

# Sergey Korpachev

## Personal data:

Date of Birth: 11 July (07) 1994

Citizenship: Russian Federation

Contact phone: + 7 – 962 – 996 – 93 – 37

E-mail addresses: korpachevss@lebedev.ru, korpach@lebedev.ru, korpachev.ss@phystech.edu, sergey.korpachev@desy.de

GitHub page: [SergeyKorpachev](#)

Middle name: Sergeevich

## Education:

01.09.2012 – 31.08.2016, NRNU MEPhI, bachelor's degree, Faculty of Experimental and Theoretical Physics, chair №. 7 “Experimental Nuclear Physics and Cosmophysics”, group of physics of fundamental interactions.

09.01.2016 – 31.08.2018, NRNU MEPhI, master's degree, diploma with honours, Institute of Nuclear Physics and Engineering, chair №. 7 “Experimental Nuclear Physics and Cosmophysics”, group of physics of fundamental interactions.

01.09.2018 – up to now, MIPT (State University), PhD student, Department of General and Applied Physics, chair “Fundamental interactions and elementary particle physics”, physics and astronomy, high energy physics. Preliminary title of PhD thesis: Development of methods for the reconstruction of events in detectors with highly granular calorimeters.

## Work experience:

01.02.2016 – 31.03.2016, NRNU MEPhI, chair №. 7 “Experimental Nuclear Physics and Cosmophysics”, position – laboratory assistant.

03.10.2016 – 31.12.2019, NRNU MEPhI, Inter-faculty laboratory of silicon photomultipliers №366, position – engineer.

17.07.2017 – up to now, P.N. Lebedev Physical Institute of the Russian Academy of Sciences, Laboratory of Heavy Quarks and Leptons, position – junior researcher.

## Teaching experience:

1. I was a mentor (supervisor) in the fall semester of 2019 to three first-year bachelor students at MIPT, Department of General and Applied Physics.

2. I gave an introduction lecture on machine learning (in general and in high energy physics) for students in April 2020, 2021 and 2022.

3. I am a co-author of the Machine Learning Course ([depot-hep/ml-lpi](#)) for high energy physics students. Python and neural networks modules.

4. I was a mentor (Python Teaching Assistant) in the fall semester of 2021 for first-year bachelor students at MIPT, Department of General and Applied Physics.

5. I prepared and supervised ML/DL competition on [Kaggle](#) for [ICL students](#).

6. I teach Python at the preparatory department of MIPT for foreign students.

## Conferences (oral and poster talks only):

10 – 14 October 2016, The 2nd International Conference on Particle Physics and Astrophysics (ICPPA 2016).

15 – 16 December 2016, DESY CALICE AHCAL Main Meeting.

17 – 21 April 2017, VI International Youth Scientific School-Conference "Modern Problems of Physics and Technology".

27 – 28 April 2017, III Inter-institute youth conference "Particle Physics and Cosmology".

2 – 5 October 2017, The 3rd International Conference on Particle Physics and Astrophysics (ICPPA 2017).  
20 – 23 November 2017, Youth conference on theoretical and experimental physics.  
9 – 10 April 2018, VII Inter-institute youth conference "Particle Physics and Cosmology".  
16 – 21 April 2018, VII International Youth Scientific School-Conference "Modern Problems of Physics and Technology". Poster talk.  
23 – 27 April 2018, The XXII International Scientific Conference of Young Scientists and Specialists (AYSS 2018).  
22 – 26 October 2018, The 4th International Conference on Particle Physics and Astrophysics (ICPPA 2018). Poster talk.  
26 – 29 November 2018, Youth conference on theoretical and experimental physics.  
20 – 27 February 2019, Moscow International School of Physics 2019. Poster talk.  
11 – 12 April 2019, VIII Inter-institute youth conference "Particle Physics and Cosmology".  
25 – 28 November 2019, Youth conference on theoretical and experimental physics.  
3 – 9 March 2020, Moscow International School of Physics 2020. Poster talk.  
28 – 30 September 2020, CALICE Collaboration Meeting.  
5 – 9 October 2020, 5th International Conference on Particle Physics and Astrophysics (ICPPA 2020).  
16 – 19 November 2020, Youth conference on theoretical and experimental physics.  
23 – 24 November 2020, IX Inter-institute youth conference "Particle Physics and Cosmology".  
30 June 2021, CALICE Analysis Meeting.  
8 – 10 September 2021, CALICE Collaboration Meeting.  
15 – 18 November 2021, Youth conference on theoretical and experimental physics.  
19 – 20 April 2022, XI Youth conference "Particle Physics and Cosmology".

#### Articles:

WoS ResearcherID: A-9052-2018.  
Scopus AuthorID: 57193742147.  
ORCID ID: 0000-0002-5339-5160.  
SPIN eLIBRARY.RU: 5971-9339.

1. Proceedings from ICPPA 2016, Moscow, Russia. "Geant4 simulation of optical photon transport in scintillator tile with direct readout by silicon photomultiplier". DOI: 10.1088/1742-6596/798/1/012218.
2. Proceedings from ICPPA 2017, Moscow, Russia. "Tests of Scintillator Tiles for the Technological Prototype of Highly Granular Hadron Calorimeter". DOI: 10.18502/ken.v3i1.1768.
3. Proceedings from VII Inter-institute youth conference "Particle Physics and Cosmology" 2018, Moscow, Russia. "Study of the Response Uniformity of Scintillator Tiles for Highly Granular Calorimeters". DOI: 10.3103/S1068335618100093.
4. Proceedings from Moscow International School of Physics 2018, HSE Study Center "Voronovo, Russia. "Detector Effects on the Response of a Highly Granular Hadron Calorimeter to Single Hadrons". DOI: 10.3103/S1068335620040028.
5. Proceedings from ICPPA 2020, Moscow, Russia. "Validation of Geant4 Simulation and Digitization of a SiPM-on-Tile System". DOI: 10.1134/S1063778821040104.
6. "Machine-learning-based prediction of parameters of secondaries in hadronic showers using calorimetric observables". Article at the final stage of preparation. <https://arxiv.org/abs/2205.12534>.

#### Other experience:

1. Visits to DESY, Hamburg in December (2016, 2017, 2018, 2019) for work in CALICE AHCAL and FTX (FLC) groups.
2. Participation in the International School of Subatomic Physics, "Ecole Internationale de Physique Subatomique (EIPS) 2018" in Lyon, France.

3. Participation in the Fifth Machine Learning summer school, Machine learning in high energy physics (MLHEP) 2019, DESY Hamburg, Germany.
4. Participation in the Second (2020) and Third (2021) HSE-Yandex autumn school on generative models, NRU HSE, Moscow, Russia.
5. Work in the admission committee of NRNU MEPhI (every summer from 2013 to 2019).