

Arsenii Mustafin

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Github: [gaarsmu](https://github.com/gaarsmu)

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Interests

Machine Learning, Computer Vision, Time series analysis, Reinforcement Learning

Education

- PhD, Department of Computer Science**, Boston University, Boston, MA, US 2019/09-present
- GPA: 3.85/4.00
 - Field of research: Deep learning with a focus on sequential data modeling and prediction
 - Research advisor: Dr. Sarah Bargal
- Exchange program in Economics, Peking University, Beijing, PRC 2014/02-2014/07
- Masters, Department of Economics**, Saint Petersburg State University, Saint Petersburg, Russia 2013/09-2015/07
- Asian and African economies and International Economic Relations MA Program
 - Diploma with honor (GPA 4.88/5.00)
 - Thesis: "Reform of state-owned enterprises in China"
- Exchange program in Chinese language, Shenzhen University, Shenzhen, PRC 2011/09-2012/06
- Bachelors, Department of Social Sciences**, Herzen University, Saint Petersburg, Russia 2008/09-2013/07
- Diploma with honor (GPA 4.94/5.00)

Research experience

- Research fellow, Department of Computer science, Boston University** 2019/09-Present
- Explainable AI algorithms in Computer Vision applied to medical images under the supervision of Prof. Sarah Adel Bargal and Prof. Vijaya Kolachalama (BU Med School)
 - Member of BU team participating DARPA Semafor multi-modal DeepFake detection project, team lead – Prof. Kate Saenko
- Research Intern, VIZIT** 2020/05-2020/08
- Research on explainable AI techniques applied to CV models under the head of research – Dr. Elham Saraee
- Visiting researcher, Department of Computer Science, University of Texas at Austin** 2018/04-2018/09
- Research on application of machine learning in trading
- Research fellow, School of Economics, Fudan University** 2015/09-2018/04
- Research on quantitative analysis of international trade

Work Experience

- Machine learning and data analysis advisor, marketing department, Skyeng** 2018/09-2019/08
- Skyeng is the largest online English teaching platform in Russia, <https://en.skyeng.ru>
 - Used machine learning for data-driven evaluation of marketing strategies and marketing activities planning
 - Part-time remote job
- Quantitative/Machine learning developer, R&D department, Finery Tech** 2018/09-2019/02
- Finery Tech is finance and trading company, <https://www.finery.tech>
 - Developed an environment to test trading strategies
 - Performed financial data research and developed algorithms for market maker robots
- Volunteer participant, BigDL project by Intel** 2017/08-2018/04
- Worked in a team responsible for building RL and have built a few algorithms, like DQN, DDQN, REINFORCE, TRPO and PPO, utilized Actor-Critic and GAE advantage estimators
 - Presented the intermediate results during the O'REILLY AI conference in Beijing

Key Skills

Algorithmic: **Machine learning/data analysis** – traditional ML algorithms, e.g. Linear and Logistic Regression, SVM, GBT, RF, PCA etc. and their evaluation, regularization and tuning methods

Deep learning – building neural networks, NN optimization algorithms, regularization and tuning methods, experience with building RNNs and CNNs based architectures, explainable AI for Computer Vision algorithms

Reinforcement learning – RL algorithms, advantage estimation methods

Time series – time series models from traditional econometrics (ARIMA, GARCH) up to RNN and TCN

Software: **Python** – Tensorflow 1 and 2 (most experienced, able to implement CPU/GPU parallelized computation and optimization with tf.GradientTape), keras, pytorch, scikit-learn, xgboost, pandas

Linux (+git), docker, SQL

Languages: fluent in **Russian, English and Chinese**

Selected Projects & Publications

Mustafin, A.*, Jain, S.*, Majumdar S.*, Tourni, I.*, Bargal S., Saenko K., Sclaroff S. (2020). *Ani-GIFs: A Benchmark Dataset for Domain Generalization of Action Recognition from GIFs*

- The paper presents a dataset for Domain Generalization problems in the video domain

CS542 Machine Learning in class kaggle challenge, [kaggle](#):

- Airbnb price prediction challenge, 2nd place

MyNN neural network package and RL algorithms, [github](#):

- Neural network package build on raw numpy from scratch, used to build Reinforcement Learning algorithms solving standard OpenAI Gym environments

Mustafin, A. (2017). *Testing the impact of the EACU on trade between member countries*

- Testing the impact of the EACU and EAEU by gravity model
- Published in Chinese in conference papers, English version is available on my [github](#)

Professional Activities

Invited speaker, Building deep reinforcement learning applications on BigDL and Spark, O'REILLY AI conference, Beijing **2018/04**

Author presenter, "Testing the impact of the EACU on trade between member countries", "3rd Conference on Ocean and Border Cooperation", Beijing **2017/09**

Memberships: AI Research Initiative (BU), BU IVC group, CVF

Grants, Honors and Awards

Amazon DeepFake challenge promotional credit, \$1250 **2020/01**

Chinese government scholarship, China **2015-2018**

Dean scholarship for excellent students, Herzen University **2009-2013**

Vladimir Potanin Fellowship, Russia **2009-2010**

Graduated from Presidential Physics and Mathematics Lyceum No. 239 secondary school, top school in Russia, acceptance rate <2.5%

Selected coursework

BU CS 591: Deep Learning, Boston University **2020/05**

BU CS 531: Advanced Optimization Algorithms, Boston University **2020/05**

BU CS 537: Randomness in Computation, Boston University **2020/05**

BU CS 565: Algorithmic Data Mining, Boston University **2019/12**

BU CS 542: Machine Learning, Boston University **2019/12**

Graduate Course: Advanced Econometrics, Fudan University **2016/01**

Graduate Course: Econometrics II – Time Series Analysis **2018/01**

Coursera: Machine Learning and Data Analysis **2017/08**

Coursera: Deep Learning Specialization **2018/02**

References

Sarah Adel Bargal, PhD., Research Assistant Professor, Department of Computer Science, Boston University

Kate Saenko, PhD., Associate Professor, Department of Computer Science, Boston University

Yuriy Bogdanov, Head of R&D Department, Finery Tech (Available by request)

Qiang Liu, PhD., Assistant Professor, Department of Computer Science, UT Austin

Adam Klivans, PhD., Associate Professor, Department of Computer Science, UT Austin

Shengsheng (Shane) Huang, Senior Software Architect, Big Data & AI, Intel, Shanghai (Available on my [LinkedIn](#) page)