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Лаборатория технологий искусственного интеллекта и больших данных для нанодиагностики материалов

**Должность:** Инженер  
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**Дата рождения:** 08.08.1993 г.,  
Ростов-на-Дону, Россия.

**Образование:**

2015г.: Ростовский государственный университет путей сообщения (ФГБОУ ВПО РГУПС), Бакалавр, 09.03.01 «Вычислительные машины, комплексы, системы и сети»;  
2017г.: Ростовский государственный университет путей сообщения (ФГБОУ ВПО РГУПС), Магистр, 09.04.01 «Информатика и вычислительная техника»;  
2021г.: Ростовский государственный университет путей сообщения (ФГБОУ ВПО РГУПС) Аспирант, 09.06.01 «Информатика и вычислительная техника».

**Направления исследований:**

Машинное обучение, компьютерное зрение, интеллектуальные и кибер-физические системы, анализ данных, мультисенсорные системы, слияние данных.

**Область научных интересов:**

Разработка аппаратных и программных средств с использованием микроконтроллеров, повышение информативности описания объекта исследования или окружающей среды на основе мультисенсорной консолидации данных, поступающих из гетерогенных источников.

**Методы:**

Методы и технологии слияния данных, позволяющие получить больше информации, чем рассмотрение каждого источника информации отдельно друг от друга.

**Научные публикации в реферируемых журналах:**

Количество публикаций РИНЦ – 21, Scopus – 8.

1. Kartashov, O.O.; Chapek, S.V.; Polyanichenko, D.S.; Belyavsky, G.I.; Alexandrov, A.A.; Butakova, M.A.; Soldatov, A.V. Online Microfluidic Droplets Characterization Using Microscope Data Intelligent Analysis. *Big Data Cogn. Comput.* 2023, 7, 7. <https://doi.org/10.3390/bdcc7010007>
2. Kartashov, O.O.; Chapek, S.V.; Polyanichenko, D.S.; Belyavsky, G.I.; Alexandrov, A.A.; Butakova, M.A.; Soldatov, A.V. Online Microfluidic Droplets Characterization Using Microscope Data Intelligent Analysis. *Big Data Cogn. Comput.* 2023, 7, 7. <https://doi.org/10.3390/bdcc7010007>
3. Chernov, A.V.; Savvas, I.K.; Alexandrov, A.A.; Kartashov, O.O.; Polyanichenko, D.S.; Butakova, M.A.; Soldatov, A.V. Integrated Video and Acoustic Emission Data Fusion for Intelligent Decision Making in Material Surface Inspection System. *Sensors* 2022, 22, 8554. <https://doi.org/10.3390/s22218554>
4. Kartashov, O.O.; Chernov, A.V.; Alexandrov, A.A.; Polyanichenko, D.S.; Ierusalimov, V.S.; Petrov, S.A.; Butakova, M.A. Machine Learning and 3D Reconstruction of Materials Surface for Nondestructive Inspection. *Sensors* 2022, 22, 6201. <https://doi.org/10.3390/s22166201>
5. A. Alexandrov, A. Chernov, O. Kartashov, D. Polyanichenko and M. Butakova, "Design and Implementation of Hardware-Software Cloud System for Aero- Ion and Climate Monitoring with Data Consolidation," 2022 4th International Conference on Control Systems, Mathematical Modeling, Automation and Energy Efficiency (SUMMA), Lipetsk, Russian Federation, 2022, pp. 489-493, doi: 10.1109/SUMMA57301.2022.9974039.
6. D. S. Polyanichenko, A. V. Chernov, O. O. Kartashov, A. A. Alexandrov, V. V. Butova and M. A. Butakova, "Intelligent Detection of the Nanomaterials Spatial Structure with Synthetic Electron Microscopy Images," 2022 XXV International Conference on Soft Computing and Measurements (SCM), Saint Petersburg, Russian Federation, 2022, pp. 254-258, doi: 10.1109/SCM55405.2022.9794885.
7. A. V. Chernov, M. A. Butakova, O. O. Kartashov and A. A. Alexandrov, "Intelligent Decision Support by Means of Dynamic Description Logic," 2019 XXII International Conference on Soft Computing and Measurements (SCM)), St. Petersburg, Russia, 2019, pp. 138-141, doi: 10.1109/SCM.2019.8903760.
8. V. Chernov, D. N. Chupiy, A. A. Alexandrov and A. M. Miroshnikov, "An Approach to Testing the Hardware Modules of Locomotive Driver Console Simulator," 2018 IEEE East-West Design & Test Symposium (EWDTS), Kazan, Russia, 2018, pp. 1-4, doi: 10.1109/EWDTS.2018.8524765.



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**Academic positions:**

Laboratory of Artificial Intelligence and Big Data  
Technologies for Nanodiagnostics of Materials –  
Engineer.

**Education and Degrees:**

RSTU, 09.03.01 " Computing machines, complexes, systems and networks ", 2015.

RSTU, master's degree, 09.04.01 "Informatics and computer technology", 2017.

RSTU, PhD student, 09.06.01 "Informatics and computer technology", 2021.

**Research sectors (Keywords):**

Machine learning, computer vision, intelligent and cyber-physical systems, data analysis, multi-sensor systems, data fusion.

**Fields of interest:**

Development of hardware and software using microcontrollers, increasing the information content of the description of the research object or the environment based on multisensory consolidation of data coming from heterogeneous sources.

**Methods:**

Methods and technologies for data fusion that allow you to obtain more information than considering each source of information separately from each other.

**Professional Service**

**Scientific publications in referred journals:**

1. Kartashov, O.O.; Chapek, S.V.; Polyanichenko, D.S.; Belyavsky, G.I.; Alexandrov, A.A.; Butakova, M.A.; Soldatov, A.V. Online Microfluidic Droplets Characterization Using Microscope Data Intelligent Analysis. Big Data Cogn. Comput. 2023, 7, 7. <https://doi.org/10.3390/bdcc7010007>

2. Kartashov, O.O.; Chapek, S.V.; Polyanichenko, D.S.; Belyavsky, G.I.; Alexandrov, A.A.; Butakova, M.A.; Soldatov, A.V. Online Microfluidic Droplets Characterization Using Microscope Data Intelligent Analysis. *Big Data Cogn. Comput.* 2023, 7, 7. <https://doi.org/10.3390/bdcc7010007>
3. Chernov, A.V.; Savvas, I.K.; Alexandrov, A.A.; Kartashov, O.O.; Polyanichenko, D.S.; Butakova, M.A.; Soldatov, A.V. Integrated Video and Acoustic Emission Data Fusion for Intelligent Decision Making in Material Surface Inspection System. *Sensors* 2022, 22, 8554. <https://doi.org/10.3390/s22218554>
4. Kartashov, O.O.; Chernov, A.V.; Alexandrov, A.A.; Polyanichenko, D.S.; Ierusalimov, V.S.; Petrov, S.A.; Butakova, M.A. Machine Learning and 3D Reconstruction of Materials Surface for Nondestructive Inspection. *Sensors* 2022, 22, 6201. <https://doi.org/10.3390/s22166201>
5. A. Alexandrov, A. Chernov, O. Kartashov, D. Polyanichenko and M. Butakova, "Design and Implementation of Hardware-Software Cloud System for Aero- Ion and Climate Monitoring with Data Consolidation," 2022 4th International Conference on Control Systems, Mathematical Modeling, Automation and Energy Efficiency (SUMMA), Lipetsk, Russian Federation, 2022, pp. 489-493, doi: 10.1109/SUMMA57301.2022.9974039.
6. D. S. Polyanichenko, A. V. Chernov, O. O. Kartashov, A. A. Alexandrov, V. V. Butova and M. A. Butakova, "Intelligent Detection of the Nanomaterials Spatial Structure with Synthetic Electron Microscopy Images," 2022 XXV International Conference on Soft Computing and Measurements (SCM), Saint Petersburg, Russian Federation, 2022, pp. 254-258, doi: 10.1109/SCM55405.2022.9794885.
7. A. V. Chernov, M. A. Butakova, O. O. Kartashov and A. A. Alexandrov, "Intelligent Decision Support by Means of Dynamic Description Logic," 2019 XXII International Conference on Soft Computing and Measurements (SCM)), St. Petersburg, Russia, 2019, pp. 138-141, doi: 10.1109/SCM.2019.8903760.
8. V. Chernov, D. N. Chupiy, A. A. Alexandrov and A. M. Miroshnikov, "An Approach to Testing the Hardware Modules of Locomotive Driver Console Simulator," 2018 IEEE East-West Design & Test Symposium (EWDTS), Kazan, Russia, 2018, pp. 1-4, doi: 10.1109/EWDTS.2018.8524765.