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# Advances in Neural Networks – ISNN 2018

15th International Symposium on Neural Networks, ISNN 2018  
Minsk, Belarus, June 25–28, 2018  
Proceedings

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# Preface

This volume of *Lecture Notes in Computer Science* constitutes the proceedings of the 15th International Symposium on Neural Networks (ISNN 2018) held during June 25–28, 2018, in Minsk, Belarus. Thanks to the success of the previous events, ISNN has become a well-established series of popular and high-quality conferences on the theory and methodology of neural networks and their applications. This year's symposium was held in Minsk, the capital and largest city of Belarus with a population of over two million. ISNN aims at providing a high-level international forum for scientists, engineers, educators, and students to gather so as to present and discuss the latest progress in neural network research and applications in diverse areas. This symposium encouraged open discussion and exchange of ideas. No doubt it promoted research in the fields of neural networks and applications.

Based on the rigorous peer reviews by the Program Committee members and reviewers, 97 high-quality papers from 32 countries and regions were selected for publication in the LNCS proceedings. These papers cover many topics of neural network-related research including intelligent control, neurodynamic analysis, bio-signal, bioinformatics and biomedical engineering, clustering, classification, forecasting, models, algorithms, cognitive computation, machine learning, optimization. In addition to the contributed papers, the ISNN 2018 technical program included three keynote and plenary speeches by renowned scholars: Jose Principe (University of Florida, USA), Leszek Rutkowski (Czestochowa University of Technology, Poland), and Dacheng Tao (University of Sydney, Australia).

Many organizations and volunteers made great contributions toward the success of this symposium. We would like to express our sincere gratitude to Belarusian State University, Dalian University of Technology, and City University of Hong Kong for their sponsorship, the IEEE Computational Intelligence Society, the International Neural Network Society, Polish Neural Network Society, and Russian Neural Network Society for their technical co-sponsorship. We would also like to sincerely thank all the committee members for all their great efforts in organizing the symposium. Special thanks to the Program Committee members and reviewers whose insightful reviews and timely feedback ensured the high quality of the accepted papers and the smooth flow of the symposium. We would also like to thank Springer for their cooperation in publishing the proceedings in the prestigious *Lecture Notes in Computer Science* series. Finally, we would like to thank all the speakers, authors, and participants for their support.

April 2018

Tingwen Huang  
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# Contents

## Cognition Computation

Fast Convergent Capsule Network with Applications in MNIST . . . . .	3
<i>Xianli Zou, Shukai Duan, Lidan Wang, and Jin Zhang</i>	
A Neurodynamic Approach to Multiobjective Linear Programming . . . . .	11
<i>Man-Fai Leung and Jun Wang</i>	
Neural Network Model of Unconscious . . . . .	19
<i>Alexandr A. Ezhov</i>	
Formal Aspects of Streaming Recurrent Neural Networks . . . . .	29
<i>Vasiliy Osipov and Viktor Nikiforov</i>	
Approaches to Modeling of Nontrivial Cognitive Behavior. . . . .	37
<i>Vladimir G. Red'ko and Galina A. Beskhlebnova</i>	
Competitive Hyperparameter Balancing on Spiking Neural Network for a Fast, Accurate and Energy-Efficient Inference. . . . .	44
<i>Jeongho Kim and Dae-Shik Kim</i>	
Automatic Inference of Cross-Modal Connection Topologies for X-CNNs . . .	54
<i>Laurynas Karazija, Petar Veličković, and Pietro Liò</i>	
Complex-Valued Stacked Denoising Autoencoders . . . . .	64
<i>Călin-Adrian Popa</i>	
Complex-Valued Deep Belief Networks. . . . .	72
<i>Călin-Adrian Popa</i>	
Modeling of the Cognitive Activity of Simultaneous Interpretation Using the Theory of Information Images. . . . .	79
<i>Alexandr Y. Petukhov and Sofia A. Polevaya</i>	

## Models, Methods and Algorithms

Development of a Sensory-Neural Network for Medical Diagnosing . . . . .	91
<i>Igor Grabec, Eva Švegl, and Mihael Sok</i>	
Review of Pseudoinverse Learning Algorithm for Multilayer Neural Networks and Applications. . . . .	99
<i>Jue Wang, Ping Guo, and Xin Xin</i>	

Identification of Vessel Kinetics Based on Neural Networks via Concurrent Learning . . . . .	107
<i>Nan Gu, Lu Liu, Dan Wang, and Zhouhua Peng</i>	
Method to Improve the Performance of Restricted Boltzmann Machines . . . .	115
<i>Jing Yin, Qingyu Mao, Dayiheng Liu, Yong Xu, and Jiancheng Lv</i>	
Modeling Hysteresis Using Non-smooth Neural Networks . . . . .	124
<i>Yonghong Tan and Ruili Dong</i>	
The Implementation of a Pointer Network Model for Traveling Salesman Problem on a Xilinx PYNQ Board . . . . .	130
<i>Shenshen Gu, Tao Hao, and Shaofu Yang</i>	
Generalized Affine Scaling Trajectory Analysis for Linearly Constrained Convex Programming . . . . .	139
<i>Xun Qian and Li-Zhi Liao</i>	
Drift Compensation for E-Nose Using QPSO-Based Domain Adaptation Kernel ELM. . . . .	148
<i>Yulin Jian, Kun Lu, Changjian Deng, Tailai Wen, and Jia Yan</i>	
Convergence Analysis of Self-adaptive Immune Particle Swarm Optimization Algorithm . . . . .	157
<i>Jingqing Jiang, Chuyi Song, Huan Ping, and Chenggang Zhang</i>	
An Improved Artificial Fish Swarm Algorithm to Solve the Cutting Stock Problem . . . . .	165
<i>Chunying Cheng and Lanying Bao</i>	
A Hyper Heuristic Algorithm for Low Carbon Location Routing Problem . . .	173
<i>Zhenyu Qian, Yanwei Zhao, Shun Wang, Longlong Leng, and Wanliang Wang</i>	
Pulse Neuron Supervised Learning Rules for Adapting the Dynamics of Synaptic Connections . . . . .	183
<i>Vladimir Bondarev</i>	
An Artificial Neural Network for Solving Quadratic Zero-One Programming Problems . . . . .	192
<i>Wen Han, Su Yan, Xingnan Wen, Sitian Qin, and Guocheng Li</i>	
A New Parameter Identification Method for Type-1 TS Fuzzy Neural Network. . . . .	200
<i>Tao Gao, Long Li, Zhen Zhang, Zhanquan Sun, and Jian Wang</i>	

Performance Enhancement of Deep Reinforcement Learning Networks Using Feature Extraction . . . . .	208
<i>Joaquin Ollero and Christopher Child</i>	

### **Clustering, Classification, Learning, and Forecasting**

Online GRNN-Based Ensembles for Regression on Evolving Data Streams . . . . .	221
<i>Piotr Duda, Maciej Jaworski, and Leszek Rutkowski</i>	
A Broad Neural Network Structure for Class Incremental Learning . . . . .	229
<i>Wenzhang Liu, Haiqin Yang, Yüwen Sun, and Changyin Sun</i>	
WeiboCluster: An Event-Oriented Sina Weibo Dataset with Estimating Credit . . . . .	239
<i>Shiping Wen, Guanghua Ren, Yuting Cao, Zhenyuan Guo, Qiang Xiao, Zhigang Zeng, and Tingwen Huang</i>	
Robust Neural Networks Learning: New Approaches . . . . .	247
<i>Z. M. Shibzukhov</i>	
Data Cleaning and Classification in the Presence of Label Noise with Class-Specific Autoencoder . . . . .	256
<i>Weining Zhang, Dong Wang, and Xiaoyang Tan</i>	
Using the Wide and Deep Flexible Neural Tree to Forecast the Exchange Rate . . . . .	265
<i>Jing Xu, Peng Wu, Yuehui Chen, Hassan Dawood, and Qingfei Meng</i>	
An Immune Genetic K-Means Algorithm for Mongolian Elements Clustering . . . . .	273
<i>Chun Hua and Chun Ying Cheng</i>	
Classification of Concrete Strength Grade Using Nearest Neighbor Partitioning . . . . .	279
<i>Xuehui Zhu, Lin Wang, Bo Yang, Jin Zhou, Shiyuan Han, Yu Liu, Jifeng Guo, and Shuangrong Liu</i>	
An Efficient Extreme Learning Machine for Robust Regression . . . . .	289
<i>Decai Li and Yuqing He</i>	
Fourier Transform-Based Image Classification Using Complex-Valued Convolutional Neural Networks . . . . .	300
<i>Călin-Adrian Popa and Cosmin Cernăzanu-Glăvan</i>	
MHFlexDT: A Multivariate Branch Fuzzy Decision Tree Data Stream Mining Strategy Based on Hybrid Partitioning Standard . . . . .	310
<i>Xin Song, Han Wang, Huiyuan He, and Yakun Meng</i>	

Developments on Solutions of the Normalized-Cut-Clustering Problem Without Eigenvectors . . . . .	318
<i>Leandro Leonardo Lorente-Leyva, Israel David Herrera-Granda, Paul D. Rosero-Montalvo, Karina L. Ponce-Guevara, Andrés Eduardo Castro-Ospina, Miguel A. Becerra, Diego Hernán Peluffo-Ordóñez, and José Luis Rodríguez-Sotelo</i>	

## Neurodynamics, Complex Systems, and Chaos

Dynamical Behavior Analysis of a Neutral-Type Single Neuron System. . . . .	331
<i>Qiuyu Lv, Nankun Mu, and Xiaofeng Liao</i>	
Recurrent Neural Network with Dynamic Memory . . . . .	339
<i>Jiaqi Bai, Tao Dong, Xiaofeng Liao, and Nankun Mu</i>	
Missing Link Prediction in Social Networks . . . . .	346
<i>Jin Zhou and Chiman Kwan</i>	
Dynamical Behaviors of Discrete-Time Cohen-Grossberg Neural Networks with Discontinuous Activations and Infinite Delays . . . . .	355
<i>Jinling Wang, Haijun Jiang, Tianlong Ma, and Cheng Hu</i>	
Analysis and Circuit Implementation of a Novel Memristor Based Hyper-chaotic System . . . . .	364
<i>Dengwei Yan, Lidan Wang, and Shukai Duan</i>	
Lag Synchronization of Complex Networks via Decentralized Adaptive Control . . . . .	372
<i>Fan Yang and Nankun Mu</i>	
Crossbar-Based Hamming Associative Memory with Binary Memristors . . . . .	380
<i>Mikhail S. Tarkov</i>	
Continuous Attractors of 3-D Discrete-Time Ring Networks with Circulant Weight Matrix . . . . .	388
<i>Jiali Yu, Zhang Yi, Yong Liao, De-An Wu, and Xiong Dai</i>	
Hopf-Pitchfork Bifurcation Analysis of a Coupled Neural Oscillator System with Excitatory-to-Inhibitory Connection and Time Delay . . . . .	397
<i>Lei Yang, Tao Dong, and Tingwen Huang</i>	

## Multi-agent Systems and Game Theory

Adaptive Consensus Tracking of First-Order Multi-agent Systems with Unknown Control Directions . . . . .	407
<i>Yajun Zheng, Qingling Wang, and Changyin Sun</i>	

A Distributed Algorithm Based on Multi-agent Network for Solving Linear Algebraic Equation . . . . .	415
<i>Qingshan Liu, Jiang Xiong, Jing Zhong, Hong Ying, and Kaixuan Li</i>	
Leader-Follower Tracking Problem for Multi-agent Systems with Directed Impulsive Communication . . . . .	423
<i>Changlin Tong, Wanli Jin, Hao Wang, Haijun Jiang, and Zhiyong Yu</i>	
Event-Triggered Consensus of General Linear Multi-agent System with Time Delay . . . . .	432
<i>Yonghui Wu and Nankun Mu</i>	
<b>Signal, Image and Video Processing</b>	
Robust Speaker Identification Algorithms and Results in Noisy Environments . . . . .	443
<i>Bulent Ayhan and Chimani Kwan</i>	
Marine Aquaculture Targets Automatic Recognition Based on GF-3 PolSAR Imagery . . . . .	451
<i>Jianchao Fan, Jianhua Zhao, Min Han, Xinxin Wang, and Bingnan Li</i>	
Video Server Deployment Using a Genetic Algorithm with Deterministic Initialization Strategy . . . . .	459
<i>Xin-Yi Hu, Yue-Jiao Gong, Xin-Yuan Zhang, Yi-Ning Ma, and Jun Zhang</i>	
R-RTRL Based on Recurrent Neural Network with K-Fold Cross-Validation for Multi-step-ahead Prediction Landslide Displacement . . . . .	468
<i>Jiejie Chen, Ping Jiang, Zhigang Zeng, and Boshan Chen</i>	
Personalized Response Generation for Customer Service Agents . . . . .	476
<i>Ma Cuihua, Ping Guo, and Xin Xin</i>	
Tracking of Multiple Pixel Targets Using Multiple Cameras . . . . .	484
<i>Jin Zhou and Chimani Kwan</i>	
A Comparative Study of Spatial Speech Separation Techniques to Improve Speech Recognition . . . . .	494
<i>Xinhui Zhou, Chimani Kwan, Bulent Ayhan, Chanwoo Kim, K. Kumar, and Richard Stern</i>	
An Effective Object Detection Algorithm for High Resolution Video by Using Convolutional Neural Network . . . . .	503
<i>Denis Vorobjov, Iryna Zakharava, Rykhard Bohush, and Sergey Ablameyko</i>	

Sound Signal Invariant DAE Neural Network-Based Quantizer Architecture of Audio/Speech Coder Using the Matching Pursuit Algorithm . . . . .	511
<i>Vladislav Avramov, Vadzim Herasimovich, and Alexander Petrovsky</i>	
A Comparative Study of Conventional and Deep Learning Target Tracking Algorithms for Low Quality Videos . . . . .	521
<i>Chiman Kwan, Bryan Chou, and Li-Yun Martin Kwan</i>	
Image Edge Detection for Stitching Aerial Images with Geometrical Rectification . . . . .	532
<i>Zhi-Xuan Liu, Qiu-Hua Lin, and Ying-Guang Hao</i>	
BP Neural Network with Regularization and Sensor Array for Prediction of Component Concentration of Mixed Gas . . . . .	541
<i>Lin Zhao, Jing Wang, and Xiuyu Chen</i>	
Fusion of Laser Point Clouds and Color Images with Post-calibration . . . . .	549
<i>Xiao-Chuan Zhang, Qiu-Hua Lin, and Ying-Guang Hao</i>	
A Novel Color-Based Data Visualization Approach Using a Circular Interaction Model and Dimensionality Reduction . . . . .	557
<i>Jose Alejandro Salazar-Castro, Paul D. Rosero-Montalvo, Diego Fernando Peña-Unigarro, Ana Cristina Umaquinga-Criollo, Zenaida Castillo-Marrero, Edgardo Javier Revelo-Fuelagán, Diego Hernán Peluffo-Ordóñez, and César Germán Castellanos-Domínguez</i>	
Bird Species Recognition Based on Deep Learning and Decision Fusion . . . .	568
<i>Xuye Zhi and Chengan Guo</i>	
Chinese News Text Classification of the Stacked Denoising Auto Encoder Based on Adaptive Learning Rate and Additional Momentum Item . . . . .	578
<i>Shuang Qiu, Mingyang Jiang, Zhifeng Zhang, Yinan Lu, and Zhili Pei</i>	
Overcomplete Dictionary Pair for Music Super-Resolution . . . . .	585
<i>Lianqiang Li and Jie Zhu</i>	
Multi-column Spatial Transformer Convolution Neural Network for Traffic Sign Recognition . . . . .	593
<i>Jin Zhang, Shukai Duan, Lidan Wang, and Xianli Zou</i>	
Real-Time Key Frame Extraction in a Low Lighting Condition. . . . .	601
<i>Tao Shen, Zhan-Li Sun, Fu-Qiang Han, and Ya-Min Wang</i>	
Moving Cast Shadow Removal Based on Texture Feature and Color Space . . . . .	611
<i>Chao Zheng, Zhan-Li Sun, Nan Wang, and Xin-Yuan Bao</i>	

A Novel Low Level Feature Normalization Method for Content Based Image Retrieval . . . . .	619
<i>Trung Xuan Hoang, Tuyet Van Dao, Nguyen Trinh Nguyen, Huy Hoang Ngo, and Ablameyko Sergey</i>	
An Effective Algorithm for Determining Pitch Markers of Vietnamese Speech Sentences. . . . .	628
<i>Thai Yen Ta, Hung Van Nguyen, Tuyet Van Dao, Huy Hoang Ngo, and Ablameyko Sergey</i>	
An Effective Facial Image Verification Based Attendance Management System . . . . .	637
<i>Zeng-Mei Li, Hui-Na Dai, Zhan-Li Sun, and Xia Chen</i>	
<b>Intelligent Control, Robotics and Hardware</b>	
Estimation of Distribution Algorithm for Autonomous Underwater Vehicles Path Planning . . . . .	647
<i>Run-Dong Liu, Zhi-Hui Zhan, Wei-Neng Chen, Zhiwen Yu, and Jun Zhang</i>	
Fault Diagnosis Method of Diesel Engine Based on Improved Structure Preserving and K-NN Algorithm. . . . .	656
<i>Yu Li, Min Han, Bing Han, Xinyi Le, and Shunshoku Kanae</i>	
NN - Sliding Mode Control Design for Trajectory Tracking and Roll Reduction of Marine Vessels . . . . .	665
<i>Cheng Liu, Jingqi Li, Rong Zhao, and Tieshan Li</i>	
Supplementary Frequency Control for Multi-machine Power System Based on Adaptive Dynamic Programming . . . . .	677
<i>Zhan Shi, Zhanshan Wang, Yanhong Luo, and Dan Ye</i>	
Task Assignment Based on a Dual Neural Network. . . . .	686
<i>Jiasen Wang and Jun Wang</i>	
Dependence of Critical Temperature on Dispersion of Connections in 2D Grid . . . . .	695
<i>Boris V. Kryzhanovsky, Iakov M. Karandashev, and Magomed Yu. Malsagov</i>	
Boundedness and Stability for a Class of Timescale-Type Time-Varying Systems. . . . .	703
<i>Qiang Xiao, Shiping Wen, Zhigang Zeng, and Tingwen Huang</i>	

The Design of Ureteral Renal Interventional Robot for Diagnosis and Treatment. . . . .	711
<i>Junbin Li, Qi Chen, Le Xie, Fan Feng, Wei Xue, Baijun Dong, Hesheng Wang, and YunHui Liu</i>	
Nonlinear Disturbance Observer Based Adaptive Integral Sliding Mode Tracking Control of a Quadrotor. . . . .	719
<i>Ning Wang, Qi Deng, and Yongpeng Weng</i>	
On Speed Controller Neural Tuner Application to Compensate PMSM Mechanics Inertia Moment Drift . . . . .	727
<i>Yuri I. Eremenko, Anton I. Glushchenko, Vladislav A. Petrov, and Aleksandr V. Molodykh</i>	
Nonlinear Observers for a Class of Neuronal Oscillators in the Presence of Strong Measurement Noise. . . . .	736
<i>Julio Pérez, Yu Tang, and Ileana Grave</i>	
Residence Time Regulation in Chemical Processes: Local Optimal Control Realization by Differential Neural Networks. . . . .	745
<i>Tatyana Poznyak, Isaac Chairez, and Alexander Poznyak</i>	
A Time-Varying-Constrained Motion Generation Scheme for Humanoid Robot Arms. . . . .	757
<i>Zhijun Zhang, Lingdong Kong, and Yaru Niu</i>	
Robust Control Design of Uncertain Strict Feedback Systems Using Adaptive Filters. . . . .	768
<i>Yong-Hua Liu and Chun-Yi Su</i>	
Analysis of Influencing Factors on Humanoid Robots' Emotion Expressions by Body Language . . . . .	775
<i>Zhijun Zhang, Yaru Niu, Shangen Wu, Shuyang Lin, and Lingdong Kong</i>	
<b>Bio-signal, Bioinformatics and Biomedical Engineering</b>	
Increasing Stability of EEG Components Extraction Using Sparsity Regularized Tensor Decomposition . . . . .	789
<i>Deqing Wang, Xiaoyu Wang, Yongjie Zhu, Petri Toivainen, Minna Huutilainen, Tapani Ristaniemi, and Fengyu Cong</i>	
The Aftereffects of Visual Illusions (Ponzo and Müller-Lyer): Hand-Dependent Effects in Sensorimotor Domain . . . . .	800
<i>Valeria Karpinskaia, Vsevolod Lyakhovetskii, Alla Cherniavskaia, and Yuri Shilov</i>	



Network Study on SecA – A Component of Sec Secretion System in Bacteria <i>Pseudomonas Aeruginosa</i> . . . . .	807
<i>Shaomin Yan and Guang Wu</i>	
A Prediction Model for the Risk of Osteoporosis Fracture in the Elderly Based on a Neural Network . . . . .	815
<i>Yong Wang, Zhiqiang Zhang, Nanchuan Cai, Yousheng Zhou, and Di Xiao</i>	
Patients' EEG Analysis Based on Multi-indicator Dynamic Analysis Measure for Supporting Brain Death Determination. . . . .	824
<i>Yao Miao and Jianting Cao</i>	
A New Epileptic Seizure Detection Method Based on Fusion Feature of Weighted Complex Network. . . . .	834
<i>Hanyong Zhang, Qingfang Meng, Mingmin Liu, and Yang Li</i>	
Epileptic Detection Based on EMD and Sparse Representation in Clinic EEG. . . . .	842
<i>Qingfang Meng, Lei Du, Shanshan Chen, and Hanyong Zhang</i>	
Dynamical Analysis of a Stochastic Neuron Spiking Activity in the Biological Experiment and Its Simulation by $I_{Na,P} + I_K$ Model . . . . .	850
<i>Huijie Shang, Zhongting Jiang, Dong Wang, Yuehui Chen, Peng Wu, Jin Zhou, and Shiyuan Han</i>	
Blinks Identification Using the GMM Classification Method of Polynomial Modeling of EEG Signals . . . . .	860
<i>Rim Somai, Meriem Riahi, and Faouzi Moussa</i>	
<b>Author Index</b> . . . . .	869