IV Baltic Forum: Neuroscience, Artificial Intelligence and Complex Systems (BF-NAICS 2024)
VIII Scientific School «Dynamics of Complex Networks and their Applications» (DCNA 2024)
The Sixth International Conference «Neurotechnologies and Neurointerfaces» (CNN 2024)
Prelimenary Program
All time in the schedule is Kaliningrad time (GMT+2)
Venue - Immanuel Kant Baltic Federal University (str. A. Nevskogo, 14, Kaliningrad)
Updated September 17

Day 1
19.09.2024

09:00–10:00	**Registration** **Welcome coffee** (Hall of the administrative building, str. A. Nevsky, 14)
	Opening Ceremony (Assembly audience "Maximum" of the administrative building, str. A. Nevsky, 14)
10:00–10:30	**Dr. Maxim Demin** – Acting rector of IKBFU Greetings to the forum participants: **Aleksey Besprozvannykh** (for approval) – Acting Governor of the Kaliningrad Region **Antony Shvindt** (for approval) – Deputy Head of the Secretariat of the Deputy Chairman of the Government of the Russian Federation D.N. Chernyshenko **Alexander Shenderyuk-Zhidkov** – Senator of the Russian Federation from the Kaliningrad region **Alexander Semenov** – Executive Director of the Industry Union "NeuroNet" **Prof. Alexander Hramov** – Head of the Baltic Center for Neurotechnology and Artificial Intelligence of IKBFU **Prof. Victor Kazantsev** – Head of the Department of Neurotechnology in Lobachevsky State University of Nizhny Novgorod
	Plenary Lectures (Assembly audience "Maximum" of the administrative building, str. A. Nevsky, 14)
	Chairman – Prof. Alexander Hramov
10:30–11:15	*Plenary Lecture* **Prof. Alexander Pisarchik** Brain connectivity hypergraphs

	(Technical University of Madrid, Spain)	
11:15–12:00	**Plenary Lecture** **Prof. Stefano Boccaletti** (Institute for Complex Systems, Italy)	The transition to synchronization in networked dynamical systems
12:00–13:30	**Lunch** (Restaurant "Residence of Kings", str. A. Nevsky, 10)	
	Plenary Lectures (Assembly audience "Maximum" of the administrative building, str. A. Nevsky, 14)	
	Chairman – Prof. Victor Kazantsev	
13:30–14:15	**Plenary Lecture** **Prof. Vladimir Nekorkin** (Corresponding Member of RAS, Institute of Applied Physics of the Russian Academy of Sciences, Russia)	Synchronization in adaptive networks with higher-order interactions
14:15–15:00	**Plenary Lecture** **Prof. Alexey Koronovskii** (Saratov State University, Russia)	Generalized Chaotic Synchronization: From Simple to Complex
15:00–15:15	**Coffee-break**	
15:15–16:15	**Round table "Problems of regulating the development of AI"** **Alexander Shenderyuk-Zhidkov** (Senator of the Russian Federation from the Kaliningrad region) (Assembly audience "Maximum" of the administrative building, str. A. Nevsky, 14)	
16:15–16:30	**Coffee-break**	
	Invited Lectures (Assembly audience "Maximum" of the administrative building, str. A. Nevsky, 14)	
	Chairman – Prof. Vladimir Maksimenko	
16:30–16:50	**Invited lecture** **Prof. Vladimir Ponomarenko** (Saratov Branch of the Institute of RadioEngineering and Electronics of Russian Academy of Science, Russia)	Experimental Realization of Neuron-Like Activity Generators
16:50–17:10	**Invited lecture** **Prof. Mikhail Ivanchenko** (Lobachevsky State University, Russia)	Synchronization in multiplex systems with symplex interactions beyond all-to-all coupling

17:10–17:30	*Invited lecture* **Dr. Dmitrii Lopatin** (Derzhavin Tambov State University, Russia)	About the possibility of using generative neural networks for malicious «high-quality»-purposes
17:30–17:50	*Invited lecture* **Prof. Olga Moskalenko** (Saratov State University, Russia)	Intermittent behavior near the boundary of generalized synchronization in systems with different topologies of attractors
17:50–18:10	*Invited lecture* **Dr. Denis Zakharov** (HSE University, Russia)	The hierarchy of brain rhythms as a mechanism for robust coding of speech in the auditory cortex
18:10–18:30	*Invited lecture* **Dr. Vadim Grubov** (Immanuel Kant Baltic Federal University, Russia)	Extreme events in EEG
18:30–18:50	**Vladimir Antipov** (Immanuel Kant Baltic Federal University, Russia)	Identification of Mechanisms and Biomarkers of Learning Efficiency Based on Multimodal Data
18:50–20:00	**Poster Session I**	

Day 2
20.09.2024

Plenary Lectures (Assembly audience "Maximum" of the administrative building, str. A. Nevsky, 14)		
Chairman – Prof. Olga Moskalenko		
09:00–09:45	*Plenary Lecture* **Prof. Alexander Fradkov** (Institute for Problems in Mechanical Engineering of RAS, Russia)	Cybernetical neuroscience
09:45–10:30	*Plenary Lecture* **Oksana Veselova, Prof. Oleg Karpov** (National Medical and Surgical Center named after N.I. Pirogov, Russia)	Digital Medicine and Science - Co-Evolving: Neuroscience, Complex Systems and Artificial Intelligence
10:30–10:45	**Coffee-break**	
Plenary Lectures (Assembly audience "Maximum" of the administrative building, str. A. Nevsky, 14)		

Chairman – Prof. Alexey Koronovskii		
10:45–11:30	**Plenary Lecture** **Prof. Susanna Gordleeva** (Lobachevsky State University / Immanuel Kant Baltic Federal University, Russia)	Neuromorphic models of artificial intelligence based on biophysical models of neuron-astrocytic networks
11:30–12:15	**Plenary Lecture** **Prof. Vladimir Maksimenko** (National University of Singapore, Singapore)	Can Brain Stimulation Increase Mental Speed? Evidence from Necker Cubes and Cognitive Models
12:15–13:45	**Lunch**	
Plenary Lectures (Assembly audience "Maximum" of the administrative building, str. A. Nevsky, 14)		
Chairman – Prof. Susanna Gordleeva		
13:45–14:30	**Plenary Lecture** **Prof. Mikhail Lebedev** (Higher School of Economics / Skolkovo Institute of Science and Technology, Russia)	Invasive neural interfaces: from Edward Edwards to Neuralink
14:30-15:15	**Plenary Lecture** **Prof. Igor Voznuk** (Pavlov First Saint Petersburg State Medical University, Russia)	Hemorrhagic Stroke and Artificial Intelligence: A Tool to Assist in Expert Assessment and Decision Making
15:15–15:30	**Coffee-break**	
Invited Lectures (Assembly audience "Maximum" of the administrative building, str. A. Nevsky, 14)		
Chairman – Prof. Eugene Postnikov		
15:30–15:50	**Invited lecture** **Prof. Anton Kiselev** (National Medical Research Center for Therapy and Preventive Medicine, Russia)	Prospects for the application of artificial intelligence for medical prevention and health preservation tasks
15:50–16:10	**Invited lecture** **Dr. Denis Andrikov** (Bauman Moscow State Technical University and Pirogov National Medical and Surgical Center, Russia)	MedTech AI: Programming cannot be investigated. An example of an intelligent EEG service
16:10–16:30	**Invited lecture** **Dr. Olga Martynova**	Implicit perception as the basis of perceptual learning in humans

	(Institute of Higher Nervous Activity and Neurophysiology of the Russian Academy of Sciences, Russia)	
16:30–16:50	***Invited lecture*** **Dr. Larisa Mayorova** (Institute of Higher Nervous Activity and Neurophysiology of the Russian Academy of Sciences, Russia)	Functional MRI of the brain as a tool for objectifying the effect in clinical trials
16:50–17:05	**Coffee-break**	
Invited Lectures (Assembly audience "Maximum" of the administrative building, str. A. Nevsky, 14)		
Chairman – Prof. Olga Martynova		
17:05–17:25	***Invited lecture*** **Prof. Maria Vedunova** (Lobachevsky State University, Russia)	The Role of Astrocytes in the Development of Alzheimer's Disease
17:25–17:45	***Invited lecture*** **Prof. Eugene Postnikov** (Kursk State University, Russia)	Universality of generalized Langevin subduffusion in undulated channels: a possible link to the intraaxonal anomalous transport
17:45–18:05	***Invited lecture*** **Dr. Alexander Sergeev** (Ural Federal University named after B.N. Yeltsin / Institute of Industrial Ecology of Ural Branch of Russian Academy of Sciences, Russia)	Some issues of assessing the content of impurities in the environment based on monitoring data
18:05–18:25	***Invited lecture*** **Prof. Galina Portnova** (Institute of Higher Nervous Activity and Neurophysiology of the Russian Academy of Sciences, Russia)	TBA
18:25–18:45	***Invited lecture*** **Prof. Sergei Prokhorov** (S.I. Vavilov Institute for the History of Science and Technology of Russian Academy of Sciences, Chair of IEEE Computer Society Russian chapter, Russia)	IEEE Standards on Ethics in Artificial Intelligence
18:45–20:00	**Poster Session II** **Coffee-break**	

Day 3
21.09.2024

	Invited Lectures (Assembly audience "Maximum" of the administrative building, str. A. Nevsky, 14)	
	Chairman – Prof. Sergey Lobov	
09:00–09:20	*Invited lecture* **Prof. Alexey Mikhaylov** (Lobachevsky State University, Russia)	Neurotechnologies and neurointerfaces based on memristors and memristive systems
09:20–09:40	*Invited lecture* **Dr. Sergey Shchanikov** (Lobachevsky State University, Russia)	The Use of Memristive Devices for Processing Physiological Signals
09:40–10:00	*Invited lecture* **Dr. Max Talanov** (Institute for Artificial Intelligence R&D of Serbia, Serbia)	Neuropunk revolution: energy consumption aspects of modern AI
10:00–10:20	*Invited lecture* **Prof. Sergey Lobov** (Lobachevsky State University, Russia)	Which learning rule to use in neuromorphic AI?
10:20–10:40	*Invited lecture* **Dr. Olga Sysoeva** (Institute of Higher Nervous Activity and Neurophysiology of the Russian Academy of Sciences, Russia)	Successes and Prospects of Using the Temporal Response Function in Research of Brain Mechanisms of Streaming Speech Perception
10:40–11:00	*Invited lecture* **Dr. Natalia Shemyakina** (Sechenov Institute of Evolutionary Physiology and Biochemistry of the Russian Academy of Sciences, Russia)	Development of a neurointerface for cognitive rehabilitation after minor vascular events, stroke
11:00–11:20	*Invited lecture* **Dr. Ekaterina Kuzmina** (Skolkovo Institute of Science and Technology, Russia)	Information dissemination in the cortex, and what does rotational dynamics have to do with it
11:20–11:40	*Invited lecture* **Sergey Nazarikov** (Immanuel Kant Baltic Federal University, Russia)	Two-stage approaches with combination of outlier detection method and deep learning enhances automatic epileptic seizure detection

11:40–12:00	**Invited lecture** **Dr. Alexander Soloviev** (Institute of Applied Physics RAS, Russia)	Improving the Accuracy of the Adaptive Optical Wavefront Correction System of High-Power Lasers Based on Convolutional Neural Networks
12:00–12:30	**Closing Ceremony** (Assembly audience "Maximum" of the administrative building, str. A. Nevsky, 14)	
12:30–14:00	**Lunch** (Restaurant "Residence of Kings", str. A. Nevsky, 10)	
14:00–18:00	**Social event**	

Poster Session I
(September 19, 18:50–20:00)

	The Sixth International Conference «Neurotechnologies and Neurointerfaces» (CNN 2024)	
1.	N. Rudenkiy, A. Medvedeva, D. Shelepenkov, V. Kosonogov (National Research University Higher School of Economics, Russia)	Magnetoencephalographic correlates of emotion regulation: topography and classification
2.	V. Melnichenko, A. Budaev, N. Emelianov (Kursk State University, Russia)	Design and synthesis of polyaniline doped with heteroaromatic diacid for application in memristors
3.	M. Ivanova, G. Kopytin. V. Moiseeva, A. Shestakova (National Research University Higher School of Economics, Russia)	Neurophysiological correlates of probabilistic reward-based learning: using decoding approach on MEG data
4.	E. Kosova, S. Andreev, A. Safonova, O. Zinchenko (National Research University Higher School of Economics, Russia)	Social norm compliance for newly introduced norms during COVID-19 pandemic
5.	A. Vanina, A. Sychev, V. Melent'ev, E. Postnikov (Kursk State University, Russia)	Elastic properties a collagen-based brain tissue phantom under high compressive load
6.	E. Monahhova, A. Morozova, J. Gorodnicheva, O. Zinchenko, V. Moiseeva, V. Klucharev (National Research University Higher School of Economics, Russia)	ERP correlates of the semantic violations in the deepfakes containing disinformation regarding COVID-19: Pilot study
7.	G. Kopytin, A. Kondratenko, V. Moiseeva, A. Shestakova (National Research University Higher School of Economics, Russia)	Learning-induced changes in auditory processing: An MEG investigation using an active learning task and oddball paradigm
8.	A. Morozova, E. Monahhova, Y. Gorodnicheva, O. Zinchenko, A. Shestakova, V. Klucharev (National Research University Higher School of Economics, Russia)	Event-Related Potentials in response to fake news correction: Pilot study
9.	M. Petrov, E. Ryndin, N. Andreeva (Saint Petersburg Electrotechnical University "LETI", Russia)	Compiler for hardware design of convolutional neural networks with supervised learning based on neuromorphic electronic blocks
10.	A. Rogachev, O. Sysoeva (Sirius University of Science and Technology, Russia)	Comparison of acoustic and syllable neural tracking of natural speech and syllable sequences in children
11.	E. Pomelova, A. Grankina, D. Bredikhin, M. Koriakina, A.N. Shestakova, E. Blagovechtchenski (National Research University Higher School of Economics, Russia)	The combination of random noise and transspinal direct current stimulation affects the corticospinal system excitability
12.	A. Timashkov, O. Zinchenko, V. Klucharev (National Research University Higher School of Economics, Russia)	Role of the right frontopolar cortex stimulation in extracting alternative strategies in decision-making: tDCS study
13.	M. Koriakina, M. Lukov, K. Bartseva, U. Nikishina, D. Fomicheva, A. Shestakova, E. Blagovechtchenski, E. Ignatenko (National Research University Higher School of Economics, Russia)	Examining Emotional Reactions to Varied Stimuli Through Subjective Assessment Methods
14.	N. Titova, M. Pochueva, V. Aksiotis, A. Ossadchi, A. Tumyalis (National Research University Higher School of Economics, Russia)	Adaptive method for finding the decision-to-react transition point

15.	K. Bartseva, U. Nikishina, M. Koriakina, M. Lukov, A. Kirsanov, D. Fomicheva, D. Andreeva, E. Levchenko, A. Dasaeva, E. Blagovechtchenski (St Petersburg State Univeristy, Russia)	Changes in corticospinal excitability during physiological stress: a pilot study
16.	A. Petukhov, S. Polevaya, I. Loskot, N. Morozov, N. Krasnitsky, O. Khaldina (ANO Project office of the Nizhegorodsky region IT-Campus "NEYMARK", Russia)	The impact of multimodal and polyvalent audiovisual stimuli on the emotional state of an individual
17.	O. Rogozhnikova, M. Solotenkov, O. Ivashkina, I. Fedotov, A. Fedotov, K. Anokhin (Lomonosov Moscow State University, Russia)	Novel optical probe for multi-region fiber photometry in mouse brain
18.	G. Perevoznyuk, A. Ragimova, A. Batov, D. Ponomareva, M. Salamatin, M. Feurra (National Research University Higher School of Economics, Russia)	Unraveling the Complexities of Motor Imagery and Its Impact on the Brain's Capabilities
19.	Y. Rogoleva, A. Kovalev (Lomonosov Moscow State University, Russia)	The Identification of Stress Reactions using Analysis of Oculomotor Activity
20.	A. Kovalev, E. Nefeld, A. Gasimov (Lomonosov Moscow State University, Russia)	The optokinetic nystagmus indicates functional state changes: VR study
21.	A. Gorovaya, D. Perevozniuk, I. Lavrov, M. Lebedev (Skolkovo Institute of Science and Technology, Russia)	Specific EEG markers of pain processing under anesthesia in rats
22.	M. Martinez-Saito, A. Belianin, G. Kopytin, M. Ivanova (National Research University Higher School of Economics, Russia)	Modeling decision-making behavior in a double auction task
23.	G. Perevoznyuk, A. Ragimova, A. Pleskovskaya, A. Batov, T. Surajudeen, C. Nieto Doval, M. Feurra (National Research University Higher School of Economics, Russia)	Effects after Transcranial Direct Current Stimulation of the Visual Cortex on Motor Imagery
24.	E. Blagovechtchenski, M. Lukov, K. Bartseva, U. Nikishina, D. Fomicheva, A. Shestakova, E. Pomelova, M. Koriakina (National Research University Higher School of Economics, Russia)	Analysis of the EEG Rhythms During Viewing an Emotional Video as a Biomarker of Psycho-emotional State
25.	M. Lukov, E. Zemnukhov, E. Blagovechtchenski (Novgorod State University, Russia)	Using a mobile device to record electrodermal activity during nocturnal sleep
26.	A. Kirsanov, K. Bartseva, M. Koriakina, A. Mamaev, U. Nikishkina, D. Fomicheva, E. Blagovechtchenski (St. Petersburg State University, Russia)	Electrophysiological Responses & Subjective Estimates Of Dissonant And Harmonic Chords
27.	T. Isakov, A. Leshchyova, A. Korsakov, A. Bakhshiev (The Russian State Scientific Center for Robotics and Technical Cybernetics, Russia)	Hexapod gait adaptation based on CPG in case of limb damage

28.	S. Stasenko, A. Lebedev, O. Shemagina, I. Nuidel, A. Kovalchuk, V. Yakhno (Institute of Applied Physics RAS, Russia)	Adaptive correction of the multi-cascade detector of biomorphic artificial intelligence system for pattern recognition problems
29.	S.A. Lobov, A.I. Zharinov, D.P. Kurganov, V.B. Kazantsev (Lobachevsky State University of Nizhny Novgorod, Russia)	Adaptive rewiring can implement network memory consolidation

VIII Scientific School «Dynamics of Complex Networks and their Applications» (DCNA 2024)		
30.	A. Kurbako, D. Ezhov, M. Prokhorov, V. Ponomarenko (Saratov State University, Russia)	Recognizing patterns in images using a small spiking neural network
31.	Yu. Ishbulatov, O. Tarasova, A. Borovik, A. Vahlaeva, B. Bezruchko, A. Karavaev (Saratov State University, Russia)	Reconstructing the model equation for the autonomic control of the mean arterial pressure from rat data
32.	N. Pospelov, O. Rogozhnikova, V. Plusnin, A. Ivanova, K. Toropova, O. Ivashkina, K. Anokhin (Institute for Advanced Brain Studies of Moscow State University, Russia)	Effective dimensionality of neuronal population activity in hyppocampus correlates with behavior
33.	D. Radushev, O. Dogonasheva, B. Gutkin, D. Zakharov (Centre for Cognition and Decision making, Institute for Cognitive Neuroscience, HSE University, Russia)	Topological markers of dynamical regimes in spiking neural networks
34.	A. Ivanova, D. Ivashkin, K. Toropova, O. Ivashkina, K. Anokhin (Institute for Advanced Brain Studies, Lomonosov Moscow State University, Russia)	Behavioral Enhancement of Associative Learning Requires Overlapping Neuronal Populations
35.	L.V. Takaishvili, V.I. Ponomarenko, I.V. Sysoev (Saratov State University, Russia)	Hardware electronic circuit modeling neuron with diode based non-linearity
36.	R. Tominov, Z. Vakulov, V. Kazantsev, C. Prakash, D. Rodriguez, V. Smirnov (Southern Federal University, Russia)	Synaptic plasticity in the nanocrystalline ZnO cross-point for neuromorphic systems of AI
37.	E. Bykova, S. Suvorova, P. Gavrilov, A. Lavrova (Saint Petersburg Electrotechnical University "LETI", Russia)	Implementation of Decision Tree Models in Differentiating Hard-to-Diagnose Lung Nodules
38.	Z. Vakulov, R. Tominov, V. Kazantsev, A. Fedotov, D. Dzyuba, V. Smirnov (Research Laboratory "Neuroelectronics and Memristive Nanomaterials" ("NEUROMENA" Lab), Southern Federal University, Russia)	Synthesis and size effect on resistive switching in ZnO:Ga thin films for neuromorphic applications
39.	S. Lagosha, A. Verisokin, D. Verveyko, A. Brazhe (Moscow State University, Russia)	Simple model of neurogliovascular unit activity with noradrenaline leading force
40.	V. Avilov, C. Prakash, N. Polupanov, A. Fedotov, V. Kazantsev, V. Smirnov	Memristor structures shape effect: nanoscale resistive switching of dot and lateral electrochemical titanium oxide

	(Southern federal university, Russia)	
41.	A. Panyushev, O. Posnenkova, N. Stankevich (National Research University Higher School of Economics, Russia)	Different types of multistability in the Chialvo map
42.	K. Kopylova, Y. Ivanskiy, O. Granichin, A. Tikhonov (Saint Petersburg university, Russia)	AI methods of control for distributed space systems: a review
43.	M. Mishchenko, N. Kovaleva, A. Mikhailov (Lobachevsky State University of Nizhny Novgorod, Russia)	Novel memristive STDP approach and neural clusters formation
44.	E. Dubinkina, E. Borovkova, A. Karavaev (Saratov State University, Russia)	Non-stationarity of the natural frequency of the sympathetic control loop of the heart rhythm
45.	A. Hramkov, M. Prokhorov, B. Bezruchko, A. Karavaev (Saratov State University, Russia)	Comparison of Methods for Modeling Phase Dynamics Using the Models of Different Orders
46.	D. Vasilieva, E. Borovkova, A. Karavaev (Saratov State University, Russia)	Comparison of non-stationarity heart rate variability in healthy volunteers and patients with impaired autonomic control of blood circulation
47.	A. Shabaeva, E. Borovkova, A. Karavaev (Saratov State University, Russia)	Biomarkers of coronary heart disease based on the analysis of the form of the ST segment of the electrocardiogram
48.	P. Kvasnevskaya, E. Borovkova, A. Karavaev (Saratov State University, Russia)	Development of methods for studying the synchronization of circuits in autonomic regulation of blood circulation based on the analysis of the statistical properties of instantaneous phase differences
49.	A. Efimov, I. Proskurkin, A. Lavrova (Immanuel Kant Baltic Federal University, Russia)	Memory Block Development for Neuromorph Setup: experimental study
50.	K. Merkulova, D. Postnov (Saratov State University, Russia)	Towards modeling local sleep phenomena: a toy model of a smallest sleep unit
51.	V. Savinov (Immanuel Kant Baltic Federal University, Russia)	Using artificial neural networks for graffiti detection
52.	N. Kovalev, F. Khabibullin, A. Guba, K. Klyuev, V. Shchapin, I. Kastal-skiy, V. Kazantsev (Moscow Institute of Physics and Technology, Russia)	The development of lifting force in flapping wing robots with variable angle of attack
53.	A. Tipikin, A. Kuzhelev (Immanuel Kant Baltic Federal University, Russia)	FIRI-2018: MATLAB package for the lower ionosphere model
54.	A. Kuc, V. Grubov, A. Badarin (Immanuel Kant Baltic Federal University, Russia)	Using long-range temporal correlations in the brain to predict intellectual development in children
55.	T. Bukina, M. Chvanova, M. Khramova, A. Hramov (Immanuel Kant Baltic Federal University, Russia)	Determination of the psychological and pedagogical substantiation of the cognitive functions influence on the development of higher education students' universal competencies
56.	S. Nazarikov, O. Vertinskaya, V. Grubov (Immanuel Kant Baltic Federal University, Russia)	Cascade CNN-based model for epileptic seizure diagnostics

57.	S. Nazarikov, V. Grubov, N. Utashev, O. Karpov (Immanuel Kant Baltic Federal University, Russia)	Two-stage approach based on combination of one-class SVM and CNN for epileptic seizure identification
58.	D. Ezhov, V. Ponomarenko, M. Prokhorov (Saratov State University, Russia)	Collective Dynamics in a Network of Electronic FitzHugh-Nagumo Generators Coupled via a Hub
59.	D.V. Verveyko, A.Yu. Verisokin, P.O. Lukin (Kursk State University, Russia)	Spatial model of neurogliovascular unit: arachidonic acid can control the stability
60.	A. Zharinov, I. Potapov, V. Kazantsev, S. Lobov (Lobachevsky State University of Nizhny Novgorod, Russia)	Modeling of systems that imitate biologically similar movements of a fish robot and a snake robot
61.	N. Kulagin, A. Andreev, A. Hramov (Immanuel Kant Baltic Federal University, Russia)	Reservoir computing shows partial statistical dynamics prediction of two coupled stochastic FitzHugh-Nagumo neurons
62.	A. Andreev, A. Badarin (Immanuel Kant Baltic Federal University, Russia)	Recovery of hidden macroscopic signals in a Kuramoto phase oscillators network
63.	N. Brusinskii (Immanuel Kant Baltic Federal University, Russia)	Using Brainwave Entropy to Evaluate Visual Search Performance in School-Aged Children
64.	N. Brusinskii, V. Antipov, A. Badarin (Immanuel Kant Baltic Federal University, Russia)	Detection of Eye Movement Characteristics Using Reservoir Computing in High-Noise Environments
65.	O. Piljugin (Immanuel Kant Baltic Federal University, Russia)	The Relationship Between IQ Level and Functional Brain Network Centrality During Cognitive Activity in Children
66.	O. Piljugin (Immanuel Kant Baltic Federal University, Russia)	Functional Brain Network Analysis in Children Performing Working Memory Tasks: EEG Study
67.	V. Antipov (Immanuel Kant Baltic Federal University, Russia)	Identification of Mechanisms and Biomarkers of Learning Efficiency Based on Multimodal Data
68.	V. Antipov (Immanuel Kant Baltic Federal University, Russia)	Comparison of Wearable Video-based Eye Tracking and EOG for Oculomotor Activity Detection in Specific Research Tasks
69.	M.S. Kabir, S. Kurkin, R. Paunova, D. Stoyanov, A. Hramov (Innopolis University)	HTM Spatial Pooler − a Nonparametric Interpretable Feature Selection Algorithm? An Introductory Exploration
70.	V. Khorev, S. Kurkin, L. Mayorova, G. Portnova, A. Kushnir, A.E. Hramov (Innopolis University)	Network-based approach in fMRI experiment with affective touch
71.	V. Khorev, S. Kurkin, R. Paunova, D. Stoyanov, A. Hramov (Innopolis University)	Differences in optimal community structure in brain connectivity organization in major depressive disorder

Poster Session II
(September 20, 18:45–20:00)

	The Sixth International Conference «Neurotechnologies and Neurointerfaces» (CNN 2024)	
1.	M. Lipkovich, A. Sagatdinov, V. Knyazeva, A. Aleksandrov (Institute for Problems in Mechanical Engineering of the RAS, Russia)	Detection of the intention to perform a two-staged movement from EEG signals
2.	D. Kostanian, O.Sysoeva (Sirius University of Science and Technology, Russia)	Lexical and sublexical cortical tuning for print in early childhood, oddball fast periodic visual stimulation study
3.	N. Savelev, O. Ivashkina, M. Pleskacheva, V. Plusnin, N. Pospelov, O. Rogozhnikova, V. Sotskov, K. Toropova, K. Anokhin (Lomonosov Moscow State University, Russia)	Local contrast elements of the arena floor modulate CA1 spatial mapping in mice
4.	G. Iskarevskii, A. Pekonidi, A. Beknazarova, A. Pozdnyakova, D. Onishchenko, A. Kirsanov, M. Baltin, Y. Bravyy (Sirius University of Science and Technology, Russia)	Effect of blood flow restriction on recruitment threshold and amplitude-frequency characteristics of motor units during exercise
5.	A. Shestakova, G. Kopytin, A. Simova (National Research University Higher School of Economics, Russia)	Neuroplasticity in economic decision making under active choice
6.	V. Plusnin, O. Ivashkina, N. Pospelov, O. Rogozhnikova, N. Savelev, V. Sotskov, K. Toropova, K. Anokhin (Lomonosov Moscow State University, Russia)	Sphynx: an automated behavioral analysis tool for neuronal selectivity identification
7.	A. Rybalko, A. Fradkov (Institute for Problems in Mechanical Engineering of RAS, Russia)	An Approach to Identification of the FitzHugh-Nagumo Network under Disturbances
8.	A. Grankina, E. Pomelova, D. Bredikhin, M. Koriakina, A. Shestakova, E. Blagovechtchenski (National Research University Higher School of Economics, Russia)	EEG face oddball paradigm as the test for emotional reaction
9.	N. Grigorev, I. Kandalov, S. Gordleeva (Lobachevsky State University of Nizhny Novgorod, Russia)	Repetitive TMS reduces reaction time and increases accuracy in a working memory test
10.	M. Matveeva, M. Mishchenko, A. Fedulina, D. Bolshakov, A. Mikhaylov, V. Kazantsev (Lobachevsky State University of Nizhny Novgorod, Russia)	Control of the hippocampal CA1 area activity by adaptive close-loop stimulation
11.	A. Berkmush-Antipova, N. Syrov, L. Yakovlev, A. Miroshnikov, F. Golovanov, A. Kaplan, N. Shusharina (Immanuel Kant Baltic Federal University, Russia)	The Influence of Preceding Stimuli Context on the Error-Related Potentials Variability
12.	A. Nasibullina, L. Yakovlev, N. Syrov, M. Knyshenko, A. Kaplan, M. Lebedev (Skolkovo Institute of Science and Technology, Russia)	Tactile imagery increases corticospinal excitability assessed by single pulse TMS
13.	A. Akhmetzyanova, T. Baltina, E. Semenova, V. Smirnova, O. Sachenkov	The role of motor activity in bone remodeling after spinal cord injury in rats

	(Kazan Federal University, Russia)	
14.	A. Savosenkov, M. Yuryev, N. Grigorev, A. Udoratina, S. Gordleeva (Lobachevsky State University of Nizhny Novgorod, Russia)	Changes in the cortical period of silence in a motor-imaginary type brain computer interface
15.	A. Zakharov, D. Melnikova, A. Shchepetov, A. Andreev, D. Dedyk, Yu. Komarova (Samara State Medical University, Russia)	Automated MRI Segmentation Of Patients With Multiple Sclerosis: Prospects For Technology Development
16.	A. Zakharov, E. Khivintseva, N. Gilmanova, D. Kozlov, I. Shirolapov, M Sergeeva (Samara State Medical University, Russia)	Natural Language Processing For Analyzing Neurological Status In Patients With Multiple Sclerosis
17.	O. Ivashkina, K. Toropova, M. Roshchina, A. Ivanova, K. Anokhin (Lomonosov Moscow State University, Russia)	Patterns of brain activity during the configural and elemental associative learning in mice
18.	A. Zakharov, E. Khivintseva, N. Gilmanova, D. Kozlov, I. Shirolapov, N. Romanchuk (Samara State Medical University, Russia)	Developing A Model For Predicting Multiple Sclerosis Activity Based On Machine Learning
19.	I. Kastalskiy, I. Mitin, V. Kazantsev (Moscow Institute of Physics and Technology, Russia)	Conceptual model of a robotic bird with independent flapping wings and adjustable wingspan
20.	A. Sukmanova, I. Minenko, A. Limonova, Z. Bashankaeva, M. Nazarova, V. Kutsenko, O. Drapkina, A. Ershova (National Research University Higher School of Economics, Russia)	Cardioceptive accuracy and indicators of psychological status
21.	M. Knyshenko, G. Soghoyan, R. Khalikov, M. Lebedev (Skolkovo Institute of Science and Technology, Russia)	Influence of prosthesis with noninvasive electrical sensory feedback on visuomotor behavior
22.	E. Voronin, I. Semibratov (Moscow State University of Technology and Management named after K.G. Razumovsky, Russia)	The Development of expert-diagnostic system with the scope to improve the quality supervision of meat production using neural network technologies
23.	A. Lebedev, T. Levanova, V. Kazantsev, S. Stasenko (Lobachevsky State University of Nizhny Novgorod)	Study of the Influence of Memristive Plasticity on the Formation of a Feature Space in the Excitatory Layer of a Spiking Neural Network
24.	S. Stasenko, A. Lebedev, T. Levanova, V. Kazantsev (Lobachevsky State University of Nizhny Novgorod)	Study of the influence of astrocytic modulation of STDP on the sensitivity of synapses to spatiotemporal patterns
25.	Y. Tsybina, V. Kazantsev, S. Gordleeva (Lobachevsky State University of Nizhny Novgorod)	Adding a spiking neuron-astrocyte network to a convolutional neural network improves classification of noisy images
26.	N. Shanarova, M. Pronina, M. Lipkovich, V. Ponomarev, A. Müller, J. Kropotov (IPMash RAS, Russia)	Classification of schizophrenia patients on the basis of latent components of ERPs using a machine learning system
27.	A. Trofimov, A. Nesmelov, A. Emelyanov (NRC Kurchatov Institute, Russia)	Photosensitive memristors based on nanocomposite parylene-MoOx
28.	O. Shirokova, Y. Chernov, S. Korotchenko, I. Mukhina (FSBEI of HE "PRMU" of the MoH of the Russia)	Possibilities Of Holotomographic Microscopy For Studying Primary Cell Cultures Of The Brain

29.	M. Nikulina, A. Zheltukhina, A. Shulman, M. Baltin, E. Semenova, T. Baltina (Kazan Federal University, Russia)	Virtual reality: a new tool to assess the association between balance and cognitive style
30.	O. Shirokova, P. Vasilchikov, E. Kozliaeva, S. Korotchenko, I. Mukhina (FSBEI of HE "PRMU" of the MoH of the Russia)	Biological sex determines differences in gene expression during replicative aging of glia in vitro
31.	N. Babich, A. Fradkov (Institute for Problems in Mechanical Engineering of the RAS, Russia)	Brain controlled wheelchair: system description and fuzzy almost nearest neighbors classification
32.	A. Lebedev, T. Levanova, V. Kazantsev, S. Stasenko (Lobachevsky State University of Nizhni Novgorod, Russia)	Study of the influence of macroparameters of a spiking neural network on the quality of image recognition
33.	S. Stasenko, T. Levanova, A. Lebedev, G. Osipov, V. Kazantsev (Lobachevsky State University of Nizhni Novgorod, Russia)	Astrocytic modulation of the dynamics of two coupled central pattern generators
34.	A. Motorina, M. Gavrish, E. Borisova, E. Epifanova, A. Kustova, V. Tarabykin, A. Babaev (Lobachevsky State University of Nizhni Novgorod, Russia)	Effect of endogenous expression of the neurotrophic factor BDNF on epileptiform activity
35.	A. Filat'eva, A. Kustova, K. Maltseva, A. Rozov, A. Babaev, V. Tarabykin, E. Kondakova (Lobachevsky State University of Nizhni Novgorod, Russia)	In utero electroporation: a technology for manipulating gene expression in the mouse models of developmental and epileptic encephalopathy
36.	A. Udoratina, N. Grigorev, A. Savosenkov, D. Ermolaev, V. Maksimenko, S. Gordleeva (Lobachevsky State University of Nizhni Novgorod, Russia)	Time of single-pulse TMS delivery during cognitive task affects subject's reaction time
37.	M. Sergeeva, Y. Komarova, N. Romanchuk, I. Shirolapov, A. Zakharov, V. Bannov (FSBEI HE SamSMU MOH Russia, Russia)	Influence of transcranial magnetic stimulation on working memory performance in healthy young people

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38.	S.A. Gulyaev, A. Garmash (Engineering Physics Institute of Biomedicine National Research Nuclear University MEPhI, Russia)	Default resting state EEG activity mathematical analysis as the new neurophysiological technology
39.	E. Reznik, M. Khoymov, N. Shusharina, A. Tynterova (Immanuel Kant Baltic Federal University, Russia)	Immunological correlates of ischemic stroke severity
40.	M. Khoymov, A. Tynterova, E. Reznik, N. Shusharina (Immanuel Kant Baltic Federal University, Russia)	Biomarkers of early post-stroke cognitive impairment
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43.	I. Bordanov, S. Shchanikov (Vladimir State University, Russia)	Memristive Artificial Neural Networks Accuracy Evaluation Using Data-Driven Models
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45.	D. Vlasenko, A. Zaikin, D. Zakharov (Institute for Cognitive Neuroscience HSE, Russia)	Ensemble methods for representation of fMRI, EEG/MEG data in graph form for classification of brain states
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47.	A. S. Butorova, D. A. Tarasov, A. I. Kosachenko, A. P. Sergeev (Ural Federal University named after B.N. Yeltsin / Institute of Industrial Ecology of Ural Branch of Russian Academy of Sciences, Russia)	Learning Foreign Languages by Adults Using Immersive Virtual Reality Systems: Review of Recent Studies (2014-2024)
48.	E. Marasanova, M. Vedunova, E.Mitroshina (Lobachevsky State University of Nizhny Novgorod, Russia)	Effect of Blockade of the 5-HT4 Receptors on the Calcium Activity of Neuron-Glial Networks in vitro
49.	M. Simonyan, E. Drozhdeva, R. Ukolov, Yu. Zhuravleva (Saratov State University, Russia)	Investigation of time-frequency characteristics of nighttime EEG signals in various brain regions depending on chronotype
50.	A. Chernov, O. Granichin (Institute for Problems in Mechanical Engineering of the Russian Academy of Sciences, Russia)	SPSA-based Consensus Algorithm for Collaborative Learning with Heavy-Tailed Noises
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57.	D. Bolshakov, M. Mishchenko, D. Chindarev, V. Matrosov (Lobachevsky State University of Nizhny Novgorod, Russia)	Recursive map neuron model

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62.	I. Potapov, I. Mitin, A. Zharinov, S. Lobov (Lobachevsky State University of Nizhny Novgorod, Russia)	Connection between CPG model and servomotor of biomorphic fish robot
63.	M. Ryabova, A. Matsukatova, A. Emelyanov (National Research Center Kurchatov Institute, Moscow Institute of Physics and Technology, Russia)	Parylene-MoOx nanocomposite memristor crossbar for neuromorphic computing applications
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