

Detailed Program of the 31st ICANN2022 Conference

Tuesday 6/9/2022

[09:00–17:00 Registration Demo, and Support](#)

10:00-10:15 Welcome Session

10:15-11:15

Session 1, Keynote 1: “Some implications of high-dimensional geometry for neurocomputing”

Hybrid Session, Room Hybrid 1 - Keynote

Chair: Prof. Stefan Wermter

Keynote Speaker: Prof. Vera Kurkova

Institute of Computer Science of the Czech Academy of Sciences.

11:45-13:30

Session 2, Deep Learning

Hybrid Session, Room Hybrid 1

Chair: Dr Steve Battle

MetaAudio: A Few-Shot Audio Classification Benchmark

Calum Heggan, Sam Budgett, Tim Hospedales, Mehrdad Yaghoobi

Neural-Gas VAE

Jan-Ole Perschewski, Sebastian Stober

Systematic comparison of incomplete-supervision approaches for biomedical image classification

Sayedali Shetab Boushehri, Ahmad Bin Qasim, Dominik Waibel, Fabian Schmich, Carsten Marr

Sim-to-Real Neural Learning with Domain Randomisation for Humanoid Robot Grasping

Connor Gäde, Matthias Kerzel, Erik Strahl, Stefan Wermter

F-Measure Optimization for Multi-Class, Imbalanced Emotion Classification Tasks

Toki Inan, Mingrui Liu, Amarda Shehu

R2P: A Deep Learning Model from mmWave Radar to Point Cloud

Yue Sun, Honggang Zhang, Zhuoming Huang, Benyuan Liu

Exploring Deep Learning Architectures for Localised Hourly Air Quality Prediction

Sooraj Raj, Jim Smith, Enda Hayes

11:45-13:30

Session 3, Neural Network Theory

Hybrid Session, Room Hybrid 2

Chair: Dr. Rafet Durgut

Learning Trajectories of Hamiltonian Systems with Neural Networks

Katsiaryna Haitsiukevich, Alexander Ilin

Collaborative Multiple-Student Single-Teacher for Online Learning

Alaa Zain, Yang Jian, Jinjia Zhou

3DLaneNAS: Neural Architecture Search for Accurate and Light-Weight 3D Lane Detection

Ali Zoljodi, Mohammad Loni, Sadegh Abadijoui, Mina Alibeigi, Masoud Daneshtalab

Inferring Boundary Conditions in Finite Volume Neural Networks

Coşku Can Horuz, Matthias Karlbauer, Timothy Praditia, Martin V. Butz, Sergey Oladyshkin, Wolfgang Nowak, Sebastian Otte

To tree or not to tree? Assessing the impact of smoothing the decision boundaries

Anthea Mérida Montes de Oca, Argyris Kalogeratos, Mathilde Mougeot

A Taxonomy of Recurrent Learning Rules

Guillermo Martín-Sánchez, Sander Bohté, Sebastian Otte

Associative Memory Networks with Multidimensional Neurons

Roseli S. Wedemann, Angel Ricardo Plastino

11:45-13:30

Session 4, Deep Learning

Remote Session, Room Remote 1

Chair: Dr. Nikolaos Polatidis

Brain Tumor Segmentation Framework Based on Edge Cloud Cooperation and Deep Learning

Saifeng Feng, Jianhui Zhao, Wenyuan Zhao, Tingbao Zhang

A novel deep learning based method for Doppler Spectral curve detection

Mao Keming, Ren Yitao, Yin Liancheng, Jin Yan

Attention Guided Network for Salient Object Detection in Optical Remote Sensing Images

Yuhan Lin, Han Sun, Ningzhong Liu, Yetong Bian, Jun Cen, Huiyu Zhou

A Unified Multiple Inducible Co-Attentions and Edge Guidance Network for Co-Saliency Detection

Zhenshan Tan, Xiaodong Gu

CLTS+: A New Chinese Long Text Summarization Dataset with Abstractive Summaries

Xiaojun Liu, Shunan Zang, Chuang Zhang, Xiaojun Chen, Yangyang Ding

BiSMSM: A Hybrid MLP-based Model of Global Self-Attention Processes for EEG-based Emotion Recognition

Wei Li, Ye Tian, Bowen Hou, Jianzhang Dong, Shitong Shao

Boosting Both Robustness and Hardware Efficiency via Random Pruning Mask Selection

Ruixin Xue, Meiqi Wang, Zhongfeng Wang

11:45-13:00

Session 5, Neural Network Theory

Remote Session, Room Remote 2

Chair: Dr. Haixia Liu

v. 0509-01w. Note that all times in the programme are in British Summer Time (GMT+1)

MLPPose: Human Keypoint Localization via MLP-Mixer

Biao Guo, Kun Liu, Qian He

Layer-specific Repair of Neural Network Classifiers

Shuo Sun, Jun Yan, Rongjie Yan

D-TRACE: Deep Triply-Aligned Clustering

Ding-Hua Chen, Dong Huang, Haiyan Cheng, Chang-Dong Wang

PIAA: Pixel-level Adversarial Attack on Attention for Deep Neural Network

Huailin Liu, Jing Liu

A Coarse-to-Fine Training Paradigm for Dialogue Summarization

Zhiyue Liu, Zhaoyang Wang, Jiahai Wang

Nesterov Adam Iterative Fast Gradient Method for Adversarial Attacks

Cheng Chen, Zhiguang Wang, Yongnian Fan, Xue Zhang, Dawei Li, Qiang Lu

A Knowledge-driven Enhanced Module for Visible-Infrared Person Re-Identification

Shihao Shan, Enyuan Xiong, Xiang Yuan, Song Wu

14:30-16:15

Session 6, Neural Network Models

Hybrid Session, Room Hybrid 1

Chair: Dr Matthias Kerzel

Architecture-Agnostic Time-Step Boosting: a Case Study in Short-Term Load Forecasting

Ioannis Pierros, Ioannis Vlahavas

Hierarchical Dynamics in Deep Echo State Networks

Domenico Tortorella, Claudio Gallicchio, Alessio Micheli

From Open Set Recognition towards Robust Multi-class Classification

Max Lübbering, Michael Gebauer, Rajkumar Ramamurthy, Christian Bauckhage, Rafet Sifa

ASTra: A Novel Algorithm-Level Approach to Imbalanced Classification

David Twomey, Denise Gorse

Real-time display of spiking neural activity of SIMD hardware using an HDMI interface.

Bernardo Vallejo, Clément Nader, Jordi Madrenas, Mireya Zapata

Gait Adaptation after Leg Amputation of Hexapod Walking Robot without Sensory Feedback

Jan Feber, Rudolf Szadkowski, Jan Faigl

Liquid State Machine on Loihi: Memory Metric for Performance Prediction

Rajat Patel, Vivek Saraswat, Udayan Ganguly

14:30-16:15

Session 7, Supervised Learning & Features Based Learning

Hybrid Session, Hybrid Room 2

Chair: Dr. Hisham Ihsaish

Self-Supervised Anomaly Detection by Self-Distillation and Negative Sampling

Nima Rafiee, Rahil Gholamipoor, Nikolas Adaloglou, Simon Jaxy, Julius Ramakers, Markus Kollmann

Analysing the Predictivity of Features to Characterise the Search Space
Rafet Durgut, Mehmet Emin Aydin, Hisham Ihshaish, Abdur Rakib

Feature Selection for Trustworthy Regression using Higher Moments
Fabian Hinder, Johannes Brinkrolf, Barbara Hammer

Problem Classification for Tailored Helpdesk Auto-Replies
Reece Nicholls, Ryan Fellows, Steve Battle, Hisham Ihshaish

Self-Enhancer: A Self-Supervised Framework for Low-Supervision, Drifted Data with Significant Missing Values
Yu Chen, Peter Flach

Ranking Feature-Block Importance in Artificial Multiblock Neural Networks
Anna Jenul, Stefan Schrunner, Bao Ngoc Huynh, Runar Helin, Cecilia Marie Futsaether, Kristian Hovde Liland, Oliver Tomic

14:30-16:15

Session 8, (Deep, Features Based, Machine, and Supervised) Learning

Remote Session, Room Remote 1

Chair: Prof. Stavros Ntalampiras

Deep Feature Learning for Medical Acoustics

Alessandro Maria Poirè, Federico Simonetta, Stavros Ntalampiras

Variational Autoencoders for Anomaly Detection in Respiratory Sounds

Michele Cozzatti, Federico Simonetta, Stavros Ntalampiras

Intention-Aware Frequency Domain Transformer Networks for Video Prediction

Hafez Farazi, Sven Behnke

Cross Domain Evaluation of Text Detection Models

Adamu Ali-Gombe, Eyad Elyan, Carlos Moreno-García, Chrisina Jayne

An Innovate Hybrid Approach for Residence Price using Fuzzy C-Means and Machine Learning Techniques

Antonios Papaleonidas, Konstantinos Lykostratis, Anastasios Panagiotis Psathas, Lazaros Iliadis, Maria Giannopoulou

16:15-17:15

Session 9, Keynote 2: "Using robots to understand human cognition"

Hybrid Session, Room Hybrid 1 - Keynote

Chair: Prof. Angelo Cangelosi

Keynote Speaker: Prof. Agnieszka Wykowska

Istituto Italiano di Tecnologia Genova, Italy.

17:30 Welcome drinks reception & BBQ – R Block Courtyard

Wednesday 7/9/2022

[Registration, Demo & Support Room](#)

9:00-10:45

Session 10, Deep Learning

Remote Session, Remote Room 1

Chair: Prof. Abraham Yosipof

F-Transformer: Point Cloud Fusion Transformer for Cooperative 3D Object Detection

Jie Wang, Guiyang Luo, Quan Yuan, Jinglin Li

DuSAG: An Anomaly Detection Method in Dynamic Graph Based on Dual Self-attention

Weiqin Lin, Xianyu Bao, Mark Junjie Li, Zukang Gao

Correlation-based Transformer Tracking

Minghan Zhong, Fanglin Chen, Jun Xu, Guangming Lu

Face Super-Resolution with Spatial Attention Guided by Multiscale Receptive-Field Features

Weikang Huang, Shiyong Lan, Wenwu Wang, Xuedong Yuan, Hongyu Yang, Piaoyang Li, Wei Ma

Learning to Generate Textual Adversarial Examples

Xiangzhe Guo, Shikui Tu, Lei Xu

Deep Graph and Sequence Representation Learning for Drug Response Prediction

Xiangfeng Yan, Yong Liu, Wei Zhang

How to Face Unseen Defects? UDGAN for Improving Unseen Defects Recognition

Yaxi Chen, Ruimin Hu, Zheng Wang, Yuke Li

9:00-10:45

Session 11, Reinforcement Learning

Remote Session, Remote Room 2

Chair: Dr Nikolaos Polatidis

Alleviating Overconfident Failure Predictions via Masking Predictive Logits in Semantic Segmentation

Quan Tang, Fagui Liu, Jun Jiang, Yu Zhang, Xuhao Tang

Pheromone-inspired Communication Framework for Large-scale Multi-Agent Reinforcement Learning

Zixuan Cao, Xiujun Ma, Mengzhi Shi, Zhanbo Zhao

Cooperative Multi-Agent Reinforcement Learning with Hierarchical Communication Architecture

Liu Shifan, Yuan Quan, Chen Bo, Luo Guiyang, Li Jinglin

Model-Based Offline Adaptive Policy Optimization with Episodic Memory

Hongye Cao, Qianru Wei, Jiangbin Zheng, Yanqing Shi

Emotion Aware Reinforcement Network for Visual Storytelling

Xin Li, Hanqing Cai, Tianling Jiang, Chunping Liu, Yi Ji

Long-horizon Route-constrained Policy for Learning Continuous Control without Exploration

Ruidong Cao, Min Dong, Xuanlu Jiang, Sheng Bi, Ning Xi

Multi-mode Light: Learning Special Collaboration Patterns for Traffic Signal Control

Zhi Chen, Shengjie Zhao, Hao Deng

9:00 - 10:45

Session 12, Natural language processing

Remote Session, Remote Room 3

Chair: Dr Antisthenis Tsompanas

An Unsupervised Sentence Embedding Method by Maximizing the Mutual Information of Augmented Text Representations

Tianye Sheng, Lisong Wang, Zongfeng He, Mingjie Sun, Guohua Jiang

Chinese Named Entity Recognition using the Improved Transformer Encoder and the Lexicon Adapter

Mingjie Sun, Lisong Wang, Tianye Sheng, Zongfeng He, Yuhua Huang

Adaptive Knowledge Distillation for Efficient Relation Classification

Haorui He, Yuanzhe Ren, Zheng Li, Jing Xue

Integrating Label Semantic Similarity Scores into Multi-Label Text Classification

Zihao Chen, Yang Liu, Baitai Cheng, Jing Peng

Eliciting Knowledge from Pretrained Language Models for Prototypical Prompt Verbalizer

Yinyi Wei, Tong Mo, Yongtao Jiang, Weiping Li, Wen Zhao

Concatenating BioMed-Transformers to Tackle Long Medical Documents and to improve the Prediction of Tail-end Labels

Vithya Yogarajan, Bernhard Pfahringer, Tony Smith, Jacob Montiel

An Adversarial Multi-Task Learning Method for Chinese Text Correction with Semantic Detection

Fanyu Wang, Zhenping Xie

9:00 - 10:45

Session 13, Generative Models

Remote Session, Remote Room 4

Chair: Dr Kamran Soomro

A Transformer-based GAN for Anomaly Detection

Caiyin Yang, Shiyong Lan, Weikang Huang, Wenwu Wang, Guoliang Liu, Hongyu Yang, Wei Ma, Piaoyang Li

Pancreatic Image Augmentation Based on Local Region Texture Synthesis for Tumor Segmentation

Zihan Wei, Yizhou Chen, Qiu Guan, Haigen Hu, Qianwei Zhou, Zhicheng Li, Xinli Xu, Alejandro Frangi, Feng Chen

Continual Learning by Task-wise Shared Hidden Representation Alignment

Xu-Hui Zhan, Jian-Wei Liu, Ya-Nan Han

Progressive Image Restoration with Multi-Stage Optimization

Yang Jiaming, Zhang Weihua, Pu Yifei

Contrast and Aggregation Network for Generalized Zero-shot Learning

Bin Li, Cheng Xie, Jingqi Yang, Haoran Duan

Image Inpainting Based Multi-scale Gated Convolution and Attention

Hualiang Jiang, Xiaohu Ma, Dongdong Yang, Jiabin Zhao, Yao Shen

3D Face Reconstruction with Geometry Details from a Single Color Image under Occluded Scenes

Dapeng Zhao, Yue Qi

9:00 - 10:45

Session 14, Graphical Models

Remote Session, Remote Room 5

Chair: Dr Elias Pimenidis

Decoupled Representation Network for Skeleton-based Hand Gesture Recognition

Zhaochao Zhong, Yangke Li, Jifang Yang

Dual Perspective Contrastive Learning Based Subgraph Anomaly Detection on Attributed Networks

Songlin Hu, Minglai Shao

IA-ICGCN: Integrating Prior Knowledge via Intra-event Association and Inter-event Causality for Chinese Causal Event Extraction

Zhengming Zhao, Hang Yu, Xiangfeng Luo, Jianqi Gao, Xiao Xu, Guo Shengming

Learning Hierarchical Graph Convolutional Neural Network for Object Navigation

Tao Xu, Xu Yang, Suiwu Zheng

Heterogeneous Graph Attention Network for Malicious Domain Detection

Zhiping Li, Fangfang Yuan, Yanbing Liu, Cong Cao, Fang Fang, Jianlong Tan

GCMK: Detecting Spam Movie Review Based on Graph Convolutional Network Embedding Movie Background Knowledge

Hao Cao, Hanyue Li, Yulin He, Xu Yan, Fei Yang, Haizhou Wang

Knowledge Graph Bidirectional Interaction Graph Convolutional Network for Recommendation

Zengqiang Guo, Yan Yang, Jijie Zhang, Tianqi Zhou, Bangyu Song

11:15 - 13:00

Session 15, Deep Learning

Remote Session, Remote Room 1

Chair: Dr Haixia Liu

Multi-Knowledge Attention Transfer Framework for Action Recognition

Jiaqiang Zhang, Jinxin Guo, Ming Ma

MUST Augment: Efficient Augmentation with Multi-Stage Stochastic Strategy

Qingrui Li, Song Xie, Anil Oymagil, Ziyin Zhang, Mustafa Eseoglu, Choonmeng Lee

Multi-level Metric Learning for Few-shot Image Recognition

Haoxing Chen, Huaxiong Li, Yaohui Li, Chunlin Chen

Lymphoma Ultrasound Image Segmentation with Self-Attention Mechanism and Stable Learning

Yingkang Han, Dehua Chen, Yishu Luo, Yijie Dong

Multistage Diagnosis of Alzheimer's disease Based on Slice Attention Network

Huo Xiaolai, Own Chung-Ming, Zhou Yue, Wu Nannan, Sun Jianwen

Multi-Stream Information-based Neural Network for Mammogram Mass Segmentation

Zhilin Li, Zijian Deng, Li Chen, Yu Gui, Zhigang Cai, Jianwei Liao

Opemod: An Optimal Performance Selection Model for Prediction of Non-Stationary Financial Time Series

Zichao Xu, Hongying Zheng, Jianyong Chen

11:15 - 13:00

Session 16, Convolutional Neural Networks

Remote Session, Remote Room 2

Chair: Dr Kamran Soomro

A Differentiable Architecture Search Approach for Few-shot Image Classification

Chunmao He, Lingyun Zhang, Songqing Huang, Pingjian Zhang

CNN-Transformer hybrid architecture for early fire detection

Chenyue Yang, Yixuan Pan, Yichao Cao, Xiaobo Lu

Chinese Character Style Transfer Model Based On Convolutional Neural Network

Weiran Chen, Chunping Liu, Yi Ji

End-to-end large-scale image retrieval network with convolution and vision transformers

Qing Zhang, Feilong Bao, Xiangdong Su, Weihua Wang, Guanglai Gao

Dual Branch Network Towards Accurate Printed Mathematical Expression Recognition

Yuqing Wang, Zhenyu Weng, Zhaokun Zhou, Shuaijian Ji, Zhongjie Ye, Yuesheng Zhu

AFS: Attention using First and Second order information to enrich features

Yan Zuo, Junjie Lv, Huiwei Wang

Ensemble Ranking for Image Retrieval via Deep Hash

Donggen Li, Dawei Dai, Hongyuan Shan, Shunying Xia, Yulong Xia

11:15 - 13:00

Session 17, Image Processing

Remote Session, Remote Room 3

Chair: Dr Steve Battle

Adaptive Channel Encoding Transformer for Point Cloud Analysis

Guoquan Xu, Hezhi Cao, Yifan Zhang, Yanxin Ma, Jianwei Wan, Ke Xu

BPGG: Bidirectional Prototype Generation and Guidance Network for Few-shot Anomaly Localization

Junhang Zhang, Zisong Zhuang, Junjie Xu, Tianlong Ma, Liang He

CoPrGAN: Image-to-Image translation via content preservation

Xiaoming Yu, Gan Zhou

Data Augmented Dual-Attention Interactive Image Classification Network

Zhu Qiangxi, Li Zhixin

Deep dictionary pair learning for SAR image classification

Kang Wei, Jiwen Dong, Wei Hu, Sijie Niu, Hui Zhao, Xizhan Gao

ARB U-Net: An Improved Neural Network for Suprapatellar Bursa Effusion Ultrasound Image Segmentation

Zhengyu Wang, Qi Yang, Han Liu, Le Mao, Haijiang Zhu, Xiaoyu Gao

Cross-domain Learning for Reference-based Sketch Colorization with Structural And Colorific Strategy

Haowei Zhong, Xianzhi Tu, Hailong Liu, Yulu Fu, Jinrong Cui

11:15 - 13:00

Session 18, Neural Network Theory & Natural language processing

Remote Session, Remote Room 4

Chair: Dr Elias Pimenidis

MTHGAT: a neural multi-task model for aspect category detection and aspect term sentiment analysis on restaurant reviews

Ge Liang, Li Jun

Targeted Aspect-Based Sentiment Analysis by Utilizing Dynamic Aspect Representation

Siqi Miao, Meilian Lu

Multi-task Alignment Scheme for Span-level Aspect Sentiment Triplet Extraction

Zefang Zhao, Yuyang Liu, Haibo Wo, Zhaojuan Yue, Jun Li

SSMFRP: Semantic Similarity Model for Relation Prediction in KBQA Based on Pre-trained Models

Ziming Wang, Xirong Xu, Xinzi Li, Xiaoying Song, Xiaopeng Wei, Degen Huang

SubCrime: Counterfactual Data Augmentation for Target Sentiment Analysis

Wei Chen, Lulu Wang, Jinglong Du, Zhongshi He

Robust Logo Detection across Large Style Variations

Zhiyuan Zhao, Qingjie Liu

Towards Robust Uncertainty Estimation in the Presence of Noisy Labels

Chao Pan, Bo Yuan, Wei Zhou, Xin Yao

11:15 - 13:00

Session 19, Graphical Models

Remote Session, Remote Room 5

Chair: Dr. Rafet Durgut

Low-Resource Similar Case Matching in Legal Domain

Jingxin Fang, Xuwei Li, Yiguang Liu

CNN-Transformer hybrid architecture for early fire detection

Yan Hongyu, Wu Zhihong, Lu Li

Parallel Message Passing in Dual-space on Graphs

Zhenglin Yu, Hui Yan

Parallel Relationship Graph to Improve Multi-Document Summarization

Menghua Lu, Lijia Liang, Gongshen Liu

Multi-view Cascading Spatial-temporal Graph Neural Network for Traffic Flow Forecasting

Zibo Liu, Kaiqun Fu, Xiaotong Liu

Multi spatial and temporal for human motion prediction

Pengxiang Su, Xuanjing Shen, Haipeng Chen

SNNNet: Specific Node Network of Human Parsing

Zhenyang Wang, Shaoyang Wang, Pingmu Huang, Tiejun Lv

14:00-15:00

Session 20, Keynote 3: "Our part in the intelligent machine vision revolution"

Hybrid Session, Room Hybrid 1 - Keynote

Chair: Dr Elias Pimenidis

Keynote Speaker: Prof. Lyndon Smith

University of the West of England, UK.

15:00 - 16:45

Session 21, Machine learning & Recommender Systems

Hybrid Session, Hybrid Room 1

Chair: Dr Elias Pimenidis

Reject Options for Incremental Regression Scenarios

Jonathan Jakob, Martina Hasenjäger, Barbara Hammer

Conditioned Variational Autoencoder for top-N item recommendation

Tommaso Carraro, Mirko Polato, Luca Bergamin, Fabio Aiolfi

Two-Dimensional Encoding Method for Neural Synthesis of Tabular Transformation by Example

Yoshifumi Ujibashi, Atsuhiko Takasu

FedNet2Net: Saving Communication and Computations in Federated Learning with Model Growing

Amit Kumar Kundu, Joseph Jaja

SVM Ensembles on a Budget

David Nevado, Gonzalo Martínez-Muñoz, Alberto Suárez

Stream-based Active Learning with Verification Latency in Non-stationary Environments

Andrea Castellani, Sebastian Schmitt, Barbara Hammer

Subspace Clustering Multi-Module Self-Organizing Maps with two-stage Learning

Marcondes Silva Júnior, Aluizio Araújo

15:00 - 16:45

Session 22, Unsupervised NN & Natural language processing

Hybrid Session, Hybrid Room 2

Chair: Prof. Ikuko Nishikawa

Unsupervised Domain Adaptation using Temporal Association for Segmentation and its Application to C. elegans Time-lapse Images

Hiroaki Nozaki, Yukako Tohsato

Learning Flexible Translation between Robot Actions and Language Descriptions

Ozan Özdemir, Matthias Kerzel, Cornelius Weber, Jae Hee Lee, Stefan Wermter

Unsupervised Multi-View Multi-Person 3D Pose Estimation Using Reprojection Error

Diógenes Wallis de França Silva, João Paulo Silva Do Monte Lima, David Macêdo, Cleber Zanchettin, Diego Gabriel Francis Thomas, Hideaki Uchiyama, Veronica Teichrieb

Learning Visually Grounded Human-Robot Dialog in a Hybrid Neural Architecture

Xiaowen Sun, Cornelius Weber, Matthias Kerzel, Tom Weber, Mengdi Li, Stefan Wermter

Word Embeddings with Fuzzy Ontology Reasoning for Feature Learning in Aspect Sentiment Analysis

Asmaa Hashem Sweidan, Nashwa El-Bendary, Haytham Al-Feel

A Novel Approach to Train Diverse Types of Language Models for Health Mention Classification of Tweets

Pervaiz Iqbal Khan, Imran Razzak, Andreas Dengel, Sheraz Ahmed

Analysis of COVID-19 5G Conspiracy Theory Tweets Using Sentence BERT Embedding

Or Elroy, Abraham Yosipof

15:00 - 16:45

Session 23, Various themes

Remote Session, Remote Room 1

Chair: Prof. Jim Smith

AMMUNIT: An Attention-based Multimodal Multi-domain UNsupervised Image-to-image Translation Framework

Lei Luo, William Hsu

Self-supervised Detransformation Autoencoder for Representation Learning in Open Set Recognition

Jingyun Jia, Philip Chan

LogBERT-BiLSTM: Detecting Malicious Web Requests

Levi da Silva Ramos Júnior, Adriano L. I. Oliveira, David Macêdo, Cleber Zanchettin

StTime-Net: Combining both Historical and Textual Factors for Stock Movement Prediction

Hy Dang, Minh Nguyen, Bo Mei

Training 1-bit Networks on a Sphere: A Geometric Approach

Luis Guerra, Ajanthan Thalaiyasingam, Gil Avraham, Yan Zuo, Tom Drummond

Making Images Resilient to Adversarial Example Attacks

Shixin Tian, Ying Cai, Forrest Bao, Ramakrishna Oruganti

DOT-VAE: Disentangling One Factor at a Time

Vaishnavi Patil, Matthew Evanusa, Joseph Jaja

18:00 – 19:00 Boat trip to Bristol Floating Harbour

Departure Location and details will be announced at the conference

Thursday 8/9/2022

[Registration, Demo & Support Room](#)

09:00 - 10:45

Session 24, Various themes

Remote Session, Remote Room 1

Chair: Prof. Zaheer Khan

InvisibiliTee: Angle-agnostic Cloaking from Person-Tracking Systems with a Tee

Yaxian Li, Bingqing Zhang, Guoping Zhao, Mingyu Zhang, Jiajun Liu, Ziwei Wang, Jirong Wen

Why Deeper Graph Neural Network Performs Worse? Discussion and Improvement about Deep GNNs

Yuta Yajima, Akihiro Inokuchi

Analytical Comparison between the Pattern Classifiers Based upon a Multilayered Perceptron and Probabilistic Neural Network in Parallel Implementation

Katsumi Takahashi, Shunpei Morita, Tetsuya Hoya

BERT-based Scientific Paper Quality Prediction

Taiki Sasaki, Yasuaki Ito, Koji Nakano, Akihiko Kasagi

Efficient Search of Multiple Neural Architectures with Different Complexities via Importance Sampling

Yuhei Noda, Shota Saito, Shinichi Shirakawa

Adaptive Online Domain Incremental Continual Learning

Nuwan Gunasekara, Heitor Gomes, Albert Bifet, Bernhard Pfahringer

Self-organization of a Dynamical Orthogonal Basis Acquiring Large Memory Capacity in Modular Reservoir Computing

Yuji Kawai, Jihoon Park, Ichiro Tsuda, Minoru Asada

A comparison of neural network architectures for malware classification based on Noriben operation sequences

Rajchada Chanajitt, Bernhard Pfahringer, Heitor Murilo Gomes

09:00 - 10:45

Session 25, Image Processing

Remote Session, Remote Room 2

Chair: Dr Antisthenis Tsompanas

Dep-ViT: Uncertainty Suppression Model Based on Facial Expression Recognition in Depression Patients

Jiayu Ye, Gang Fu, Liu Yang, Guanwei Cheng, Qingxiang Wang

Multi-Class Lane Semantic Segmentation of Expressway Dataset based on Aerial View

Yongnian Fan, Zhiguang Wang, Cheng Chen, Xue Zhang, Qiang Lu

Makeup transfer based on Generative Adversarial Network for large angle spatial misalignment

Cairun Wang, Weiling Cai, Zhiwei Li

Images Structure Reconstruction from fMRI by Unsupervised Learning based on VAE

Zhiwei Zhao, Haodong Jing, Jianji Wang, Weihua Wu, Yongqiang Ma

Deepfake Video Detection Exploiting Binocular Synchronization

Wenjie Wang, Zhongyuan Wang, Guangcheng Wang, Qin Zou

Ensemble of One-Class Classifiers based on multi-level hidden representations abstracted from convolutional Autoencoder for Anomaly Detection

Xin-Tan Wang, Jian-Wei Liu

Inter-subtask Consistent Representation Learning for Visual Commonsense Reasoning

Kexin Liu, Shaojuan Wu, Xiaowang Zhang, Song Wang

09:00 - 10:45

Session 26, Neural Network Models

Remote Session, Remote Room 3

Chair: Dr Kamran Soomro

A Spiking Neural Network based on Neural Manifold for Augmenting Intracortical Brain-Computer Interface Data

Shengjie Zheng, Wenyi Li, Lang Qian, Chenggang He, Xiaojian Li

An Improved Lightweight YOLOv5 Model Based on Attention Mechanism for Face Mask Detection

Sheng Xu, Zhanyu Guo, Yuchi Liu, Jingwei Fan, Xuxu Liu

Dynamic Vision Sensor Based Gesture Recognition Using Liquid State Machine

Xun Xiao, Wang Lei, Xiaofan Chen, Lianhua Qu, Shasha Guo, Wang Yao, Ziyang Kang

ML-FORMER Forecasting by Neighborhood and Long-Range Dependencies

Zengxiang Ke, Yangguang Cui, Liying Li, Tongquan Wei

Attention Awareness Multiple Instance Neural Network

Jingjun Yi, Beichen Zhou

Context Reasoning Attention Network: Generating Plausible Distractors for Multi-Choice Questions

Mingchao Li, Liuyin Wang, Haozhuang Liu, Wei Wang, Hai-Tao Zheng

Efficient and Accurate Text Detection Combining Differentiable Binarization with Semantic Segmentation

Yue Liu, Ying Shi, Chaojun Lin, Jie Hua, Ziqi Huang

09:00 - 10:45

Session 27, Features Based Learning

Remote Session, Remote Room 4

Chair: Prof. Chrisina Jayne

Heterogeneous Graph Neural Network for Multi-Behavior Feature-Interaction Recommendation

Li Ma, Zheng Chen, Yingxun Fu, Yang Li

Continual Learning Based on Knowledge Distillation and Representation Learning

Xiu-Yan Chen, Jian-Wei Liu, Wen-Tao Li

Feature Recalibration Network for Salient Object Detection

Zhenshan Tan, Xiaodong Gu

Feature Fusion Distillation

Chao Tan, Jie Liu

JointFusionNet: Parallel learning human structural local and global joint features for 3D human pose estimation

Zhiwei Yuan, Yaping Yan, Songlin Du, Takeshi Ikenaga

Boosting Feature-Aware Network for Salient Object Detection

Jianwei Zheng, Yubin Gu, Yuchao Feng, Jinshan Xu, Meiyu Zhang

Fire detection based on Improved-YOLOv5s

Mengdong Zhou, Jianjun Li, Shuai Liu

09:00 - 10:45

Session 28, Various themes

Remote Session, Remote Room 5

Chair: Mr Nathan Duran

Trajectory-based Mobile Game Bots Detection with Gaussian Mixture Model

Yueyang Su, Di Yao, Jingwei Li, Baoli Wang, Jingping Bi, Shiwei Zhao, Runze Wu, Jianrong Tao, Hao Deng

Towards Both Accurate and Robust Neural Networks without Extra Data

Faqiang Liu, Rong Zhao

Visual Relation-Aware Unsupervised Video Captioning

Puzhao Ji, Meng Cao, Yuexian Zou

The Parallelization and Optimization of K-means Algorithm Based on MGPUSim

Zhangbin Mo, Yaobin Wang, Qingming Zhang, Guangbing Zhang, Mingfeng Guo, Yaqing Zhang, Chao Shen

PSP-MVSNet: Deep Patch-based Similarity Perceptual for Multi-view Stereo Depth Inference

Leiping Jie, Hui Zhang

11:15 - 13:00

Session 29, Convolutional Neural Networks

Hybrid Session, Hybrid Room 1

Chair: Prof. Igor Farkaš

Neural Architecture Search for Low-Precision Neural Networks

Binyi Wu, Bernd Waschneck, Christian Mayr

RegionDrop: Fast Human Pose Estimation using Annotation-aware Spatial Sparsity

Youki Sada, Seiya Shibata, Yuki Kobayashi, Takashi Takenaka

Hyperspectral Endoscopy using Deep Learning for Laryngeal Cancer Segmentation

Felix Meyer-Veit, Rania Rayyes, Andreas Gerstner, Jochen Steil

Autonomous Driving Model Defense Study on Hijacking Adversarial Attack

Kabid Hassan Shibly, Md Delwar Hossain, Hiroyuki Inoue, Yuzo Taenaka, Youki Kadobayashi

Examining the Proximity of Adversarial Examples to Class Manifolds in Deep Networks

Štefan Pócoš, Iveta Bečková, Igor Farkaš

GH-CNN: A new CNN for coherent hierarchical classification

Mona Sabrine Mayouf, Florence Dupin de Saint-Cyr

11:15 - 13:00

Session 30, Image Processing

Remote Session, Remote Room 1

Chair: Dr Antisthenis Tsompanas

Spatial Foreground Bigraph Matching For Generalizable Person Re-Identification

Jiixin Zhang, Wei Yang

Semantic Diversity Image Translation Based on Deep Feature Difference and Attention Mechanism

Le Xu, Weiling Cai, Zhiwei Li, Cairun Wang

TSN-CA: A Two-Stage Network with Channel Attention for Low-Light Image Enhancement

Xinxu Wei, Xianshi Zhang, Yongjie Li

Mutil-level Local Alignment and Semantic Matching Network for Image-Text Retrieval

Zhukai Jiang, Zhichao Lian

NAS4FBP: Facial Beauty Prediction based on Neural Architecture Search

Pingjian Zhang, Yuankai Liu

Object detector with recursive feature pyramid and key content-only attention

Yuchao Lu, Tao Zhang, Jiali Jin, Li Zhang

Two-Stream Interactive Memory Network for Video Facial Expression Recognition

Lingyu Chen, Yong Ouyang, Ranyi Xu, Sisi Sun, Yawen Zeng

11:15 - 13:00

Session 31, Relational Learning

Remote Session, Remote Room 2

Chair: Dr Steve Battle

Attentional Local Contrastive Learning for Face Forgery Detection

Yasuaki Ito, Koji Nakano, Akihiko Kasagi

Multi-Level Proposal Relations Aggregation for Video Object Detection

Chongkai Yu, Wenjie Chen, Bing Wu

Context-Assisted Attention for Image Captioning

Zheng Lian, Rui Wang, Haichang Li, Xiaohui Hu
Relation-aware Global-augmented Transformer for TextCaps

Qiang Li, Bing Li, Can Ma

Addressing Contradiction between Reconstruction and Correlation Maximization in Deep Canonical Correlation Autoencoders

Qixing Sun, Xiaodong Jia, Xiao-Yuan Jing

Reinforcement learning for the pickup and delivery problem

Fagui Liu, Chengqi Lai, Lvshengbiao Wang

Towards Relational Multi-Agent Reinforcement Learning via Inductive Logic Programming

Guangxia Li, Gang Xiao, Junbo Zhang, Jia Liu, Yulong Shen

11:15 - 13:00

Session 32, Supervised Learning

Remote Session, Remote Room 3

Chair: Mr Nathan Duran

Contrastive Learning for Session-Based Recommendation

Yan Chen, Wanhui Qian, Dongqin Liu, Yipeng Su, Yan Zhou, Jizhong Han, Ruixuan Li

Knowledge-aware Self-supervised Graph Representation Learning for Recommendation

Yeheng Sun, Jinghua Zhu, Heran Xi

Meta-Style:Few-Shot Learning Dataset for Social Media Field

Yuncong Peng, Boyi Fu, Xiaolin Qin

Supervised Learning for Convolutional Neural Network with Barlow Twins.

Ramyaa Murugan, Jonathan Mojoo, Takio Kurita

Hypergraph variational autoencoder for multimodal semi-supervised representation learning

Jingquan liu, Xiaoyong Du, Yuanzhe Li, Weidong Hu

Domain Adaptative Semantic Segmentation by Fine-grained Alignment

Zhixin Li, Wei Li, Jia Zhang

Discriminative and Robust Analysis Dictionary Learning for Pattern Classification

Kun Jiang, Lei Zhu, Zheng Liu

11:15 - 13:00

Session 33, Graphical Models

Remote Session, Remote Room 4

Chair: Prof. Zaheer Khan

Weight-Aware Graph Contrastive Learning

Hang Gao, Jiangmeng Li, Peng Qiao, Changwen Zheng

Towards Understanding the Effect of Node Features on the Predictions of Graph Neural Networks

Qiming Li, Zhao Zhang, Boyu Diao, Yongjun Xu, Chao Li

Temporal Graph Transformer for Dynamic Network

Zehong Wang, Qi Li, Donghu Yu, Xiaolong Han

ST2PE: Spatial and Temporal Transformer for Pose Estimation

Yuan Wu, Yanlu Cai, Rui Feng, Cheng Jin

Weighted Pooling from Salient Regions for Place Recognition

Yaojun Ou, Xiaofeng Zhang, Zhe Chen, Mei Wang

Spatial-Temporal Attention Network for Crime Prediction with Adaptive Graph Learning

Mingjie Sun, Pengyuan Zhou, Hui Tian, Yong Liao, Haiyong Xie

Utilize spatial prior in Ground Truth: Spatial-enhanced Loss for Semantic Segmentation

Yu Zhang, Fagui Liu, Quan Tang

14:00 – 15:00

Session 34, Keynote 4: “Emergent Behaviours in Multi-Agent Systems with Evolutionary Game Theory”

Hybrid Session, Room Hybrid 1 - Keynote

Chair: Prof. Chrisina Jayne

Keynote Speaker: Prof. The Anh Han,

Teesside University

15:00 – 16:30

ENNS General Assembly

Friday 9/9/2022

[Registration, Demo & Support Room](#)

09:45 - 11:30

Session 35, Various themes

Hybrid Session, Hybrid Room 1

Chair: Dr Daniel Stamate

Message Passing Neural Networks for Hypergraphs

Sajjad Heydari, Lorenzo Livi

A unified view on Self-Organizing Maps (SOMs) and Stochastic Neighbor Embedding (SNE)

Thibaut Kulak, Anthony Fillion, François Blayo

SAM-kNN Regressor for Online Learning in Water Distribution Networks

Jonathan Jakob, André Artelt, Martina Hasenjäger, Barbara Hammer

Linear Self-Attention Approximation via Trainable Feedforward Kernel

Uladzislau Yorsh, Alexander Kovalenko

Taking care of our drinking water: Dealing with Sensor Faults in Water Distribution Networks

Valerie Vaquet, André Artelt, Johannes Brinkrolf, Barbara Hammer

A Neural Network Approach to Estimating Color Reflectance with Product Independent Models

Asei Akanuma, Daniel Stamate

09:45 - 11:30

Session 36, Convolutional Neural Networks

Remote Session, Remote Room 1

Chair: Dr Elias Pimenidis

Video Motion Perception for Self-supervised Representation Learning

Wei Li, Dezhao Luo, Bo Fang, Xiaoni Li, Yu Zhou, Weiping Wang

TFCNs: A CNN-Transformer Hybrid Network for Medical Image Segmentation

Zihan Li, Dihan Li, Cangbai Xu, Weice Wang, Qingqi Hong, Qingde Li, Jie Tian

SDCN: A Species-Disease Hybrid Convolutional Neural Network for Plant Disease Recognition

Yiqi Yang

Loop Closure Detection based on Siamese ConvNet Features and Geometrical Verification for Visual SLAM

Zhe Chen, Xiaofeng Zhang, Yaojun Ou, Mei Wang

Lip Reading Using Deformable 3D Convolution and Channel-Temporal Attention

Chen Peng, Jun Li, Jie Chai, Zhongqiu Zhao, Housen Zhang, Weidong Tian

Multi-Sensor Data Fusion for Short-Term Traffic Flow Prediction: A Novel Multi-Channel Data Structure integrated with Mixed-Pointwise Convolution and Channel Attention Mechanism

Ruijun Feng, Mingzhou Chen

Using Multiple Heads to Subsize Meta-Memorization Problem

Lu Wang, K. L. Eddie Law

09:45 - 11:30

Session 37, Features Based Learning

Remote Session, Remote Room 2

Chair: Dr Nikolaos Polatidis

Multi-scale Feature Extraction and Fusion for Online Knowledge Distillation

Panpan Zou, Yinglei Teng, Tao Niu

Multi-scale Vertical Cross-layer Feature Aggregation and Attention Fusion Network for Object Detection

Wenting Gao, Xiaojuan Li, Yu Han, Yue Liu

Multi-spectral dynamic feature encoding network for image demoiréing

Qiang Dai, Xi Cheng, Li Zhang

Effective ML-block and Weighted IoU Loss for Object Detection

Zhenxin Yuan, Xin Xiao, Shuai Zhao, Linlin Jiang, Zhongtao Li

Robust Sparse Learning Based Sensor Array Optimization for Multi-Feature Fusion Classification

Leilei Zhao, Fengchun Tian, Junhui Qian, Ran Liu, Anyan Jiang

Adaptive Compatibility Matrix for Superpixel-CRF

Boquan Zhou, Chunpeng Li

Stimulates Potential for Knowledge Distillation

Haifeng Qing, Jialiang Tang, Xiaoyan Yang, Xinlei Huang, Honglin Zhu, Ning Jiang

09:45 - 11:30

Session 38, Recommender Systems

Remote Session, Remote Room 3

Chair: Dr Antisthenis Tsompanas

Spatial-Temporal Semantic Generative Adversarial Networks for Flexible Multi-step Urban Flow Prediction

Lincan Li, Jichao Bi, Kaixiang Yang, Fengji Luo

CKEN: Collaborative knowledge-aware enhanced network for recommender systems

Wei Zeng, Jiwei Qin, Xiaole Wang

A Multi-stack Denoising Autoencoder for QoS Prediction

Mengwei Wu, Qin Lu, Yingxue Wang

Sailfish: A Fast Bayesian Change Point Detection Framework with Gaussian Process for Time Series

Haizhou Du, Yang Zheng

A Long and Short Term Preference Model for Next Point of Interest Recommendation

Zhaoqi Leng, Yanheng Liu, Xu Zhou, Xueying Wang, Xican Wang

Personalized headline generation with enhanced user interest perception

Kui Zhang, Guangquan Lu, Guixian Zhang, Zhi Lei, Lijuan Wu

Topic-Grained Text Representation-based Model for Document Retrieval

Mengxue Du, Shasha Li, Jie Yu, Jun Ma, Bin Ji, Huijun Liu, Wuhang Lin, Zibo Yi

09:45 - 11:30

Session 39, Recurrent Networks & Evolutionary NN

Remote Session, Remote Room 4

Chair: TBC

Research on USV Path Planning Method Based on Improved Option-Critical Algorithm

Jian Gao, Dawei Zhao, Xiaogong Lin

Bi-level optimization method for automatic reward shaping of reinforcement learning

Ludi Wang, Zhaolei Wang, Qinghai Gong

Category-Guided Localization Network for Visual Sound Source Separation

Huasen Wang, Lingling Gao, Qianchao Tan, Chenxu Zhao

Improving Stylized Image Captioning with Better Use of Transformer

Yutong Tan, Zheng Lin, Huan Liu, Fan Zuo

MT-TCCT: Multi-task Learning for Multimodal Emotion Recognition

Yandan Wang, Zhongtang Chen, Shuang Chen, Yu Zhu
Gaussian Mixture Model-based Registration Network for Point Clouds with Partial Overlap
Xiang Li, Jianwen Sun, Chung-Ming Own, Wenyan Tao

12:00 - 13:30

Session 40, Various themes

Hybrid Session, Hybrid Room 1

Chair: Dr Paolo Masulli

Investigating Current-based and Gating Approaches for Accurate and Energy-efficient Spiking
Recurrent Neural Networks

Manon Dampfhofer, Thomas Mesquida, Alexandre Valentian, Lorena Anghel

NeoSLAM: Neural Object SLAM for Loop Closure and Navigation

Raoui Younès, Weber Cornelius, Wermter Stefan

Time Series Forecasting Models Copy the Past: How to Mitigate

Chrysoula Kosma, Giannis Nikolentzos, Nancy Xu, Michalis Vazirgiannis

Using Orientation to Distinguish Overlapping Chromosomes

Daniel Kluvanec, Thomas B. Phillips, Kenneth J. W. McCaffrey, Noura Al Moubayed

More Diverse Training, Better Compositionality! Evidence from Multimodal Language
Learning.

Caspar Volquardsen, Jae Hee Lee, Cornelius Weber, Stefan Wermter

Efficient LSTM Training with Eligibility Traces

Michael Hoyer, Shahram Eivazi, Sebastian Otte

12:00 - 13:30

Session 41, Various themes

Hybrid Session, Hybrid Room 2

Chair: Dr Matthias Kerzel

Phenotype anomaly detection for biological dynamics data using a deep generative model

*Eisuke Ito, Takaya Ueda, Ryo Takano, Yukako Tohsato, Koji Kyoda, Shuichi Onami,
Ikuko Nishikawa*

Understanding Reinforcement Learning Based Localisation as a Probabilistic Inference
Algorithm

Taku Yamagata, Raul Santos-Rodriguez, Robert Piechocki, Peter Flach

O-LGMD: An Opponent Colour LGMD-based Model for Collision Detection with Thermal
Images at Night

*Yicheng Zhang, Jiannan Zhao, Mu Hua, Hao Luan, Mei Liu, Fang Lei, Heriberto
Cuayahuitl, Shigang Yue*

Transfer learning approach towards a smarter recycling

Nermeen Abou Baker, Jonas Stehr, Uwe Handmann

12:00 - 13:30

Session 42, Convolutional NN & NN Models

Remote Session, Remote Room 1

Chair: Prof. Nathan S. Netanyahu

Image Super-Resolution Using Deep RCSA Network

Yuheng Cao, Mengjie Zhou

Jacobian Ensembles Improve Robustness Trade-offs to Adversarial Attacks

Kenneth T. Co, David Martínez-Rego, Zhongyuan Hau, Emil C. Lupu

DensEMANN + Sparsification: Experiments for Further Shrinkig Already Small Automatically Generated DenseNet

Antonio García-Díaz, Hugues Bersini

A Folded Architecture for Hardware Implementation of A Neural Structure Using Izhikevich Model

Serhat Çağdaş, Neslihan Serap Şengör

Gesture MNIST: A New Free-Hand Gesture Dataset

Monika Schak, Alexander Gepperth

DeepArtist: A Dual-Stream Network for Painter Classification of Highly-Varying Image Resolutions

Doron Nevo, Eli David, Nathan S. Netanyahu

12:00 - 13:30

Session 43, Various themes

Remote Session, Remote Room 2

Chair: Dr. Nikolaos Polatidis

A New Model for Artificial Intuition

Marcello Trovati, Olayinka Johnny, Xiaolong Xu, Nikolaos Polatidis

DT2I: Dense Text-to-Image Generation from Region Descriptions

Stanislav Frolov, Prateek Bansal, Jörn Hees, Andreas Dengel

Perceiver Hopfield Pooling for Dynamic Multi-Modal and Multi-Instance Fusion

Dominik Rößle, Daniel Cremers, Torsten Schön

A novel LSTM-CNN architecture to forecast stock prices

Amol Dhaliwal, Nikolaos Polatidis, Elias Pimenidis

Word-by-Word Generation of Visual Dialog using Reinforcement Learning

Yuliia Lysa, Cornelius Weber, Dennis Becker, Stefan Wermter

13:30 – 14:00

[Session 44, Closing Session](#)

Hybrid Session, Hybrid Room 1

Chair: Prof. Stefan Wermter