



IEEE CyberSciTech / PICom / DASC / CBDCom 2022

Calabria, Italy

Program Agenda

Program at a Glance

D1 Day 1 - Sept 12				
Track	T1	T2	T3	T4
	8:30-9:00	Opening / Registration		
	9:00-10:00	Keynote 1 - Rajkumar Buyya		
	10:00-10:30	Coffee Break		
S1	10:30-11:45	D1S1T1 (CST 1)	D1S1T2 (PICOM 1)	D1S1T3 (DASC 1)
S2	11:45-13:00	D1S2T1 (CST 2)	D1S2T2 (PICOM 2)	D1S2T3 (DASC 2)
	13:00-14:30	Lunch		
	14:30-15:30	Keynote 2 - Mengchu Zhou		
S3	15:30-16:30	D1S3T1 (CST 3)	D1S3T2 (CBDCOM 1)	D1S3T4 (CST 4)
	16:30-17:00	Coffee Break		
S4	17:00-18:00	D1S4T1 (CST 5)	D1S4T2 (CBDCOM 2)	
	19:00-20:00	Welcome Reception		

D3 Day 3 - Sept 14				
Track	T1	T2	T3	T4
	8:30-9:00	Registration		
	9:00-10:00	Keynote 4 - Maria Pia Fanti		
	10:00-10:30	Coffee Break		
S1	10:30-11:45	D3S1T1 (CST 13)	D3S1T2 (CST-SS 5)	D3S1T3 (CST 6)
S2	11:45-13:00	D3S2T1 (CST 14)	D3S2T2 (CST-SS 6)	D3S2T3 (CST 7)
	13:00-14:30	Lunch		
	14:30-15:30	Keynote 5 - Andrea Omicini		
	15:30-16:00	Coffee Break		
	16:00-night	Social Event		

D2 Day 2 - Sept 13				
Track	T1	T2	T3	T4
	8:30-9:00	Registration		
	9:00-10:00	Keynote 3 - Mauro Conti		
	10:00-10:30	Coffee Break		
S1	10:30-11:45	D2S1T1 (DASC 5)	D2S1T2 (PICOM 3)	D2S1T3 (DASC 3)
S2	11:45-13:00	D2S2T1 (DASC 6)	D2S2T2 (PICOM 4)	D2S2T3 (DASC 4)
	13:00-14:30	Lunch		
	14:30-15:30	Round Table (Moderator: Giancarlo Fortino) Networked Cyber-Physical Systems 5.0 (Factories of the Future)		
S3	15:30-16:30	D2S3T1 (CST 8)	D2S3T2 (CBDCOM 3)	D2S3T3 (PICOM 5)
	16:30-17:00	Coffee Break		
S4	17:00-18:00	D2S4T1 (CST 10)	D2S4T2 (CBDCOM 4)	D2S4T3 (CST 11)
				D2S4T4 (CST 12)

D4 Day 4 - Sept 15				
Track	T1	T2	T3	T4
	8:30-9:00	Registration		
	9:00-10:00	Keynote 6 - Lorenzo Masia		
	10:00-10:30	Coffee Break		
S1	10:30-11:45	D4S1T1 (CST 15)	D4S1T2 (CST-SS 7)	D4S1T3 (DASC 7)
S2	11:45-13:00	D4S2T1 (CST 16)	D4S2T2 (CST-SS 8)	D4S2T3 (DASC 8)
	13:00-13:30	Conference Closing Session		

The 7th IEEE Cyber Science and Technology Congress (CyberSciTech 2022)

D1S1T1 - CST1

Main Track - Session 1

Chair: Giancarlo Fortino

- 21 Ajay D M. Privacy Preservation using Federated Learning and Homomorphic Encryption: A Study
- 26 Cheng Miao, Pan Wang, Zixuan Wang and Zeyi Li. A Trusted Classification Method of Encrypted Traffic Based on Attention Mechanism
- 29 Yueyu Dong, Fei Dai and Mingming Qin. A Privacy-Preserving Deep Learning Scheme for Edge-enhanced Smart Homes
- 31 Xiansheng Wang and Ke Yan. Fault Detection and Diagnosis of HVAC System Based on Federated Learning
- 36 Ziyao Wang and Jie Xu. SSD Failure Prediction Based on Classification Models and Data Engineering

D1S2T1 - CST2

Main Track - Session 2

Chair: Malik Al-Essa

- 61 Joonatan Ovaska, Karo Saharinen and Tuomo Sipola. Analysing Theses of Cyber Security Higher Education
- 73 Rūta Pirta-Dreimane, Agnė Brilingaitė, Evita Roponen and Karen Parish. Multi-dimensional Cybersecurity Education Design: A Case Study
- 88 Dehua Zhou, Yingwei Yu, Di Wu, Qingqing Gan, Zexiao Chen and Botong Xu. SecureAstraea: A Self-balancing Privacy-preserving Federated Learning Framework
- 158 Malik Al-Essa, Giuseppina Andresini, Annalisa Appice and Donato Malerba. An XAI-based adversarial training approach for cyber-threat detection
- 114 Youzhi Zhang, Sayak Chakrabarty, Rui Liu, Andrea Pugliese and V.S. Subrahmanian. A New Dynamically Changing Attack on Review Fraud Systems and a Dynamically Changing Ensemble Defense

D1S1T4 - CST-SS 1

Special Session on Computing and Applications for Cyber Internet of Things

Chair: Raffaele Gravina

- 189 Lin Yang, Can Deng, Zhilong Bie, Yu Chen, Xiuwen Fu and Giancarlo Fortino. A Framework for Digital Crop Growing Modeling based on Agricultural Internet of Things
- 218 Yu Su. UAV-based 5G Air-to-Ground Integrated Wireless Network Coverage
- 219 Zhong Wang, Zhiwen Wen, Qianxin Xia and Weijun Cai. Deep Reinforcement Learning Based Multi-UUV Cooperative Control for Target Capturing
- 220 Zheng Liu, Sihong Wu, Taile Chen and Yongxin Liu. Underwater Path Planning of UUV Based on UDWA
- 221 Yongxin Liu, Zheng Liu, Sihong Wu and Taile Chen. Active acoustic self guided torpedo parallel heading firing based on favorable advance angle

D1S2T4 - CST-SS 2

The International Workshop on Adaptive Cyber Learning 2022

Chair: Claudio Savaglio

- Yang Yan, Hui Wang, Guangjie Liu and Wenbo Huang. SPOC Project Teaching Research
8 based on STEAM Education Concept —— Takes the secondary vocational school “Data
Structure” course as an example
- 17 Wenbo Huang, Feng Guo and Yang Yan. Retinal Vessel Segmentation Algorithm Based
on Attention Mechanism
- Stefanie Amiruzzaman and Md Amiruzzaman. Explore the Relationships Between
28 Students’ Academic Performance, Use of Twitter, and Academic Majors using
Hierarchical Linear Modeling
- 129 I-Chin N. Chiang and Tony C. T. Kuo. An exploratory research of of tertiary English course
performance in Taiwan from the perspectives of ACE accreditation for e-learning courses
- 168 Jiaqi Wang, Jian Chen and Qun Jin. i-Comments: On-screen Individualized Comments
for Online Learning Support

D1S3T1 - CST 3

Main Track - Session 3

Chair: Lorenzo Carnevale

- 105 Kai Peng, Haoqi Zhang, Bohai Zhao and Peichen Liu. Edge-Cloud Collaborative
Computation Offloading for Federated Learning in Smart City
- Lorenzo Carnevale, Alessandro Ortis, Giancarlo Fortino, Sebastiano Battiato and
44 Massimo Villari. From Cloud-Edge to Edge-Edge Continuum: the Swarm-Based Edge
Computing Systems
- 107 Christian Sicari, Lorenzo Carnevale, Antonino Galletta and Massimo Villari. OpenWolf: A
Serverless Workflow Engine for Native Cloud-Edge Continuum
- 141 Bin Chen, Huan Xu and Fei Dai. Modeling Interactions among Cyber-Physical Services

D1S3T4 - CST4

Main Track - Session 4

Chair: Michael Zipperle

- Michael Zipperle, Florian Gottwalt, Yu Zhang, Omar Hussain, Elizabeth Chang and
77 Tharam Dillon. A Conceptual Framework for Automated Rule Generation in Provenance-
based Intrusion Detection Systems
- Oscar Famous Darteh, Qi Liu, Xiaodong Liu, Ibrahima Bah, Francis Mawuli Nakoty and
82 Amevi Acakpovi. Emerging Simulation Frameworks for Analyzing Smart Grid
Cyberattack: A Literature Review
- Dehua Zhou, Zexiao Chen, Di Wu, Yingwei Yu, Qingqing Gan and Botong Xu. HEND-
96 FL:Accurate Federated Learning Using Homomorphic Encryption and a New Distributed
Protocol
- 112 Jieli Jiang, Chao Cui, Boheng Wang, Yan Cui and Li Ma. A Roberts cross operator
combined with mathematical morphology algorithm for fabric defect detection

D1S4T1 - CST5

Main Track - Session 5

Chair: Francesco Pupo

- 164 Zhaoan Dong, Lijun Gao, Yueyang Li, Zili Zhou, Sifeng Wang and Lianyong Qi. A Team Crowdsourcing Method Combining Competition and Collaboration
- 165 Zhaoan Dong, Yueyang Li, Lijun Gao and Zili Zhou. A Crowdsourcing Truth Inference Algorithm Based on Hypergraph Neural Networks
- 166 Yuqing Wang, Yuwen Liu, Yihong Yang, Lingzhen Kong and Ying Miao. A Locality-Sensitive Hashing-based Automatic Group Identification Approach in Group Recommendation
- 183 Ziqi Huang, Tiandong Xi, Marcel Fey and Christian Brecher. AI-Driven Digital Process Twin via Networked Digital Process Chain

D3S1T3 - CST6

Main Track - Session 6

Chair: Antonella Guzzo

- 64 Xinyu Ren and Shaoxin Yuan. GCN-LSTM Combined Model for Urban Link Mean Speed Prediction in the Regional Traffic Network
- 94 Zhiyun Yang, Ru Ji, Qi Liu, Fei Dai, Yiwen Zhang, Quanwang Wu and Xiaodong Liu. An Improved LSTM-based Method Capturing Temporal Correlations and Using Attention Mechanism for Radar Echo Extrapolation
- 100 Jiangyi Hu, Wenqing Yang, Huafei Yang, Shanming Wei and Zhen Sun. Named Entity Recognition Method for Power Equipment Based on BERT-BiLSTM-CRF
- 27 Haowen Yu and Liming Chen. A Joint Loss based Deep Learning Model for Enhanced Image Inpainting
- 30 Hao Zhang and Ke Yan. WT-BiLSTM Based Transfer Learning Method for Solar Irradiance Prediction

D3S2T3 - CST7

Main Track - Session 7

Chair: Qimeng Li

- 38 Jiapeng Li, Hua Huang, Fengtao Hu and Yangding Ou. Classification of Ceramics Based on Improved AlexNet Convolutional Neural Network
- 24 Shaowei Huang, Xiangping Wu, Ke Wang, Xiaopeng Li and Qingqing Gao. Multi-axis Gating MLP with Bidirectional Feature Extraction for Sequence Recommendation
- 40 Jiawei Sun, Hao Wu, Qi Liu, Xiaodong Liu and Jianhao Ma. Dense-FCN: A Deep Learning Approach for Weather Radar Beam Blockage Correction
- 45 Yuanyuan Jin, Shiyu Tao, Qi Liu and Xiaodong Liu. A BiLSTM-CRF Based Approach to Entity Extraction of Word Segmentation in Chinese

D2S1T4 - CST-SS 3

The 1st International Workshop on COMMunity-OrieNted WEARrable Computing Systems

Chair: Giancarlo Fortino

- Jhon Freddy Rodriguez Leon, Francesco Lago, Eduardo Castillo Castañeda and
81 Giuseppe Carbone. Preliminary design of a magnetic-locking system for specific
exoskeleton-assisted holding tasks
- 173 Giorgio Audrito and Marco Ottina. Aggregate Drone Monitoring of Wildfires
- 176 Andrea Basso, Daniele Bortoluzzi and Gianluca Torta. Implementation of an IoT Wearable
Prototype on a Standard AI Architecture
- Giulia Apicella, Giuseppe D'Aniello, Giancarlo Fortino, Matteo Gaeta, Raffaele Gravina
195 and Luca Giuseppe Tramuto. A Situation-aware Wearable Computing System for Human
Activity Recognition
- Roberto Casadei, Danilo Pianini, Gianluca Aguzzi, Giorgio Audrito, Gianluca Torta, Marco
236 Ottina, Ferruccio Damiani and Mirko Viroli. Towards Automated Engineering for Collective
Adaptive Systems: Vision and Research Directions
- Daniela Lo Presti, Francesca De Tommasi, Chiara Romano, Martina Pulcinelli,
187 Mariangela Pinnelli, Carlo Massaroni, Blandina Lanni, Massimiliano Carassiti, Giancarlo
Fortino and Emiliano Schena. A quantitative assessment of team members physiological
traits and interactions for the development of Collective Intelligence in a clinical scenario

D2S2T4 - CST-SS 4

Special Session on Cyber Social Computing and Cyber-Enabled Applications

Chair: Michele Ianni

- 39 Ying Shen, Kangyang Li, Zihui Xu, Zhenzhou Wang and Jianxin Ge. Research on Energy
Digital Twin Quality Model Based on Data Driven
- 59 Ye-Bin Yang, Jiu-Lei Jiang and Peng Zou. Importance Node Evaluation of Temporal
Networks Based on the W-SAM Model
- 146 Jinyue Wang and Chao Yang. Financial Fraud Detection Based on Ensemble Machine
Learning

D2S3T1 - CST 8

Main Track - Session 8

Chair: Giuseppe D'Aniello

- 49 Mengqin He, Jin Xu, Zhigeng Pan, Jingwei Lin, Wenmin Lin and Chaojian Zhang.
CmpQTS: Comparative Visual Analysis of Quantitative Timing Strategies
- Youmei Zhou, Jingjing Chen, Xiyu Zhang, Xiao Liu and Hao Lei. How to Support the
111 Decision-Making Process of Community Regeneration proposed by Evolutionary Game
and Reinforcement Learning ? A case study in Shanghai
- 160 Ruowei Zhang. A hybrid music recommendation method based on music genes and
collaborative filtering
- 174 Yeshan Wu, Yishui Zhu, Luyang Wang and Bo Wu. Design of Emergency Rescue System
Prototype Based on Metaverse

D2S3T4 - CST 9

Main Track - Session 9

Chair: Antonella Guzzo

- 155 Guozhi Liu, Fei Dai, Bi Huang, Lecheng Li, Shuai Wang and Zhenping Qiang. Towards
Accurate Latency Prediction of DNN Layers Inference on Diverse computing Platforms
- 89 Wenqing Yang, Xiaochao Li, Peng Wang, Jun Hou, Qianmu Li and Nan Zhang. A Joint
Knowledge Graph Reasoning Method
- 208 Ryan Hare, Nidhi Patel, Ying Tang and Pankti Patel. A Graph-based Approach for
Adaptive Serious Games
- 161 Sifeng Wang, Anran Li, Zhaoan Dong and Shengxiang Li. TaskRec: Using Causal Graph
to Debias in Task Recommendation System

D2S4T1 - CST 10

Main Track - Session 10

Chair: Giuseppe Guido

- Sina Shaffiee Haghshenas, Giuseppe Guido, Alessandro Vitale and Saeid Jafarzadeh
177 Ghouschi. Quantitative and Qualitative Analysis of Internet of Things (IoT) in Smart
Cities and its Applications
- 63 Vahid Heydari. Removing Target Defense for Internet-Controlled Systems
- 131 Zhongyang Wang, Yu-Feng Yu, Benchang Zheng and Feng Liu. Correlation Filtering
Tracking Method Based on Unsupervised Domain Adaptive
- Shengxiang Li, Sifeng Wang, Zhaoan Dong, Anran Li, Lianrong Qi and Chao Yan.
- 163 PSBCNN : Fine-grained image classification based on pyramid convolution networks and
SimAM

D2S4T3 - CST 11

Main Track - Session 11

Chair: Giuseppe Franzè, Agostino Mangini

- 159 Giuseppe Olivieri, Gaetano Volpe, Agostino Marcello Mangini and Maria Pia Fanti. A
District Energy Management Approach Based on Internet of Things and Blockchain
- 51 JiuJun Cheng, Mengnan Hou, Mengchu Zhou, Guiyuan Yuan and Qichao Mao. An
Autonomous Vehicle Group Formation Method based on Risk Assessment Scoring
- 226 Francesco Giannini, Giuseppe Franzè, Francesco Pupo and Giancarlo Fortino.
Autonomous Vehicles in Smart Cities: a Deep Reinforcement Learning Solution
- 53 Yingchun Ye, Junxuan Zhang and Zeyi Li. Infrared and visible image fusion method based
on dual domain enhancement in low illumination environment

D2S4T4 - CST 12

Main Track - Session 12

Chair: Qimeng Li

- 99 Xibei Jia and Zhichao Lian. A Semantic Segmentation Algorithm Based on Contrastive
Learning Using Aligned Feature Samples
- 93 Yan Cui, Jieli Jiang, Xiaoyan Jiang and Yue Dai. A Novel Efficient Discriminative
Projection Learning for Big Data

- 122 Changsheng Wu and Huihui Wang. A Fast Distributed Accelerated Gradient Algorithm for Big Data Classification
- 91 Pengwei Li, Shihua Wu, Zhukai Jiang and Zhichao Lian. Local Alignment with Global Semantic Consistence Network for Image–Text Matching

D3S1T1 - CST 13

Main Track - Session 13

Chair: Michele Ianni

- 103 Zheming Zuo, Zhichao Lian and Zihui Wei. A GAN-Based Framework For High-Fidelity Face Swapping
- 41 Youning Wang, Zhiyun Yang, Qi Liu and Xiaodong Liu. An Input Sampling Scheme to Radar Echo Extrapolation For RNN-Based Models
- 23 Qingqing Gao, Xiangping Wu, Ke Wang, Shuang Wang and Shaowei Huang. Adaptive Retinex image defogging algorithm based on the depth of field information
- 37 Danhui Wu, Tong Lu and Xia Li. An improved attention mechanism based YOLOv4 structure for lung nodule detection
- 35 Hui Zhang, Tong Lu, Tieqiang Li and Xia Li. A Modified Generative Adversarial Network for Reconstruction of Compressed Sensing MRI

D3S2T1 - CST 14

Main Track - Session 14

Chair: Antonio Esposito

- 225 Walid Brahim and Jianhua Ma. Accuracy Assessment and Improvement of FMCW Radar-based Vital Signs Monitoring under Practical Scenarios
- 121 Beniamino Di Martino, Antonio Esposito and Gennaro Junior Pezzullo. Towards an Intelligence system to support Diseases' Diagnoses and improve Health treatments
- 148 Martina Savoia, Diletta Chiaro, Fabio Giampaolo, Salvatore Cuomo and Francesco Piccialli. The BIOCHIP project: A Deep Learning approach for multiwell segmentation
- 123 Guoxia Xu, Hao Wang, Marius Pedersen, Hu Zhu and Meng Zhao. Multi-label Abdominal Image Segmentation with Partially Labeled Data: A Prototypical Consistent Learning Perspective

D3S1T2 - CST-SS 5

The 3rd International Workshop on Impact of Internet of Things on Daily Life - Part 1

Chair: Wu Bo, Qimeng Li

- 75 Bo Wu, Koshiro Tosa and Kiminori Sato. A Walk-through Type Authentication System Design via Gaze Detection and Color Recognition
- 76 Ran Dong, Shaowen Ni, Bo Wu, Shingo Hayano, Dongsheng Cai and Soichiro Ikuno. Analyzing Jo-Ha-Kyu Mechanism in Japanese Traditional Performing Art Ningyo Joruri
- 98 Riheng Zhang, Min Tan, Xiaoyang Mao, Zhigang Gao and Xiaoling Gu. Adaptive Destruction Learning for Fine-grained Visual Classification
- 140 Hong Chen. Using a Ubiquitous Personal Online Datastore for Aggregating and Sharing IoT Data to Smart City
- 149 Zijun Wang, Bo Wu and Qun Jin. Design of a Vision Blind Spot Detection System Based on Depth Camera

D3S2T2 - CST-SS 6

The 3rd International Workshop on Impact of Internet of Things on Daily Life - Part 2

Chair: Francesco Pupo

- 151 Hu Mo, Zhang Yunchao and Liu Ximeng. Research on Information Coordination Mechanism of Multi-participants in Community-based Elderly Care by Blockchain
- 153 Ruichen Cong, Shun Kanega and Nozomi Fujikawa. Infrared Distance Sensor-based Parking Space Reservation System for People with Disabilities
- 186 Xuan Huang, Bo Wu and Shoji Nishimura. A Pose Detection based Continuous Authentication System Design via Gait Feature Analysis
- 204 Yi Zhou, Yishui Zhu, Luyang Wang and Yu Guo. Research on fuel consumption model of heavy Truck based on improved BP neural Network
- 210 Dingjie Wu, Xuanzhang He, Yao Zhang, Junjie Zhu, Xinyuan Zhang, Minchao Ye and Zhigang Gao. Binary Function Similarity Detection Based On Graph Neural Network With Self-Attention Mechanism

D4S1T1 - CST 15

Main Track - Session 15

Chair: Edward Dawam

- 145 Megha Quamara, Gabriel Pedroza and Brahim Hamid. Facilitating safety and security co-design and formal analysis in multi-layered system modeling
- 13 Yipeng Ji, Haotian Yang and Zhixin Sun. Improved Carnivorous Plant Algorithm based on Hybrid Strategy and its application
- 42 Ziwen Zhang, Yang Li and Qi Liu. High Resolution Remote Sensing Water Image Segmentation Based on Dual Branch Network
- 47 Jianhao Ma, Jiawei Sun, Qi Liu and Xiaodong Liu. A Precipitation Prediction Method Based on UNet and Attention Mechanism
- 95 Edward Dawam and Xiaohua Feng. Traffic Light Detection and Recognition in Autonomous Vehicles (AVs)

D4S2T1 - CST 16

Main Track - Session 16

Chair: Enrica Tricomi

- 106 Peichen Liu, Kai Peng and Bohai Zhao. A Cybertwin-Driven Intelligent Offloading Method for IoV Applications Using DRL in Smart Cities
- 32 Xinyu Li, Ning Jin and Ke Yan. A Multi-domain Sentiment Classification model based on Adversarial Multi-task learning and attention mechanisms
- 172 Nicola Lotti, Enrica Tricomi, Francesco Missiroli, Xiaohui Zhang and Lorenzo Masia. Machine Learning techniques in soft robotic suits for whole body assistance
- 156 Yuxuan Zuo, Zhenping Qiang, Fei Dai, Xiaofeng Shao, Shiqi Su and Zhihong Liang. Supply Chain Financial System Based on Blockchain Technology

D4S1T2 - CST-SS 7

Late breaking innovation track - Part 1

Chair: Qimeng Li

- 227 Yahong Yang, Pan Wang, Zixuan Wang and Zeyi Li. A Survey of Quantitative Comparative Research on Intrusion Detection Algorithms in Wireless Sensor Networks
- 229 Yao Qigui, Zhang Xiaojian and Wang Qi. A fast and accurate method for identifying the equipment fingerprint of distribution secondary system
- 230 Jixiang Gan, Li Pan, Yuanyuan Jin, Qi Liu and Xiaodong Liu. A Load Forecasting Approach Based on Graph Convolution Neural Network
- 231 Yang Li, Hui Lu, Qi Liu, Zhiyun Yang, Zihao Wu and Xiaodong Liu. PUNet: Convolutional Networks based on Parallel Feature Fusion
- 232 Mei Zhang, Hui Li and Fei Dai. Analyzing Realizability of BPMN Choreographies

D4S2T2 - CST-SS 8

Late breaking innovation track - Part 2

Chair: Antonella Guzzo

- 233 Jingfei Zhu, Zhichao Lian and Zhukai Jiang. A Spatio-Temporal Graph Transformer Network for Multi-Pedestrian Trajectory Prediction
- 234 Xiaojie Xu and Xiuwen Fu. Analysis on cascading failure of directed-undirected interdependent networks with different coupling modes
- 235 Maheesha Dhashantha Silva, Qi Liu and Oscar Famous Darteh. A Recent Review of NILM Framework: Development and Challenges
- 130 Taiyu Yan and Yu-Feng Yu. Discriminative Correlation Filter for Visual Tracking based on Asymmetric Relative Entropy

The 20th IEEE International Conference on Pervasive Intelligence and Computing (PICom 2022)

D1S1T2 - PICOM 1

Computational Intelligence, Intelligent Networks, Middleware and Applications - Part 1

Chair: Flavia Delicato

- 109 Cristian Sestito, Stefania Perri and Robert Stewart. Design-Space Exploration of Quantized Transposed Convolutional Neural Networks for FPGA-based Systems-on-Chip
- 199 Berke Ataseven, Alireza Madani, Beren Semiz and M. Emre Gursoy. Physical Activity Recognition using Deep Transfer Learning with Convolutional Neural Networks
- 147 Shiming Zan, Yu Pang, Raffaele Gravina, Enling Cao, Ye Li and Weilin Zang. A Deep Reinforcement Learning Based Approach for Intelligent Reconfigurable Surface Elements Selection
- 152 Xiyue Wang and Wei Li. MTFed-NILM: Multi-Task Federated Learning for Non-Intrusive Load Monitoring
- 124 Irfanullah Khan, Antonio Guerrieri, Giandomenico Spezzano and Andrea Vinci. Occupancy Prediction in Buildings: An approach leveraging LSTM and Federated Learning

D1S2T2 - PICOM 2

Computational Intelligence, Intelligent Networks, Middleware and Applications - Part 2

Chair: Paulo Pires

- 171 Maria Pia Canino, Eugenio Cesario, Andrea Vinci and Shabnam Zarin. Exploiting mobility data to forecast Covid-19 spread
- 175 Diego Avellaneda, Diego Mendez and Giancarlo Fortino. BLE-based Indoor Positioning Platform Utilizing Edge Tiny Machine Learning
- 190 Sandra Costanzo, Alexandra Flores and Giovanni Buonanno. Machine Learning Methods for Microwave Imaging in Cancer Detection
- 206 Cláudio Farias, Flavia Delicato, Henrique Serdeira and Victor Prado. Design and Implementation of UFRJ Nautilus' AUV Lua - A tinyML approach
- 97 Carlo Mastroianni, Luigi Scarcello and Jacopo Settino. Quantum Computing Approach for Energy Optimization in a Prosumer Community

D2S1T2 - PICOM 3

Pervasive Computing, Activity/Affect Recognition, Smart Object, Environment, System and City - Part 1

Chair: Wei Li

- 102 Pietro Manzoni, Andrés Calandin Vega, Jose Giner Perez de Lucia, Jose Luis Poza Lujan, José M Cecilia and Carlos Calafate. Raising citizens and institutions awareness of environmental problems using smart sensing technologies
- 56 Jiahui Tang, Yu Pang, Hao Wang, Ye Li and Fangmin Sun. Wearable IMU Based Gait Quality Quantitative Evaluation Method

- 184 Mouad Rahmouni, Majdoulayne Hanifi, Claudio Savaglio, Giancarlo Fortino and Mounir Ghogho. An AIoT Framework for Precision Agriculture
- 202 Federico Fausto Santoro, Corrado Santoro, Eleonora Arena and Andrea Canino. A Solar Module Power Production Model Predictor for Automated Solar Module Manufacturing
- 113 Gabriele Penzotti, Davide Tarasconi, Stefano Caselli and Michele Amoretti. Seamless Sensor Data Acquisition for the Edge-to-Cloud Continuum

D2S2T2 - PICOM 4

Pervasive Computing, Activity/Affect Recognition, Smart Object, Environment, System and City - Part 2

Chair: Andrea Vinci

- 217 Agostino Forestiero, Antonio Francesco Gentile and Davide Macrì. A blockchain based approach for Fog infrastructure management leveraging on Non-Fungible Tokens
- Nicolas Tsapatsoulis, Harris Partaourides, Christos Christodoulou and Constantinos
- 214 Djouvas. Quo Vadis Computer Science? The topics of the influential papers during the period 2014-2021
- 108 Mohammad Shirdel, Michele Segata, Giuseppe Di Fatta and Antonio Liotta. Event Detection in Financial Markets
- 143 Oscar T.-C. Chen, Yen-Cheng Lu and Yu-Xuan Chang. Lightweight Model by Iterative Momentum Pruning Scheme for Channel Reduction
- Giuseppe Coviello, Kunal Rao, Ciro Giuseppe De Vita, Gennaro Mellone and Srimat
- 154 Chakradhar. DataXc: Flexible and efficient communication in microservices-based stream analytics pipelines

D2S3T3 - PICOM 5

Workshop on Digital Twins for Business Processes (DT4BP) - Trustworthiness of Machine Learning in Adversarial Environments (TMLAE)

Chair: Barbara Re

- 20 Lukas Schweiger, Rodolfo Andres Benedech and Jürg Meierhofer. Development approach for value-creating service process twins based on service design methods
- 169 Flavio Corradini, Arianna Fedeli, Andrea Polini and Barbara Re. Towards a Digital Twin Modelling Notation
- 197 Flavio Corradini, Sara Pettinari, Barbara Re, Lorenzo Rossi and Francesco Tiezzi. An Approach to Support Digital Process Twin
- 133 Kiran Karra, Chace Ashcraft and Cash Costello. SanitAIs: Unsupervised Data Augmentation to Sanitize Trojaned Neural Networks

The 20th IEEE International Conference on Dependable, Autonomic & Secure Computing (DASC 2022)

D1S1T3 - DASC 1

Dependable, Autonomic & Secure Computing: Theory - Part 1

Chair: Claudio Savaglio

- 83 Michele Mastroianni and Francesco Palmieri. Energy-aware Optimization of Data Centers and Cybersecurity Issues
- 179 Abdul Ghafoor Abbasi, Peter Altmann and Anna Rydberg. Towards a verifiable and secure data sharing platform for livestock supply chain
- 192 Lelio Campanile, Mauro Iacono and Michele Mastroianni. Towards privacy-aware software design in small and medium enterprises
- 6 Haotian Yang, Enliang Wang, Cai Yue and Zhixin Sun. Research on fire rescue path optimization of unmanned equipment based on improved slime mold algorithm

D1S2T3 - DASC 2

Dependable, Autonomic & Secure Computing: Theory - Part 2

Chair: Michele Mastroianni

- 71 Naoki Matsushashi, Chisa Takano and Masaki Aida. Fragmentation Phenomena of Online Community Described by the Fundamental Equation of Online User Dynamics
- 201 Pinar Erbil and M. Emre Gursoy. Detection and Mitigation of Targeted Data Poisoning Attacks in Federated Learning
- 203 Zuhail Ozturk, Haluk Topcuoglu and Mahmut Kandemir. Parallelism-Based Techniques for Slowing Down Soft Error Propagation
- Kumar Priyansh, Ritu Dimri, Fahim Islam Anik, Mst Shapna Akter, Hossain Shahriar,
- 205 Zakirul Alam Bhuiyan and Nazmus Sakib. DuRBIN: A Comprehensive Approach to Analysis and Detection of Emerging Threats due to Network Intrusion
- Pratibha Singh, Hamman Samuel, Fehmi Jaafar and Darine Ameyed. Enhancing
- 209 Biometric Security with Combinatorial and Permutational Multi-Fingerprint Authentication Strategies

D2S1T3 - DASC 3

Dependable, Autonomic & Secure Computing: Applications - Part 1

Chair: Mauro Conti

- 1 Anthony Melaragno and William Casey. Change Point Detection with Machine Learning for Rapid Ransomware Detection
- 9 Alexander Dörflinger, Benedikt Kleinbeck, Mark Albers, Harald Michalik and Martin Moya. A Framework for Fault Tolerance in RISC-V
- 14 Trupil Limbasiya, Arijit Karati and Debasis Das. SELECT: Secure and Lightweight Context-Aware Mechanism for Smart Vehicular Networks
- 16 Chloe Vonderlinden, Joseph Walton, Tony Melaragno and William Casey. The Visualization of Ransomware Execution
- 48 Alessandro Brighente, Mauro Conti and Harsha Vasudev. MeLSeC: A Method for Lightweight and Secure Communication in Internet of Vehicles

D2S2T3 - DASC 4

Dependable, Autonomic & Secure Computing: Applications - Part 2

Chair: Antonio Celesti

- Bahman Arasteh, Mohammad Reza Sattari and Reza Shokri Kalan. Fuzuli: Automatic
67 Test Data Generation for Software Structural Testing using Grey Wolf Optimization
Algorithm and Genetic Algorithm
Valeria Lukaj, Francesco Martella, Maria Fazio, Armando Ruggeri, Antonio Celesti and
194 Massimo Villari. A Blockchain Based Federated Ecosystem for Tracking and Validating
the Authenticity of Goods
Jingxiang Qu, Ryan Wen Liu, Jiangtian Nie, Xianjun Deng, Zehui Xiong, Yang Zhang,
80 Han Yu and Dusit Niyato. Edge Computing-Enabled Multi-Sensor Data Fusion for
Intelligent Surveillance in Maritime Transportation Systems
Joseph Bingham, Noah Green and Saman Zonouz. LegoNet: Memory Footprint
118 Reduction Through Block Weight Clustering
Sara A. Alsalamah, Shada Alsalamah, Hessah Alsalamah and Chang-Tien Lu.
84 Towards a Patient-Centered Virtual Hospital Ecosystem: A Fine Grained VHealth-AC
Model for Hospitals' Legacy Information Systems

D2S1T1 - DASC 5

1st International Workshop on IoT & Security (IoT&Security) / Social and BIometric data for APplications in human-machine interactions (SOBIOAPPS) - Part 1

Chair: Anna Esposito

- Giancarlo Fortino, Claudia Greco, Antonella Guzzo and Michele Ianni. Enabling Faster
127 Security Assessment of Re-hosted Firmware
Francesco Mercaldo, Mario Cesarelli, Antonella Santone and Fabio Martinelli. Emotion
19 Recognition from Facial Expression using Explainable Deep Learning
Davide Andreoletti, Omran Ayoub, Achille Peternier, Tiziano Leidi and Silvia Giordano.
60 Sensor and Feature Selection for Lightweight Emotion Recognition on Resource-
Constrained Smartwatches
Gennaro Raimo, Massimiliano Conson, Terry Amorese, Marialucia Cuciniello, Claudia
Greco, Gennaro Cordasco, Zoraida Callejas Carrión, Cornelius Glackin and Anna
119 Esposito. The Role of Language in Building Automatic Models for Depression
Detection

D2S2T1 - DASC 6

Social and BIometric data for APplications in human-machine interactions (SOBIOAPPS) - Part 2

Chair: Anna Esposito

- Laura Verde, Lelio Campanile, Fiammetta Marulli and Stefano Marrone. Speech-
126 based Evaluation of Emotions-Depression Correlation
Roman Shrestha, Cornelius Glackin, Julie Wall, Nigel Cannings, Marvin Rajwadi,
162 Satya Kada, James Laird, Thea Laird and Chris Woodruff. Speaker Recognition using

- Multiple X-Vector Speaker Representations with Two-Stage Clustering and Outlier Detection Refinement
 Marialucia Cuciniello, Terry Amorese, Claudia Greco, Gennaro Raimo, Gennaro Cordasco, Maria Stylianou Kornos, Anna Torp Johansen, Kristin Beck Gjellesvik,
 178 Anaïs Fernandez, Daria Kyslitska, Eduardo González-Fraile, Begoña Fernández-Ruanova, Jofre Tenorio-Laranga, María Inés Torres and Anna Esposito. A cross-cultural survey to identify Seniors' preferences towards the Empathic Virtual Coach
 191 David Griol, Fernando Fernández-Martínez, Anna Esposito and Zoraida Callejas. An application of conversational systems to promote healthy lifestyle habits

D4S1T3 - DASC 7

20th International Workshop on Assurance in Distributed Systems and Networks (ADSN 2022) - Part 1

Chair: Massimiliano Rak

- 55 Naoki Hirakura and Masaki Aida. Impact of Dimensionality of User Interaction Subspace on Multi-dimensional Opinion Formation
 110 Roberto Natella, Andrea Ceccarelli and Massimo Ficco. Federated and Generative Data Sharing for Data-Driven Security: Challenges and Approach
 Keitaro Watanabe, Hideharu Kojima, Yuichi Sudo, Naoto Yanai and Tatsuhiro
 142 Tsuchiya. Implementation and Evaluation of Leader Election in the Population Protocol Model Using an Emulation Environment
 188 Marco Barletta, Marcello Cinque, Luigi De Simone and Raffaele Della Corte. Introducing k4.0s: a Model for Mixed-Criticality Container Orchestration in Industry 4.0
 193 Massimo Ficco, Raffaele Palmiero, Massimiliano Rak and Daniele Granata. MAVLink Protocol for Unmanned Aerial Vehicle: Vulnerabilities Analysis

D4S2T3 - DASC 8

20th International Workshop on Assurance in Distributed Systems and Networks (ADSN 2022) / 6th International Workshop on Emerging Dependable Computing System Technologies and Applications (EDCSTA 2022) / BigCyberSecurity 2022 - Part 2

Chair: Domenico Cotroneo

- 212 Domenico Cotroneo, Luigi De Simone and Roberto Natella. On Temporal Isolation Assessment in Virtualized Railway Signaling as a Service Systems
 215 Lujia Pan, Marcus Kalander, Yuchao Zhang and Pinghui Wang. Contrastive Representation based Active Learning for Time Series
 216 Chengjin Yang, Dongdong Xie, Linxi Cai and Pinghui Wang. FBPB-SE: A Forward and Backward Private Blockchain-based Searchable Encryption with Fuzzy Multi-keyword
 134 Kazuaki Tanaka and Hiroyuki Maeda. Robust Indoor Positioning Method using BLE and Wireless Mesh Network
 222 Toshihiro Uchibayashi, Bernady Apduhan, Takuo Suganuma and Masahiro Hiji. Design and Implementation of a Data-Auditing Mechanism for Container Migration

D4S1T4 - DASC 9

1st International Workshop on Hybrid Internet of Everything Models for Industry 5.0 (HIEMI)

Chair: Francesco Cauteruccio

- 54 Paola Pierleoni, Lorenzo Palma, Alberto Belli, Sara Raggiunto and Luisiana Sabbatini. Supervised Regression Learning for Maintenance-related Data
- 120 Claudia Diamantini, Alex Mircoli, Ornella Pisacane and Domenico Potena. Comparing data-driven meta-heuristics for the bi-objective Component Repairing Problem
- 125 Paola Pierleoni, Alberto Belli, Lorenzo Palma, Luisiana Sabbatini and Sara Raggiunto. An IoT-based Wireless Sensor Network for Lighting Control Systems
- 180 Tullio Facchinetti, Marco Arazzi and Antonino Nocera. Time series forecasting for predictive maintenance of refrigeration systems

The 8th IEEE International Conference on Cloud and Big Data Computing (CBDCom 2022)

D1S3T2 - CBDCom 1

Edge-Cloud Systems

Chair: Fabrizio Marozzo

- 132 Toyotaro Suzumura, Akiyoshi Sugiki, Hiroyuki Takizawa, Akira Imakura, Hiroshi Nakamura, Kenjiro Taura, Tomohiro Kudoh, Toshihiro Hanawa, Yuji Sekiya, Hiroki Kobayashi, Yohei Kuga, Ryo Nakamura, Renhe Jiang, Junya Kawase, Masatoshi Hanai, Hiroshi Miyazaki, Tsutomu Ishizaki, Daisuke Shimotoku, Daisuke Miyamoto, Kento Aida, Atsuko Takefusa, Takashi Kurimoto, Koji Sasayama, Naoya Kitagawa, Ikki Fujiwara, Yusuke Tanimura, Takayuki Aoki, Toshio Endo, Satoshi Ohshima, Keiichiro Fukazawa, Susumu Date and Toshihiro Uchibayashi. *mdx: A Cloud Platform for Supporting Data Science and Cross-Disciplinary Research Collaborations*
- 157 Sumedha Arora, Brigu Garg and Abhishek Sharma. *Cloud-IoT Based 'Multi-Disease Health Care System' for Multiple-Users Using Prediction Approach on Edge Devices*
- 181 Fabrizio Marozzo, Alessio Orsino, Domenico Talia and Paolo Trunfio. *Edge Computing Solutions for Distributed Machine Learning*
- 207 Attiq Ur-Rehman, Joarder Kamruzzaman, Iqbal Gondal and Alireza Jolfaei. *Cyber Resilience Modelling for the Operations of Hybrid Network*

D1S4T2 - CBDCom 2

Big data theory and applications I

Chair: Alfredo Cuzzocrea

- 78 Alfredo Cuzzocrea, Carson Leung, Carmine Gallo, Selim Soufargi, Siyuan Shang and Yubo Chen. *OLAP over Big COVID-19 Data: A Real-Life Case Study*
- 79 Alfredo Cuzzocrea, Carson Leung, Mojtaba Hajian and Marshall Jackson. *Effectively and Efficiently Supporting Predictive Big Data Analytics over Open Big Data in the Transportation Sector: A Bayesian Network Framework*
- 92 Wajeeha Iqbal, Abdul Javed, Muhammad Rizwan, Gautam Srivastava and Thippa Reddy Gadekallu. *Blockchain Based Secure Communication for IoT Devices in Smart Cities*

D2S3T2 - CBDCom 3

Applications

Chair: Sudip Chakraborty

- 196 Maria Teresa Gaudio, Sudip Chakraborty and Stefano Curcio. *Agri-food supply-chain traceability: a multi-layered solution*
- 72 Muhammad Uzair, Stefania Tomasiello, Evelin Loit and Jerry Chun Wei-Lin. *Predicting the soil organic carbon by recent machine learning algorithms*
- 85 Bailey Janeczko, Doug Pickering and Gautam Srivastava. *Western Hockey League (WHL) Regularized Adjusted Plus-Minus*

D2S4T2 - CBDCCom 4

Big data theory and applications II

Chair: Valerio Bellandi

- 57 Valerio Bellandi, Paolo Ceravolo, Samira Maghool, Margherita Pindaro and Stefano Siccardi. Pattern Matching Algorithm in Event Graphs
- 58 Yu Zhang, Min Wang, Michael Zipperle, Alireza Abbasi and Morteza Saberi. S-index: Significance of Academic Authors to Individual Publication Venues
- 74 Jimmy Ming-Tai Wu, Shuo Liu and Jerry Chun-Wei Lin. Mining of High-Utility Sequence Patterns in Large-Scale Uncertain Databases

Social Event (September 14, 2022)

Location: Hotel Eurolido, Falerna (CZ), Italy

16.00-19.30: Sightseeing of Tropea town “the Pearl of the Tyrrhenian Sea”

20.00-20.30: Presentation of the Book “Io Amo” (“I love”) written by Maestro Gianfranco Fasano

20.30-22.30: Social Dinner

22.30-23.00: Musical Corner: Maestro Gianfranco Fasano & “guest star” Carlo Antonio Fortino (Winner of All Together Now Kids 2021)

23.00-23.30: Conference Awards

23.30-00.00: Conference Cake & Champaign Final Toast