

## CONTENTS

### Data Science

1. Defuzzification of the initial context in formal concept analysis D E Samoilov, V A Semenova and S V Smirnov	1-9
2. Forecasting using predictor selection from a large set of highly correlated variables A Yu Timofeeva and Yu A Mezentsev	10-18
3. Analysis of stable functioning of objects using machine learning V N Klyachkin, D A Zhukov and E A Zentsova	19-25
4. Adaptive algorithm of conforming image matching V A Fursov, Ye V Goshin and K G Pugachev	26-33
5. The electrocardiogram signal morphology analysis based on convolutional neural network M Zavoytskiy, A Korobeynikov, A Menlitdinov, V Lyuminarskiy and Yu Kuzelin	34-42
6. Game-theoretic model of wide social groups' behavior with stimulation of volunteering activities M I Geraskin	43-49
7. Analysis of the credit turnover in the "Retailer-Bank-Insurer" system with variations in market factors M I Geraskin, O A Kuznetsova	50-56
8. Performance comparison of machine learning methods in the bus arrival time prediction problem A A Agafonov and A S Yumaganov	57-62
9. The detection of conflicts in the requirements specification based on an ontological model and a production rule system M Sh Murtazina and T V Avdeenko	63-73
10. Application of convolution neural networks in eye fundus image analysis N Y Ilyasova, A S Shirokanov and I A Klimov	74-79
11. Description and formation of the database perimeter for systematisation and storage of multi-structured data A A Nechitaylo, O I Vasilchuk and A A Gnutova	80-86
12. Neural network model in digital prediction of geometric parameters for relative position of the aircraft engine parts M A Bolotov, V A Pechenin, N V Ruzanov and D M Balyakin	87-94
13. Optimization of urban freight transportation based on evolutionary modeling E A Gladchenko, O N Saprykin and A N Tikhonov	95-103
14. Local approximation of discrete processes by interpolation polynomials A A Kolpakov, Yu A Kropotov	104-110

15. Creating methods and algorithms of adaptive control in biotechnical complexes of corrective action on human respiratory system N V Ivakhno, S I Zykin	111-118
16. Algebras of finitary relations V P Tsvetov	119-125
17. Distributed image processing based on the same IP-cores in FPGA-architecture V M Zakharov, S V Shalagin and B F Eminov	126-133
18. Blockchain technology in the pharmaceutical supply chain: researching a business model based on Hyperledger Fabric S R Bryatov, A A Borodinov	134-140
19. The words separation in old Cyrillic texts with fuzzy search method M N Mokrousov	141-148
20. Data-driven profiling of traffic flow with varying road conditions O K Golovnin	149-157
21. Research on the use of artificial neural networks for the myocardial infarction diagnosis P I Katkov, N S Davydov, A G Khramov and A N Nikonorov	158-164
22. Detection of spam using email signatures E V Sharapova, R V Sharapov	165-172
23. Using genetic algorithm for generating optimal data sets to automatic testing the program code K E Serdyukov, T V Avdeenko	173-182
24. Visual-inertial odometry algorithms on the base of thermal camera A P Alekseev, E V Goshin, N S Davydov, N A Ivliev and A V Nikonorov	183-188
25. Trap method in ensuring data security D A Shkirdov, E S Sagatov and P S Dmitrenko	189-198
26. Using the bag-of-tasks model with centralized storage for distributed sorting of large data array S V Vostokin, I V Bobyleva	199-203
27. An investigation of machine learning method based on fractal compression E Y Minaev	204-208
28. Dynamic game task of executors incentives in projects for the development of new production in continuous time O V Pavlov	209-218
29. Text classification using convolutional neural network L E Sapozhnikova, O A Gordeeva	219-226
30. Research of parallel algorithms for solving three-diagonal systems of linear algebraic equations on a graphical computing device using various types of memory X S Pogorelskih, L V Loganova	227-232

31. Security event data collection and analysis in large corporate networks E V Chernova, P N Polezhaev, A E Shukhman, Yu A Ushakov, I P Bolodurina and N F Bakhareva	233-241
32. A multiuser web-interface for solution of systems of nonlinear equations A N Danilenko, I A Zhdanov	242-251
33. Hybridization of fuzzy time series and fuzzy ontologies in the diagnosis of complex technical systems N G Yarushkina, V S Moshkin, I A Andreev and G I Ishmuratova	252-259
34. Comparison of the characteristics of the genetic algorithm and the method of coordinates search for optimization of temperature modes indoor areas A P Shuravin, S V Vologdin	260-270
35. Increasing signal/acoustic interference ratio in telecommunications audio exchange by adaptive filtering methods Y A Kropotov, A A Belov and A Y Prockuryakov	271-276
36. The syllable intelligibility in the system of information transmission by speech signals depending on the intensity of acoustic noise Yu A Kropotov, A A Belov, A A Kolpakov and A Yu Proskuryakov	277-282
37. Analysis of the structure of the relationship between the descriptions of objects of classes and evaluation of their compactness E N Zguralskaya	283-289
38. Using models of parallel specialized processors to solve the problem of signal separation V A Zasov	290-299
39. Orbital angular momentum acoustic modes demultiplexing by machine learning methods D A Stankevich	300-307
40. The implementation of "Kuznyechik" encryption algorithm using NVIDIA CUDA technology A N Borisov, E V Myasnikov	308-313
41. Supporting the life cycle of complex technical systems on the basis of intelligent technologies and predictive analytics V N Blinov, S S Valeev, N V Kondratyeva, R R Karimov, A S Kovtunenکو and E A Kuzmina	314-323
42. Distributed stream data processing system in multi-agent safety system of infrastructure objects S S Valeev, N V Kondratyeva, A S Kovtunenکو, M A Timirov and R R Karimov	324-331
43. Expert system of food sensory evaluation for mobile and tablet M A Nikitina, Y A Ivashkin	332-339

44. Convolutional neural network in the images colorization problem M V Bulygin, M M Gayanova, A M Vulfin, A D Kirillova and R Ch Gayanov	340-353
45. Using high-performance deep learning platform to accelerate object detection S O Stepanenko, P Y Yakimov	354-360
46. Selection of aggregated classifiers for the prediction of the state of technical objects D A Zhukov, V N Klyachkin, V R Krasheninnikov and Yu E Kuvayskova	361-367
47. Methods for finding shortest paths on graphs in organizational and economic systems and their implementation V M Ramzaev, I N Khaimovich and I V Martynov	368-375
48. Multimodel clustering of social networks in social dampening applying BIG DATA (acquiring knowledge from data) I N Khaimovich, V M Ramzaev and V G Chumak	376-386
49. Modelling and forecasting of quasi-periodic processes in technical objects based on cylindrical image models V R Krasheninnikov, Yu E Kuvayskova	387-393
50. A combined method of similar code sequences search in executable files A S Yumaganov	394-400
51. Using ontology merging for the integration of information systems and the production capacity planning system N Yarushkina, A Romanov, A Filippov, A Dolganovskaya and M Grigoricheva	401-408
52. Industrial application of big data services in digital economy O L Surnin, P V Sitnikov, A A Khorina, A V Ivaschenko, A A Stolbova and N Yu Ilyasova	409-416
53. Investigation of optimal configurations of a convolutional neural network for the identification of objects in real-time M A Isayev, D A Savelyev	417-423
54. Using the cluster "Sergey Korolev" for modelling computer networks D Y Polukarov, A P Bogdan	424-431
55. Big Data, Internet of Things, Augmented Reality: technology convergence in visualization issues D A Smuseva, A Y Rolich, L S Voskov and I Y Malakhov	432-444
56. Network traffic analyzing algorithms on the basis of machine learning methods R I Battalov, A V Nikonov, M M Gayanova, V V Berkholtz and R Ch Gayanov	445-456
57. SoC opportunities for boosting SDR GNSS performance A A Kumarin, I A Kudryavtsev	457-462
58. Data mining algorithms in the task of diagnosing the welded joints quality R R Akhmedyanov, K F Tagirova, A M Vulfin, V V Berkholtz and R Ch Gayanov	463-476

59. Decision support system in the task of ensuring information security of automated process control systems  
A D Kirillova, V I Vasilyev, A V Nikonov and V V Berkholts 477-486
60. Integrity control algorithms in the system for telemetry data collecting, storing and processings  
V V Berkholts, A I Frid, M B Guzairov and A D Kirillova 487-503
61. Research and analysis of messages of users of social networks using BigData technology  
I A Rytsarev, A V Kupriyanov, D V Kirsh and R A Paringer 504-509
62. Forecast of water-cut at wells under design by machine learning methods  
M R Enikeev, M F Fazlytdinov, L V Enikeeva and I M Gubaidullin 510-520
63. Determining the proximity of groups in social networks based on text analysis using big data  
A S Mukhin, I A Rytsarev, R A Paringer, A V Kupriyanov, D V Kirsh 521-526
64. Development of the documents comparison module for an electronic document management system  
M A Mikheev, P Y Yakimov 527-533
65. Optimization of the process of 3D visualization of the model of urban environment objects generated on the basis of the attributive information from a digital map  
M P Osipov, O A Chekodaev 534-541
66. Methods for emotions, mood, gender and age recognition  
D D Pribavkin, P Y Yakimov 542-548
67. High performance radar images modelling and recognition of real objects  
D A Zherdev, V V Prokudin 549-552
68. Intrusion detection system on the basis of data mining algorithms in the industrial network  
M A Gurin, A M Vulfin, V I Vasilyev and A V Nikonov 553-565
69. Restoration of images of social networks that have undergone processing, on the example of the social network Instagram  
M I Khotilin, N S Kravtsova, A V Kupriyanov and R A Paringer 566-569