BORIS SHIROKIKH

Data Scientist

@ boris.shirokikh@phystech.edu +7 (925) 383-34-09 Moscow, Russia https://github.com/BorisShirokikh

EXPERIENCE

CNBR, Skoltech | Deep Learning Engineer

Jul. 2019 - Present Moscow, Russia

- Developing a brain MRI preprocessing pipeline for DL algorithms.

CDISE, Skoltech | Deep Learning Engineer

Mar. 2018 - Jul. 2019 Moscow, Russia

- White Matter Hyperintensity segmentation. Integrated DL algorithm into CoBrain production as Docker container.

IITP RAS | Middle Data Scientist

May 2017 - Present Moscow, Russia

- Sparse Group-Lasso Inductive Matrix Completion for recommended systems.
- Automatic chemical design and chemical properties prediction using a data-driven continuous representation of molecules. CNN and RNN experience.
- 4th place at WMH Segmentation Challenge 2017 leading neuro.ml team in this competition
- Automatic brain metastases segmentation via CNN. Algorithm installation in Burdenko Gamma-Knife center. Speeding up a workflow and standardizing delineation results.
- Leading team of 2 researches on a task of brain glioma segmentation. Aiming to develop an integrable automatic algorithm.
- Leading a research project: proposal of a new loss function for medical image segmentation tasks.

PUBLICATIONS

Russian Science Citation Index

- Shirokikh B., Safiullin A., Musabayeva A., Belyaev M.: Evaluation of the influence of convolutional network architectures and preliminary data processing on the quality of segmentation of neuroimaging data // *Proceeding of the Information technologies and systems*, *Vol. 41*, 2017
- Shirokikh B., Belyaev M.: The influence of data preprocessing and augmentation on the quality of white matter hyperintensity by deep learning algorithms // *Proceeding of the Information technologies and systems*, *Vol. 42*, 2018

Scopus / WoS

- Krivov E., Kostjuchenko V., Dalechina A., Shirokikh B., Makarchuk G., Denisenko A., Golanov A., Belyaev M.: Tumor Delineation For Brain Radiosurgery by a ConvNet and Non-Uniform Patch Generation // *4th International Workshop Patch-MI, MICCAI 2018, Proceedings*
- Shirokikh B., Dalechina A., Shevtsov A., Krivov E., Kostjuchenko V., Durgaryan A., Galkin M., Osinov I., Golovanov A., Belyaev M.: Deep Learning for Brain Tumor Segmentation in Radiosurgery: Prospective Clinical Evaluation // *International workshop BrainLes, MICCAI 2019, Proceedings* (Accepted paper)

EDUCATION

MS | Applied Math and Physics

Moscow Institute of Physics and Technology

2018 - Present

current GPA: 4.56/5.00

BS | Applied Math and Physics

Moscow Institute of Physics and Technology

2014 - 2018

Thesis on developing DL segmentation algorithms robust to medical data variability.

SKILLS

ML / DL

NumPy Pandas Scikit-learn SciPy PyTorch TF Keras

Programming / Tech

Python C Java SQL Linux Bash Git Docker

Math

- Calculus, Algebra, Linear Algebra
- Discrete Math, Networks
- Algorithms, Optimization
- Statistics

Languages

- English (fluent)
- Russian (native)

OTHER

- Russian National Physics Olympiad awardee
- Different professional sports ratings in swimming, table tennis and martial arts.
- Recommended system, reinforcement learning for-fun side projects