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Igor Farkaš · Paolo Masulli ·  
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# Artificial Neural Networks and Machine Learning – ICANN 2021


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# Preface

Research on artificial neural networks has progressed over decades, in recent years being fueled especially by deep learning that has proven, albeit data-greedy, efficient in solving various, mostly supervised, tasks. Applications of artificial neural networks, especially related to artificial intelligence, affect our lives, providing new horizons. Examples range from autonomous car driving, virtual assistants, and decision support systems to healthcare data analytics, financial forecasting, and smart devices in our homes, just to name a few. These developments, however, also provide challenges, which were not imaginable previously, e.g., verification of raw data, explaining the contents of neural networks, and adversarial machine learning.

The International Conference on Artificial Neural Networks (ICANN) is the annual flagship conference of the European Neural Network Society (ENNS). Last year, due to the COVID-19 pandemic, we decided not to hold the conference but to prepare the ICANN proceedings in written form. This year, due to the still unresolved pandemic, the Organizing Committee, together with the Executive Committee of ENNS decided to organize ICANN 2021 online, since we felt the urge to allow research presentations and live discussions, following the now available alternatives of online conference organization. So for the first time, ENNS and the Organizing Committee prepared ICANN as an online event with all its challenges and sometimes unforeseeable events!

Following a long-standing successful collaboration, the proceedings of ICANN are published as volumes within the Lecture Notes in Computer Science Springer series. The response to this year's call for papers resulted, unexpectedly, in a record number of 557 article submissions (a 46% rise compared to previous year), of which almost all were full papers. The paper selection and review process that followed was decided during the online meeting of the Bratislava organizing team and the ENNS Executive Committee. The 40 Program Committee (PC) members agreed to check the submissions for the formal requirements and 64 papers were excluded from the subsequent reviews. The majority of the PC members have doctoral degrees (80%) and 75% of them are also professors. We also took advantage of filled-in online questionnaires providing the reviewers' areas of expertise. The reviewers were assigned one to four papers, and the papers with undecided scores also received reports from PC members which helped in making a final decision.

In total, 265 articles were accepted for the proceedings and the authors were requested to submit final versions. The acceptance rate was hence about 47% when calculated from all initial submissions. A list of PC members and reviewers who agreed to publish their names is included in the proceedings. With these procedures we tried to keep the quality of the proceedings high while still having a critical mass of contributions reflecting the progress of the field. Overall we hope that these proceedings will contribute to the dissemination of new results by the neural network community during these challenging times and we hope that we can have a physical ICANN in 2022.

Finally, we very much thank the Program Committee and the reviewers for their invaluable work.

September 2021

Igor Farkaš  
Paolo Masulli  
Sebastian Otte  
Stefan Wermter

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# Contents – Part I

## Adversarial Machine Learning

An Improved (Adversarial) Reprogramming Technique for Neural Networks . . . . .	3
<i>Eliska Kloberdanz, Jin Tian, and Wei Le</i>	
Adversarial Robustness in Deep Learning: Attacks on Fragile Neurons . . . . .	16
<i>Chandresh Pravin, Ivan Martino, Giuseppe Nicosia, and Varun Ojha</i>	
How to Compare Adversarial Robustness of Classifiers from a Global Perspective . . . . .	29
<i>Niklas Risse, Christina Göpfert, and Jan Philip Göpfert</i>	
Multiple-Model Based Defense for Deep Reinforcement Learning Against Adversarial Attack. . . . .	42
<i>Patrick P. K. Chan, Yaxuan Wang, Natasha Kees, and Daniel S. Yeung</i>	
Neural Paraphrase Generation with Multi-domain Corpus. . . . .	54
<i>Lin Qiao, Yida Li, and ChenLi Zhong</i>	
Leveraging Adversarial Training to Facilitate Grammatical Error Correction . . . . .	67
<i>Kai Dang, Jiaying Xie, and Jie Liu</i>	
Statistical Certification of Acceptable Robustness for Neural Networks . . . . .	79
<i>Chengqiang Huang, Zheng Hu, Xiaowei Huang, and Ke Pei</i>	
Model Extraction and Adversarial Attacks on Neural Networks Using Switching Power Information . . . . .	91
<i>Tommy Li and Cory Merkel</i>	

## Anomaly Detection

CmaGraph: A TriBlocks Anomaly Detection Method in Dynamic Graph Using Evolutionary Community Representation Learning. . . . .	105
<i>Wenqin Lin, Xianyu Bao, and Mark Junjie Li</i>	
Falcon: Malware Detection and Categorization with Network Traffic Images . . . . .	117
<i>Peng Xu, Claudia Eckert, and Apostolis Zarras</i>	

<b>Attention-Based Bi-LSTM for Anomaly Detection on Time-Series Data. . . . .</b>	<b>129</b>
<i>Sanket Mishra, Varad Kshirsagar, Rohit Dwivedula, and Chittaranjan Hota</i>	
<b>Semi-supervised Graph Edge Convolutional Network for Anomaly Detection . . . . .</b>	<b>141</b>
<i>Zhicheng Lun, Xiaoyan Gu, Haihui Fan, Bo Li, and Weiping Wang</i>	
<b>Feature Creation Towards the Detection of Non-control-Flow Hijacking Attacks . . . . .</b>	<b>153</b>
<i>Zander Blasingame, Chen Liu, and Xin Yao</i>	
 <b>Attention and Transformers I</b>	
<b>An Attention Module for Convolutional Neural Networks . . . . .</b>	<b>167</b>
<i>Baozhou Zhu, Peter Hofstee, Jinho Lee, and Zaid Al-Ars</i>	
<b>Attention-Based 3D Neural Architectures for Predicting Cracks in Designs. . .</b>	<b>179</b>
<i>Naresh Iyer, Sathyanarayanan Raghavan, Yiming Zhang, Yang Jiao, and Dean Robinson</i>	
<b>Entity-Aware Biaffine Attention for Constituent Parsing. . . . .</b>	<b>191</b>
<i>Xinyi Bai, Nan Yin, Xiang Zhang, Xin Wang, and Zhigang Luo</i>	
<b>Attention-Based Multi-view Feature Fusion for Cross-Domain Recommendation . . . . .</b>	<b>204</b>
<i>Feifei Dai, Xiaoyan Gu, Zhuo Wang, Bo Li, Mingda Qian, and Weiping Wang</i>	
<b>Say in Human-Like Way: Hierarchical Cross-modal Information Abstraction and Summarization for Controllable Captioning . . . . .</b>	<b>217</b>
<i>Xiaoyi Wang and Jun Huang</i>	
<b>DAEMA: Denoising Autoencoder with Mask Attention . . . . .</b>	<b>229</b>
<i>Simon Tihon, Muhammad Usama Javaid, Damien Fourure, Nicolas Posocco, and Thomas Peel</i>	
<b>Spatial-Temporal Traffic Data Imputation via Graph Attention Convolutional Network . . . . .</b>	<b>241</b>
<i>Yongchao Ye, Shiyao Zhang, and James J. Q. Yu</i>	
<b>EGAT: Edge-Featured Graph Attention Network. . . . .</b>	<b>253</b>
<i>Ziming Wang, Jun Chen, and Haopeng Chen</i>	

## Attention and Transformers II

Knowledge Graph Enhanced Transformer for Generative Question Answering Tasks . . . . .	267
<i>Chaojie Liang, Jingying Yang, and Xianghua Fu</i>	
GAttANet: Global Attention Agreement for Convolutional Neural Networks. . . . .	281
<i>Rufin VanRullen and Andrea Alamia</i>	
Classification Models for Partially Ordered Sequences . . . . .	294
<i>Stephanie Ger, Diego Klabjan, and Jean Utke</i>	
TINet: Multi-dimensional Traffic Data Imputation via Transformer Network . . . . .	306
<i>Xiaozhuang Song, Yongchao Ye, and James J. Q. Yu</i>	
Sequential Self-Attentive Model for Knowledge Tracing . . . . .	318
<i>Xuelong Zhang, Juntao Zhang, Nanzhou Lin, and Xiandi Yang</i>	
Multi-object Tracking Based on Nearest Optimal Template Library . . . . .	331
<i>Ran Tian, Xiang Zhang, Donghang Chen, and Yujie Hu</i>	
TSTNet: A Sequence to Sequence Transformer Network for Spatial-Temporal Traffic Prediction . . . . .	343
<i>Xiaozhuang Song, Ying Wu, and Chenhan Zhang</i>	

## Audio and Multimodal Applications

A Multimode Two-Stream Network for Egocentric Action Recognition . . . . .	357
<i>Ying Li, Jie Shen, Xin Xiong, Wei He, Peng Li, and Wenjie Yan</i>	
Behavior of Keyword Spotting Networks Under Noisy Conditions . . . . .	369
<i>Anwesh Mohanty, Adrian Frischknecht, Christoph Gerum, and Oliver Bringmann</i>	
Robust Stroke Recognition via Vision and IMU in Robotic Table Tennis. . . . .	379
<i>Yapeng Gao, Jonas Tebbe, and Andreas Zell</i>	
AMVAE: Asymmetric Multimodal Variational Autoencoder for Multi-view Representation. . . . .	391
<i>Wen Youpeng, Lin Hongxiang, Guo Yiju, and Zhao Liang</i>	
Enhancing Separate Encoding with Multi-layer Feature Alignment for Image-Text Matching . . . . .	403
<i>Keyu Wen, Linyang Li, and Xiaodong Gu</i>	

<b>Bird Audio Diarization with Faster R-CNN . . . . .</b>	<b>415</b>
<i>Roman Shrestha, Cornelius Glackin, Julie Wall, and Nigel Cannings</i>	
<b>Multi-modal Chorus Recognition for Improving Song Search . . . . .</b>	<b>427</b>
<i>Jiaan Wang, Zhixu Li, Binbin Gu, Tingyi Zhang, Qingsheng Liu, and Zhigang Chen</i>	
<b>FaVoA: Face-Voice Association Favours Ambiguous Speaker Detection . . . .</b>	<b>439</b>
<i>Hugo Carneiro, Cornelius Weber, and Stefan Wermter</i>	
 <b>Bioinformatics and Biosignal Analysis</b>	
<b>Identification of Incorrect Karyotypes Using Deep Learning . . . . .</b>	<b>453</b>
<i>Jing Peng, Chengchuang Lin, Gansen Zhao, Aihua Yin, Hanbiao Chen, Li Guo, and Shuangyin Li</i>	
<b>A Metagraph-Based Model for Predicting Drug-Target Interaction on Heterogeneous Network. . . . .</b>	<b>465</b>
<i>Peng Ke, Yuqi Wen, Zhongnan Zhang, Song He, and Xiaochen Bo</i>	
<b>Evaluating Multiple-Concept Biomedical Hypotheses Based on Deep Sets . . .</b>	<b>477</b>
<i>Juncheng Ding and Wei Jin</i>	
<b>A Network Embedding Based Approach to Drug-Target Interaction Prediction Using Additional Implicit Networks . . . . .</b>	<b>491</b>
<i>Han Zhang, Chengbin Hou, David McDonald, and Shan He</i>	
 <b>Capsule Networks</b>	
<b>CNNapsule: A Lightweight Network with Fusion Features for Monocular Depth Estimation . . . . .</b>	<b>507</b>
<i>Yinchu Wang, Haijiang Zhu, and Mengze Liu</i>	
<b>Learning Optimal Primary Capsules by Information Bottleneck. . . . .</b>	<b>519</b>
<i>Ming-fei Hu, Jian-wei Liu, and Wei-min Li</i>	
<b>Capsule Networks with Routing Annealing . . . . .</b>	<b>529</b>
<i>Riccardo Renzulli, Enzo Tartaglione, Attilio Fiandrotti, and Marco Grangetto</i>	
<b>Training Deep Capsule Networks with Residual Connections . . . . .</b>	<b>541</b>
<i>Josef Gugglberger, David Peer, and Antonio Rodríguez-Sánchez</i>	

## Cognitive Models

Interpretable Visual Understanding with Cognitive Attention Network . . . . .	555
<i>Xuejiao Tang, Wenbin Zhang, Yi Yu, Kea Turner, Tyler Derr, Mengyu Wang, and Eirini Ntoutsis</i>	
A Bio-Inspired Mechanism Based on Neural Threshold Regulation to Compensate Variability in Network Connectivity . . . . .	569
<i>Jessica López-Hazas and Francisco B. Rodriguez</i>	
A Predictive Coding Account for Chaotic Itinerancy . . . . .	581
<i>Louis Annabi, Alexandre Pitti, and Mathias Quoy</i>	
A Computational Model of the Effect of Short-Term Monocular Deprivation on Binocular Rivalry in the Context of Amblyopia . . . . .	593
<i>Norman Seeliger and Jochen Triesch</i>	
Transitions Among Metastable States Underlie Context-Dependent Working Memories in a Multiple Timescale Network . . . . .	604
<i>Tomoki Kurikawa</i>	
<b>Author Index</b> . . . . .	615