

2021 II International Conference on Neural Networks and Neurotechnologies (NeuroNT 2021)

**Saint Petersburg, Russia
16 June 2021**



IEEE Catalog Number: CFP21AN0-POD
ISBN: 978-1-6654-4535-1

**Copyright © 2021 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP21AN0-POD
ISBN (Print-On-Demand):	978-1-6654-4535-1
ISBN (Online):	978-1-6654-4534-4

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Content

I. HYBRID INTELLIGENCE BUILDING CONCEPTS

<i>Tools for Hardware and Software Implementation of Neuro-fuzzy Systems</i>	3
Morozov S.M., Kupriyanov M.S.	

II. ARTIFICIAL INTELLIGENCE TECHNOLOGIES AND THEIR APPLICATIONS

<i>Self-Tuning PID Controller Using a Neural Network for Nonlinear Exoskeleton System</i>	6
Belov M.P., Dinh Dang Truong, Pham Van Tuan	
<i>Forward Propagation Neural Network Weighting Analysis as a Model Estimation Method</i>	10
Zhangirov T.R., Krevchik A.B., Zuev D.V., Liss A.A., Ekalo A.V., Grigoryeva N.Yu.	
<i>XAI Evaluation: Evaluating Black-Box Model Explanations for Prediction</i>	13
Yuyi Zhang, Feiran Xu, Jingying Zou, Petrosian O.L., Krinkin K.V.	
<i>Comparison of Data Clustering Methods in the Gas Transportation System</i>	17
Petrova A.K., Sinitca A.M.	
<i>Using OpenMP to Optimize Model Training Process in Machine Learning Algorithms</i>	21
Mohammed O.T., Heidari M.S., Paznikov A.A.	
<i>Intelligent Information Security Management of Cyber-physical Systems</i>	25
Shichkina Yu.A., Fatkieve R.R.	
<i>Research of Test Results of Guide Dogs and Information on their Origin</i>	28
Bekeneva Y.A.	
<i>A Neural Network Approach to Overcoming a Priori Uncertainty in Optimal Action Planning of Intelligent Information Agents for Soft Architectures of Service-oriented Systems</i>	31
Ptitsyna L.K., El Sabayar Shevchenko N.N., Belov M.P., Ptitsyn A.V.	

III. DATA MANAGEMENT AND ORGANIZATION OF COMPUTING IN INTELLIGENT SYSTEMS

<i>An Approach to Translating a Database from MySQL to Cassandra</i>	35
Muon Ha, Shichkina Yu.A.	
<i>Element Base of Pulse Neural Network Units</i>	39
Bureneva O.I.	
<i>Adaptive Neuro-fuzzy System (ANFIS) of Information Interaction in Industrial Internet of Things Networks Taking into Account Load Balancing</i>	43
Mukeshimana C., Kupriyanov M.K.	
<i>Protocol for the Interaction of Agents Solving the Problem of Distributed Data Analysis</i>	47
González Pérez Yuleisy, Kholod I.I.	
<i>Data Processing in Foggy Computing Environments for Machine Learning</i>	51
Subbotin A.N.	
<i>Isometric Vector Neuroanalyzer</i>	54
Safyannikov N.M., Bureneva O.I., Aleksanyan Z.A., Chepasov A.E.	