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| **Day 1, July 11, 2022 (Main Conference) (Golden Cassia)** | | | |
| **Time** | **Event** | | **Chair** |
| **09:00**  **-**  **09:15** | **Opening ceremony**  **Welcoming speech: Binxing Fang, Academician, Chinese Academy of Engineering**  **Welcome speech: Ya Zhou** | | **Yanchun Zhang** |
| **09:15**  **-**  **10:00** | **Keynote I: Science, Technology, Engineering, Industry**  **Speaker: Shanlin Yang, Academician, Chinese Academy of Engineering** | | **Yanchun Zhang** |
| **10:00**  **-**  **10:30** | **Invited Talk I: Tackling Unknown Future: Open-World Domain Adaptive Graph Learning**  **Speaker: Xingquan Zhu** | |
| **10:30**  **-**  **10:50** | **Group photo & Coffee Break** | | |
| **10:50**  **-**  **11:35** | **Keynote II: The Construction of Science and Technology Industry System of Information System**  **Speaker: Jun Lu, Academician, Chinese Academy of Engineering** | | **Jian Weng** |
| **11:35**  **-**  **12:05** | **Invited Talk II: Multi-Granularity Cognitive Computing for Network Security**  **Speaker: Guoyin Wang** | |
| **12:05**  **-**  **14:00** | **Lunch Break** | | |
| **14:00**  **-**  **14:45** | **Keynote III: Human-centred Perspectives for Data Quality Discovery**  **Speaker: Shazia Sadiq** | **Hongwei Li** | |
| **14:45**  **-**  **15:15** | **nvited Talk III: Real-world stream data analysis: challenges and opportunities**  **Speaker: Toshiyuki Amagasa** |
| **15:15**  **-**  **15:35** | **Coffee break** | | |
| **15:35**  **-**  **16:20** | **Keynote IV: Data Management for Effective and Efficient Deep Learning**  **Speaker: Lei Chen** | | **Shuyuan Jin** |
| **16:20**  **-**  **16:50** | **Invited Talk IV: Challenges of Satellite Internet Security**  **Speaker: Xiaosong Zhang** | |
| **17:50**  **-18:00** | **Awarding Ceremony**  **Best Paper Awards** | | **Yong Ding** |
| **18:00**  **-**  **20:00** | **Banquet & Performances (Duxiu Room)** | |

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| **Day 2, July 12, 2022 (Sessions)** | | | |
| **09:00**  **-**  **10:30** | **Session 1:**  **Situation Awareness (Guihu Room)** | **Session 2:**  **Cyberspace security I**  **(Ronghu Room)** | **Session 3:**  **Cyberspace security II**  **(Shanhu room)** |
| **10:30**  **-**  **10:50** | **Coffee Break** | | |
| **10:50**  **-**  **12:20** | **Session 4:**  **Cyberspace Security III (Guihu Room)** | **Session 5:**  **Deep Learning Algorithms and Applications I**  **(Ronghu Room)** | **Session 6:**  **Deep Learning Algorithms and Applications II**  **(Shanhu room)** |
| **12:20**  **-**  **14:20** | **Lunch Break** | | |
| **14:20**  **-**  **15:50** | **Session 7:**  **Network Attack and Defense**  **(Guihu Room)** | **Session 8:**  **Intelligent System**  **(Ronghu Room)** | **Session 9:**  **Data Mining I**  **(Shanhu room)** |
| **15:50**  **-**  **16:20** | **Coffee Break** | | |
| **16:20**  **-**  **18:00** | **Session 10:**  **Data Mining II**  **(Guihu Room)** | **Session 11:**  **Data Security and Privacy**  **(Ronghu Room)** | **Session :**  **(Shanhu room)** |
| **18:00**  **-**  **21:00** | **Dinner** | | |

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| **Day 3, July 13, 2022 (Workshops)** | | | |
| **09:00**  **-**  **10:20** | **MDATA**  **(Guihu Room)** | **VAAL**  **(Ronghu Room)** | **NSAC**  **(Shanhu room)** |
| **10:20**  **-**  **10:50** | **Coffee Break** | | |
| **10:50**  **-**  **12:00** | **MDATA**  **(Guihu Room)** | **VAAL**  **(Ronghu Room)** | **NSAC**  **(Shanhu room)** |
| **12:00**  **-**  **14:00** | **Lunch Break** | | |
| **14:00**  **-**  **15:40** | **BDBA**  **(Guihu Room)** | **SAACS**  **(Ronghu Room)** | **CCIS**  **(Shanhu room)** |
| **15:40**  **-**  **16:10** | **Coffee Break** | | |
| **16:10**  **-**  **18:10** | **DHCA**  **(Guihu Room)** | **BDMC**  **(Ronghu Room)** | **DGPP**  **(Shanhu room)** |
| **18:10**  **-**  **21:00** | **Dinner** | | |

**Main Technical Program**

SESSION 1: **Situation Awareness**

July 12th, 09:00-10:30，Guihu Room

* **A Multi-step Attack Detection Framework for the Power System Network**

Ju Yang; Liang Zhou; Le Wang; Shudong Li; Ziqing Lin; Zhaoquan Gu

* **A Novel Network Security Situation Awareness Model for Advanced Persistent Threat**

Kai Chen; Jingxian Zhu; Lansheng Han; Shenghui Li; Pengyi Gao

* **NiNSRAPM: An Ensemble Learning Based Non-intrusive Network Security Risk Assessment Prediction Model**

Junzheng Yang; Feng Liu; Lu-lu Liang; Yuan-jie Zhao; Jiayin Qi

* **Shock Trap: An active defense architecture based on trap vulnerabilities**

Quan Hong; Yang Zhao; Jian Chang; Yuxin Du; Jun Li; Lidong Zhai

SESSION 2: **Cyberspace Security I**

July 12th, 09:00-10:30，Ronghu Room

* Capability-based Component Security Mechanism for Microkernel OS

Jiajia Yi; Lirong Chen; Kun Xiao

* A Survey of Obfuscation and Deobfuscation Techniques in Android Code Protection

Runsheng Guo; Man Zhang; Hui Lu; Qichao Liu; Ning Hu

* A Survey on Data Poisoning Attacks and Defenses

Jiaxin Fan

* A Model Checker for MDS Attacks

Qian Ke; Haixia Wang; Chunlu Wang; Zihan Xu; Yongqiang Lyu; Dongsheng Wang

SESSION 3: **Cyberspace security II**

July 12th, 09:00-10:30，Shanhu room

* MANAGE: A Novel Malware Evolution Model based on Digital Genes

Yu Zhang

* Automated Crash Analysis and Exploit Generation with Extendable Exploit Model

Zhehui Liu; Zhongru Wang; Yuntao Zhang; Tong Liu; Binxing Fang; Zhengyuan Pang

* WREP: A lightweight event real-time processing engine for IoT

Lei Feng; Yuanfei Zhang; Zhiqiang Hao; Chonghua Wang

* A Hierarchical Terminal Recognition Approach based on Network Traffic Analysis

Lingzi Kong; Daoqi Han; Junmei Ding; Mingrui Fan; Yueming Lu

SESSION 4: **Cyberspace security III**

July 12th, 10:50-12:20，Guihu Room

* A virtualization-based security architecture for industrial control systems

Yuqiang Zhang; Zhiqiang Hao; JiaWei Luo; Ning Hu; Chonghua Wang

* Research and Application of Intelligent Vehicle Cybersecurity Threat Model

Haitao Zhang; Lei Luo; Ruikun Li; Jiajia Yi; Yun Li; Lirong Chen

* SMRT: An Effective Malicious Node Resistance Design for Mixnets

Jincai Zou; Zhihan Tan; Yaya Huang; Yixing Chen; Yuqiang Zhang; Ning Hu

* Stealth: A Heterogeneous Covert Access Channel for Mix-net

Yixing Chen; Yuqiang Zhang; Jincai Zou; Zhihan Tan; Yaya Huang; Ning Hu

**SESSION 5: Deep Learning Algorithms and Applications I**

July 12th, 10:50-12:20，Ronghu Room

* An asterisk-shaped patch attack for object detection

Fashan Dong; Binyue Deng; Haiyang Yu; Wenrong Xie; Huawei Xu; Zhaoquan Gu

* Multiple Sequential Network Attacks Detection Based on DTW-HMM

Haitian Liu; Rong Jiang; Bin Zhou; Xing Rong; Juan Li; Aiping Li

* Knowledge Graph of Artificial Intelligence in Medicine: A Scientometric Analysis

Jinlei Liu; Wenchao Dan; Nuo Cheng; Wenjing Lian; Peirong Qu; Hui Zhang; Yuling Zha; Jie Wang

* End-to-end training image-text matching network

Depeng Wang; Hong Chen; Yibo Sun

**SESSION 6: Deep Learning Algorithms and Applications II**

July 12th, 10:50-12:20，Shanhu room

* Topic Modeling for Short Texts Via Dual View Collaborate Optimization

Wei Liu; Yutao Huang; Yibing Guo; Ye Wang; Binxing Fang; Qing Liao

* NMI-FGSM-tri: An efficient and targeted method for generating adversarial examples in speaker recognition

Junjian Zhang; Hao Tan; Binyue Deng; Jiacen Hu; Dong Zhu; Linyi Huang; Zhaoquan Gu

* An Optimized Transaction Processing Scheme for Highly Contented E-commerce Workloads

Chunxi Zhang

* TFHM: A Traffic Feature Hiding Scheme Based on Generative Adversarial Networks

Yaya Huang; Yixing Chen; Yuqiang Zhang; Jincai Zou; Zhihan Tan; Ning Hu

SESSION 7: **Network Attack and Defense**

July 12th, 14:20-15:50，Guihu Room

* Anomaly Detection from Log Data Sequences with Perturbations

Yixiang Chen; Linhao Ye; Yufeng Ye; Qingfeng Tan; Peng Zhang

* A DNS-based Data Exfiltration Traffic Detection Method for Unknown Samples

Ruiling Gan; Jiawen Diao; Xiang Cui; Shouyou Song

* A method of network traffic anomaly detection based on Packet Window Transformer

Wenjie Mi

* Light-weight Unsupervised Anomaly Detection for Encrypted Malware Traffic

Shangbin Han; Qianhong Wu; Han Zhang; Bo Qin

SESSION 8: **Intelligent System**

July 12th, 14:20-15:50，Ronghu Room

* Research on industrial Robot system security based on Industrial Internet Platform

Gong Xiao

* Privacy Protection Management Model for Internet of Things Data

Yundan Yang; Fenghui Duan; Maoshen Zhang; Junjie Liu; Jin Li; Yueming Lu

* Optimizing Diffusion Layer with AVX Shuffling: A Study on SKINNY

Jinhai Chen; Zheng Gong; Yufeng Tang; Yupeng Zhang; Bin Li

* Automated Vulnerability Discovery System Based on Hybrid Execution

Tong Liu; Zhongru Wang; Yuntao Zhang; Zhehui Liu; Binxing Fang; Zhengyuan Pang

SESSION 9: Data Mining I

July 12th, 14:20-15:50，Shanhu room

* A Method Combining Text Classification and Keyword Recognition to Improve Long Text Information Mining

Lang Liu

* Defense Against Query-Based Black-Box Attack With Small Gaussian-Noise

Ziqi Zhu; Bin Zhu; Huan Zhang; Yu Geng; Le Wang; Denghui Zhang; Zhaoquan Gu

* Video adaptive steganography algorithm based on motion vector

Yangping Lin; Jia Liu; Pei Chen; Dong Chen; Zichao Song; Mingshu Zhang

* Exploring Users’ Temporal Characteristics of “Purchase and Comment” Behaviors based on Human Dynamics

Liang Wu; Fangming Ruan; Liangqiang Li; Yidan Li

SESSION 10: Data Mining II

July 12th, 16:20-18:00，Guilu Room

* A novel Tri-training algorithm based on Evidence Theory

Hongshun He; Zhipeng Zhang; Lei Yang; Yang Li; Jiakang Shi

* Anchor graph semi-supervised learning method based on Evidence Theory

Hongshun He; Wei Yu; Lei Yang; Yang Li; Luyu Sun

* The Power Analysis Based on Mean–Ridge Regression

Xiaonian Wu

* FAVT: A Feature-Anchored Video Data Trading Mechanism

JiaShun Zhou; Na Wang; Aodi Liu; Xuehui Du

SESSION 11: Data Security and Privacy

July 12th, 16:20-18:00，Ronghu Room

* A Data Encoding Method for Multipath Anonymous Transmission

Zhihan Tan; Yaya Huang; Yixing Chen; Yuqiang Zhang; Jincai Zou; Ning Hu

* Research on One-way Data Transmission Technology Based on RDMA

Yuanpeng Yang; Hongbo Wang; Xiaofeng Wang; Yuan Liu

* Research on the Characteristics and Security Risks of the Internet of Vehicles Data

Jun Sun; Dong Liu; Yang Liu; Chuang Li; Yumeng Ma

* An efficient anonymous authentication and supervision system based on blockchain

Weiyou Liang; Yujue Wang; Yong Ding; Haibin Zheng; Hai Liang; Huiyong Wang

**Workshops**

**Multi-dimensional Data Association and inTelligent Analysis (MDATA 2022)**

**July 13th, 09:00-10:20,** **10:20-12:00 (Guihu Room)**

* Hybrid butterfly optimization algorithm–based support vector machine for botnet command-and-control channel detection

Kai Chen; Jietong Su; Lansheng Han; Shenghui Li; Pengyi Gao

* Data traceability scheme of industrial control system based on digital watermark

Jun Sun; Yang Li; Ge Zhang; Liangyu Dong; Zitao Yang; Mufeng Wang; Jiahe Cai

* A Survey of Obfuscation and Deobfuscation Techniques in Android Code Protection

Runsheng Guo; Qichao Liu; Man Zhang; Ning Hu; Hui Lu

* Design and Implementation of Network Traffic Analysis System for Power Grid Metering System

Tao Liu; Honghao Liang; Xiaowei Chen; Zimeng Li; Lingzi Kong; Jin Li; Yueming Lu

* Modeling Unseen Entities from a Semantic Evidence View in Temporal Knowledge Graphs

Chen Guo; Yang Lin; Hao Chen; Haiyang Yu; Chengwei Zhu; Jing Qiu

* A Survey on Threat Hunting: Approaches and Applications

Lei Chen; Rong Jiang; Changjian Lin; Aiping Li

* SpeechHide: A Hybrid Privacy-preserving Mechanism for Speech Content and Voiceprint in Speech Data Sharing

Yu Hu; Ran Li; Simin Wang; Fuqiang Tao; Zhe Sun

**Vulnerability Analysis and Adversarial Learning (VAAL 2022)**

**July 13th, 09:00-10:20,** **10:20-12:00 (Ronghu Room)**

* Lisp-TBCNN: A Malicious Code Detection System Based on Machine Learning

Huanyu Chi; Zekun Fei; Zhi Wang; Li Gu

* AISLE: Self-supervised Representation Learning for the Investigation of Advanced Persistent Threat

Zian Jia; Xiaosu Wang; Yun Xiong; Yao Zhang; Jinjing Zhao

* Fuzzing DBMS via Sequence Model

Yabin Li; Yuanping Nie; Xiaohui Kuang

* A Survey of Human-machine Collaboration in Fuzzing

Qian Yan; Minhuan Huang; Huayang Cao

* An Automatic Code Generation Method Based on Sequence Generative Adversarial Network

Hanwen Sun; Yuanping Nie; Xiang Li; Minhuan Huang; Jianwen Tian; Wei Kong

* NAFuzzer: Augmenting Network Protocol Fuzzers via Automatic Template and Seed Generation

Ke Yan; Bo Yu; Yong Tang; Xiangdong Kong; Chen Chen; Jin Lei

* DeepCov: Coverage Guided Deep Learning Framework Fuzzing

Hongfang Yu; Jiawei Wu; Senyi Li; Junqiang Li; Long Luo; Gang Sun

**Network Security Analysis for Cyberspace (NSAC 2022)**

**July 13th, 09:00-10:20,** **10:20-12:00 (Shanhu room)**

* **Network Security Intrusion Detection and Mass Alarms Under Cluster Computing Platform**

Feng Li; Fei Shu; Mingxuan Li; Bin Wang

* Cross-Security Domain Dynamic Orchestration Algorithm of Network Security Functions

Weidong Xiao; Xu Zhang; Dongbin Wang

* AGDB: A Dictionary-based Malicious Domain Detection Method based on Representation Fusion

You Zhai; Hao Dong; Zhoujun Li; Liqun Yang; Longtao He

* A Hybrid Routing Mutation Mechanism based on Mutation Cost and Resource Trustworthiness in Network Moving Target Defense

Kun Guo; Yibo Gao; Dongbin Wang; Hui Zhi; Tao Zhang; Yueming Lu

* FLYFDetect: A Smart Home Privacy Protection Framework via Federated Learning

Bing Chen; Yaping Liu; Shuo Zhang; Jie Chen; Zhiyu Han

* Security Evaluation Model of Blockchain System Based on Combination Weighting and Grey Clustering

Qi Jiahao; Ziyu Guo; Yueming Lu; Jiaqi Gao; Yihong Guo; Fanyao Meng

* TLD-WF: Surfing Freely Under Website Fingerprinting Attacks

Ling Liu; Xin Liu; Yue Zhao; Ning Hu

**Big Data and Business Analytics (BDBA 2022)**

**July 13th, 14:00-15:40 (Guihu Room)**

* MASCA：A Multimodal Abstractive Summarization Model Based on Core Words Fusion Attention

Xiaohan Yin; Lijuan Sun; Jingchen Wu; Xu Wu; Lirong Qiu

* TAFM: Topic-Attention FM-encoder for Text Generation

Dongye He; Xu Wu; Lijuan Sun; Jingchen Wu; Lirong Qiu

* Adversarial Example Attacks against ASR Systems: An Overview

Xiao Zhang; Hao Tan; Zhaoquan Gu

* Prediction of Real Popularity based on Sample Debias

Liang Li; Liqun Gao; Feng Xie; Bin Zhou

* Leveraging Multi-aspect Semantics for Conversation Structure Modeling

Tuwen Guo; Xi Zhang; Lirong Qiu

**Situation Awareness Analysis for Cyberspace Security (SAACS 2022)**

**July 13th, 14:00-15:40 (Ronghu Room)**

* A combined-CNN model of TLS Traffic Recognition and Classification

Yunfan Tian; Dongxin Liu; Laifu Wang; Bowen Hu

* A Review of Provenance Graph based APT Attack Detection:Applications and Developments

Yang Lv; Shaona Qin; Zifeng Zhu; Zhuocheng Yu; Shudong Li; Weihong Han

* A Novel Framework For Malicious Encrypted Traffic Classification On Host Level And Flow Level

Haitao Zhang; Lei Luo; Yun Li; Lirong Chen; Xiaobo Wu

* A Review of Attribution Technical for APT Attacks

Yangyang Mei; Weihong Han; Shudong Li; Xiaobo Wu; Kaihan Lin; Yulu Qi

* A SQL Blind Injection Method Based on Gated Recurrent Neural Network

Jiahui Zheng; Junjian Li; Chao Li; Ran Li

**Cybersecurity for Critical Infrastructure Systems (CCIS 2022)**

**July 13th, 14:00-15:40 (Shanhu room)**

* A timestamp-based covert data transmission method in Industrial Control System

Jie Lu; Yong Ding; Zhenyu Li; Chunhui Wang

* Research on Lightweight Blockchain Technology Based on Edge Computing

Maosheng Zhang; Ruohan Cao; Fenghui Duan; Yundan Yang; Yueming Lu; Man Zhang; Xu Lu

* Access Control Mechanism for Edge Nodes

Fenghui Duan; Yundan Yang; Maosheng Zhang; Songqi Wu; Yueming Lu; Man Zhang; Xu Lu

* New Integral distinguishers for I - PresentTM, TANGRAM and CHAM

Li Lingchen; Qiu Xueying; Zhu Chenghui; Xiaonian Wu

**Digital Humanities and Computer Arts (DHCA 2022)**

**July 13th, 16:10-18:10 (Guihu Room)**

* Display Design Based on Virtual Reality Technology VR-Platform Platform

Junzhu Zhang; Yugao Zheng

* Research on Multi-Model Fusion for Named Entity Recognition Based on Loop Parameter Sharing Transfer Learning

Haoran Ma; Zhaoyun Ding

* Classification of Diabetic Retinopathy Based on B-ResNet

Ying Zhang

* A Survey on Knowledge Graph Embedding

Qi Yan; Jiaxin Fan; Mohan Li; Guanqun Qu; Yang Xiao

* Image Art Innovation based on Extended Reality Technology

Feng Ye

* Application of Virtual Simulation in Digital Exhibition and Performance

Ling Zou; Jing Li

**Big Data Mining for Cyberspace (BDMC 2022)**

**July 13th, 16:10-18:10 (Ronghu Room)**

* SATMask: Spatial Attention Transform Mask for Dense Instance Segmentation

Quanzhong Mao; Lijuan Sun; Jingchen Wu; Xu Wu; Lirong Qiu

* A Lightweight Authentication Protocol For IoT based on ECC scheme

Zhiyu Han; Yaping Liu; Shuo Zhang; Jie Chen; Bing Chen

* The final security problem in IOT：Don’t count on the canary!

Qian Zhou; Hua Dai; Liang Liu; Jie Chen; Kai Shi; Hong Jiang

* Industrial Defect Detection Through Computer Vision: A Survey

Yunjie Tang; Kai Sun; Danhuai Zhao; Yan Lu; Jiaju Jiang; Hong Chen

* VCFN-Video Computing Force Network

Yichuan Wu; Meng Guo; Lei Yang; Wei Yu

* 10 Gigabit industrial thermal data acquisition and storage solution based on software-defined network

Ge Zhang

**Data Governance and Privacy Protection （DGPP 2022）**

**July 13th, 16:10-18:10 (Shanhu room)**

* **Time-Lock Encryption for Multiple Consecutive Periods and its Application**

Yuewu Lian; Haitao Zhan; Peiheng Zhang; Mingwu Zhang

* **Secure outsourced VANET data in clouds with designated supervisor**

Meng Zhao; Yong Ding; Tong Zhang; Xiaochun Zhou

* **Information dissemination model of recommendation platform based on network community**

Wu R Ming

* **A Novel Mobile Instant Messaging System**

Yichuan Wu; Jianping Zheng; Meng Guo

* **VCFN-Video Computing Force Network**

Yichuan Wu; Meng Guo; Lei Yang; Wei Yu

* **DESEND：A Fast Device Event Signature Extraction And Detection Method for Smart Home**

Jie Chen; Yaping Liu; Shuo Zhang