng He and Yongpan Sheng. NNDF: A New Neural Detection Network for Aspect-Category Sentiment Analysis.
- Jinbang Hong, Keke Tang, Jiaxin Wang, Xianghua Li, Sensen Guo and Peican Zhu. GM-Attack: Improving the Transferability of Adversarial Attacks.
- Yaofeng Chen, Chunyang Zhang, Long Ye, Xiaogang Peng, Meikang Qiu and Weipeng Cao. W-Hash: A Novel Word Hash Clustering Algorithm for Large-scale Chinese Short Text Analysis.
- Yang Sun, Wei Hu, Fang Liu, Feihu Huang, and Yonghao Wang. Sparse Spectral Attention: A Sparse Attention that can jointly encode Local information and Global context.

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### **KSEM Volume 3 – Session 3**

Aug. 7th, 2022, 10:30, Room C

Online Session

- Juxiong Xu and Minbo Li. MAST-NER: A Low-Resource Named Entity Recognition Method based on Trigger Pool.

- Ming Lian and Jing Liu. A Single Pollutant Prediction Approach by Fusing MLSTM and CNN.
- Xin Qi, Langzhou He, Zheng Luo, Zhanwei Du, Jiabin Wang and Xianghua Li. A Multi-objective Evolutionary Algorithm Based on Multi-layer Network Reduction for Community Detection.
- Shuai Xu, Zehen Zhong, Yikai Luo and Bing Shi. A Vehicle Value based Ride-Hailing Order Matching and Dispatching Algorithm.
- Mingzhi Dai, Xiang Feng, Huiqun Yu and Weibin Guo. A Novel Spectral Ensemble Clustering Algorithm Based on Social Group Migratory Behavior and Emotional preference.

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### **KSEM Volume 3 – Session 4**

*Aug. 7th, 2022, 11:30, Room C*

*Online Session*

- Xiaoxiao Zhou, Weina Niu, Xiaosong Zhang, Ruidong Chen and Yan Wang. A Fine-Grained Approach for Vulnerabilities Discovery using Augmented Vulnerability Signatures.
- Yeqing Qiu, Chenyu Huang, Jianzong Wang, Zhangcheng Huang and Jing Xiao. A Privacy-preserving Sub-graph Level Graph Neural Network via Differential Privacy.
- Bing Shi, Xizi Huang and Zhi Cao. An Incentive-Compatible and Efficient Mechanism for Matching and Pricing in Ride-sharing.
- Weiran Liu, Liang Zhang and Wei Ren. A Semantic Link Based Cyber Community Discovery Model on Social Network.
- Weipeng Cao, Qiang Wang, Jiyong Zhang, Xingjian Zhang and Meikang Qiu. A Novel RVFL-based Algorithm Selection Approach for Software Model Checking.
- Tong Fang, Baoshuai Du, Yunjia Xue, Guang Yang and Jingbo Zhao. A Lightweight Target Detection Algorithm Based on Improved MobileNetv3-YOLOv3.

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### **KSEM Volume 3 – Session 5**

*Aug. 7th, 2022, 13:30, Room C*

*Online Session*

- Fan Fei, Xingyu Wu and Shenken Lin. Study on Chinese Named Entity Recognition Based on Dynamic Fusion and Adversarial Training.
- Yifan Cao, Ying Lin, Shengfu Ning, Huan Pi, Junyuan Zhang and Jianpeng Hu. GAN-Based Fusion Adversarial Training.
- Dingling Su and Zehui Qu. Detection DDoS of attacks based on federated learning with Digital Twin Network.
- Zechen Wang, Binbin Li and Yong Wang. Event Detection based on Multilingual Information Attention and Semantic Dependency Graph.
- Hammouda Nourelhouda, Mariem Mahfoudh and Mohamed Cherif. Semantic annotation of videos based on Mask RCNN for a study of animal behavior.
- Xingjian Xu, Fang Liu and Fanjun Meng. Named Entity Recognition in Biology Literature Based on Unsupervised Domain Adaptation Method.

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### **KSEM Volume 3 – Session 6**

*Aug. 7th, 2022, 14:30, Room C*

*Online Session*

- Li Yao, Naigang Zhang, Ao Gao and Yan Wan. Research on Fabric Defect Detection Technology Based on EDSR and Improved Faster RCNN.
- Yi Xu, Leilei Sun, Bowen Du and Liangzhe Han. Spatial Semantic Learning for Travel Time Estimation.
- Jie Yu, Junchen He and Lingyu Xu. Hypergraph-based Academic Paper Recommendation.
- Mei Guo, Jiayu Zhang, Mei Li, Yaojun Geng, Yongliang Zhang and Nan Geng. Chinese relation extraction of apple diseases and pests based on BERT and entity information.
- Dawei Li, Yangkun Ren, Di Liu, Zhenyu Guan, Qianyun Zhang, Yanzhao Wang and Jianwei Liu. PUF-based Intellectual Property Protection for CNN Model.

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### **KSEM Volume 3 – Session 7**

*Aug. 8th, 2022, 9:00, Room C*

*Online Session*

- Ganghong Huang, Jiang Zhong, Chen Wang, Qizhu Dai and Rongzhen Li. Self-Training Using Adaptive Label Selection for Few-Shot NER.
- Xiangyang Liu, Weidong He, Tong Xu and Enhong Chen. Low-Quality DanMu Detection via Eye-tracking Patterns.
- Zhengyang Ai, Guangjun Wu and Binbin Li. Fourier Enhanced MLP with Adaptive Model Pruning for Efficient Federated Recommendation.
- Joojo Walker, Ting Zhong, Fengli Zhang, Qiang Gao and Fan Zhou. Recommendation via Collaborative Diffusion Generative Model.
- Ziyuan Zhang, Meiqi Wang, Wencheng Chen, Han Qiu, Meikang Qiu. Mitigating Targeted Bit-flip Attacks via Data Augmentation: An Empirical Study.
- Shudong Zhang, Haichang Gao, Yunyi Zhou and Zihui Wu. Consistency Regularization Helps Mitigate Robust Overfitting in Adversarial Training.

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### **KSEM Volume 3 – Session 8**





Aug. 8th, 2022, 10:00, Room C

Online Session

- Omar Salem, Haowen Liu, Feng Liu, Yi-Ping Phoebe Chen and Xi Chen. Fuzzy information measures feature selection using descriptive statistics data.
- Xiangchong Cui, Ting Bai, Bin Wu and Xinkai Meng. Learning Advisor-Advisee Relationship from Multiplex Network Structure.
- Taozhang Zhang, Shaojing Yang, Anxiao Song, Guangxia Li and Xuewen Dong. Dual Adversarial Federated Learning for Non-IID Data.
- Songlak Sakulwichitsintu. Empowering Graduate Students' Service Delivery by Using an Agile Chatbot: A Conceptual Framework.
- Weronika T. Adrian, Julia Ignacyk, Krzysztof Kluza and Antoni Ligeza. Modeling Empathy Episodes with ARD and DMN.

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### **KSEM Volume 3 – Session 9**

Aug. 8th, 2022, 11:20, Room C

Online Session

- Chenlin Wang, Yonghao Yu, Ao Pu, Yuhan Zhang, Fan Shi and Cheng Huang. Spotlight on Video Piracy Websites: Familial Analysis Based on Multifaceted Features.
- Qiang Wang, Hongbin He, Hongyu Kuang and Weipeng Cao. Automated Reliability Analysis of Redundancy Architectures Using Statistical Model Checking.
- Qin Yang, Zheng Linjiang, Chen Li and Liu Weining. Identifying taxi commuting traffic analysis zones using massive GPS data.
- Kieran Greer and Yaxin Bi. Energy Consumption Prediction Using Bands-based Data Analytics.
- Xiangyu Gao and Meikang Qiu. Energy-Based Learning for Preventing Backdoor Attack.

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### **KSEM Volume 3 – Session 10**

Aug. 8th, 2022, 13:30, Room C

Online Session

- Wenyuan Zhang, Peng Li, Guangjun Wu and Jun Li. Privacy-Preserving Deep Learning in Internet of Healthcare Things with Dynamic Blockchain-Based Incentive.
- Kun Peng, Nannan Sun, Jiahao Cao, Rui Liu, Jiaqian Ren and Lie Jiang. Prompt as a Knowledge Probe for Chinese Spelling Check.
- Abir Zawali and Imen Boukhris. System Level Recommender System for Academic Venue Personalization: Multi vs. Linked Domain.
- Wei Hu, Kejie Hu, Fang Liu and Jie Fan. Hardware and Software Co-optimization for Windows Attention.
- Wei Hu, Jie Fan, Fang Liu and Kejie Hu. Hardware and Software Co-Design for soft switch in ViT variants processing unit.

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### **KSEM Volume 3 – Session 11**

Aug. 8th, 2022, 14:30, Room C

Online Session

- Hang Jiang, Song Wu, Dehong He and Guoqiang Xiao. Natural Image Matting with Low-level Feature Attention Guidance.
- Lijiao Qin and Defu Lian. An Adversarial Cycle-Consistent Autoencoder for Category-Aware Out-of-Town Recommendation.
- Peng Shuang, Peng Xianshu, Dai Zhuochen and Tao Li. HLB-ConvMLP- Rapid Identification of Citrus HLB Disease.
- Wei Hu, Dian Xu, Fang Liu and Zimeng Fan. Software and Hardware Fusion Multi-Head Attention.
- Feihu Huang, Min Jiang, Fang Liu, Dian Xu, Zimeng Fan, and Yonghao Wang. Classification of Heads in Multi-head Attention Mechanisms.