

Evgeny Krivosheev

Post-doctoral Researcher

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Research Interests

- Computer Vision
- Deep Metric Learning
- Graph Neural Networks
- Crowd-AI Algorithms
- Statistical Inference
- Natural Language Processing

Hobbies

- Boxing
- Hiking

Skills

TECHNOLOGIES

Machine Learning, Deep Learning, Python, Crowdsourcing, Statistics, PyTorch, DGL, Keras, Scikit-learn, Nltk, Matplotlib, Numpy, Pandas, IPython-notebook, etc.

LANGUAGES

English (Fluent), Russian (Native)

Education

UNIVERSITY OF TRENTO (TRENTO, ITALY)

Nov 2016 - May 2020

PhD Candidate, advisor Prof. Fabio Casati

Research topic: Developing cost-aware crowdsourcing and hybrid crowd-machine learning algorithms for document classification, where documents must satisfy a set of criteria that can be verified by human or machines. I work with machine learning, active learning, and crowdsourcing algorithms to discover how artificial intelligence and crowdsourcing can benefit from each other in classification problems.

BELARUSIAN STATE UNIVERSITY (MINSK, BELARUS)

2011 - 2016

Specialist (Master) in Aerospace Information Systems and Radiophysics

GPA 8.6 out of 10 max

GOMEL STATE REGIONAL LYCEUM (GOMEL, BELARUS)

2010 - 2011

Focusing on mathematics, computer science, physics disciplines

GPA 9.3 out of 10 max

Honors & Awards

- A merit-based 15.000€ grant to attend Pi School of AI, 8 weeks long specialised on Machine Learning and Deep Learning, hands-on projects. Rome, Italy, 2017.
- The first absolute place in the regional Gomel Olympiad in Astronomy, Belarus, 2011.
- GoBoiler Research Scholarship, Purdue University, USA, Jan 2016 - May 2016.
- PhD Scholarship, University of Trento, Italy, Nov 2016 - Apr 2020.
- Study Scholarship, Belarusian State University, Minsk, Belarus, 2011-2016.
- The university grant to organise an educational project for long term meetups focused on mathematical disciplines. Minsk, Belarus, 2012.
- A grant to attend the summer school "Advanced Technologies for Nanosatellite Experiments in Space", Samara, Russia, 2014.

Research Experience

Post-doctoral Researcher (Trento, Italy)

June 2020 - present

Research in Graph Neural Networks for Computer Vision

IBM Research (Zurich, Switzerland)

May 2019 - Nov 2019

Research Intern

(6 months)

Implementation and validation of Graph Neural Networks for linking business entities and knowledge graph modelling. Training graph-based distance metric learning neural networks that project business entities from a knowledge graph into the semantic embedding space where related businesses are adjacent in the hidden space.

Demo video of the system is available online: <https://youtu.be/LDzCZNrCm3o>

IBM Benelux & TU Delft (Amsterdam, Netherlands)

June 2018 - Aug 2018

Research Intern

(3 months)

Design active learning and adaptive document classification algorithms for balancing between learning and exploitation (of ML classifiers) to achieve higher classification accuracy for a unit of cost in the hybrid crowd-machine learning classification task.

Pi School (Rome, Italy)

Oct 2017 - Dec 2017

Deep Learning Intern

(2 months)

I have worked on a cyber-security project focused on Ransomware detection through the analysis of users activity. During the project, I communicated a lot with the customer company, processed and cleaned their data, built RNN deep networks.

Purdue University (West Lafayette, IN, USA)

Jan 2016 - May 2016

Data Fusion Research Intern

(4 months)

Developing methods for detecting confusions of observations in data fusion where similar or neighbouring objects can be confused during the measurement of values, using an inference procedure based on Markov Chain Monte Carlo sampling and Expectation-Maximisation methods.

iTechArt Group (Minsk, Belarus)

Feb 2015 - Sep 2015

Python Software Engineer

(6 months)

- development endpoints for RESTful Web Services (Python, Django Web framework, Django REST framework)
- troubleshooting backend problems.

Promwad Electronics Design(Minsk, Belarus)

Aug 2014 - Feb 2015

Software Engineer

(6 months)

Design and implementation embedded software for one board Linux computers, micro controllers. Worked on protocols for printer communication and heart rate monitoring in fitness trackers.

Leadership

Founder and head of "Mutual assistance" project at Belarusian State University. The goal of the project is to help undergraduate students to learn mathematical disciplines with assistance of senior students. Me and my team of 10 senior students have been organising workshops, seminars, lectures. The project has been successfully working since 2012.

Reviewer

Reviewer at WWW 2017, ICWE 2017, BPM 2017, WWW 2018, WSDM 2020

Papers

Evgeny Krivosheev, Mattia Atzeni, Paolo Scotton, Fabio Casati, Katsiaryna Mirylenka. [Graph Neural Networks for Data Integration](#)

Evgeny Krivosheev, Fabio Casati, Marcos Baez and Boualem Benatallah. [Combining Crowd and Machines for Multi-predicate Item Screening](#). ACM CSCW 2018

Evgeny Krivosheev, Jorge Ramírez, Marcos Baez, Fabio Casati and Boualem Benatallah. [Leveraging Crowd and AI to Support the Search Phase of Literature Reviews](#). AAAI HCOMP 2018

Jorge Ramirez, Evgeny Krivosheev, Marcos Baez, Boualem Benatallah and Fabio Casati. [CrowdRev: A platform for Crowd-based Screening of Literature Reviews](#). ACM Collective Intelligence 2018

Evgeny Krivosheev, Bahareh Harandizadeh, Fabio Casati and Boualem Benatallah. [Crowd-Machine Collaboration for Item Screening](#). IW3C2 WWW 2018

Evgeny Krivosheev, Fabio Casati and Boualem Benatallah. [Crowd-based Multi-Predicate Screening of Papers in Literature Reviews](#). IW3C2 WWW 2018

Evgeny Krivosheev, Valentina Caforio, Boualem Benatallah and Fabio Casati. [Crowdsourcing Paper Screening in Systematic Literature Reviews](#). AAAI HCOMP 2017

E. O. Krivosheev, I. A. Shalatonin, A. A. Spiridonov, V. A. Saechnikov. **Development control system for nanosatellite simulators. Collecting and processing data from nanosatellite simulators**. VI Belarusian Space Congress, 2014, Minsk (in Russian)

References

Dr Abdel Labbi, Department Manager Cognitive Computing & Industry Solutions, IBM Research Zurich, Switzerland, email: abl@zurich.ibm.com

Dr Katsiaryna Mirylenkai, Research Staff Member, IBM Research Zurich, Switzerland, email: kmi@zurich.ibm.com

Dr Paolo Scotton, Team Lead & Research Staff Member, IBM Research Zurich, Switzerland, email: psc@zurich.ibm.com

Dr Fabio Casati, i) Professor, Department of Information Engineering and Computer Science, University of Trento, Italy; ii) Principal Machine Learning Engineer, ServiceNow, USA, email: fabio.casati@unitn.it

Dr Sunil Prabhakar, Professor and Head of Computer Science at Purdue University, USA, email: sunil@purdue.edu

Dr Alessandro Bozzon, Professor, Department of Electrical Engineering, Mathematics and Computer Science, Delft University of Technology, Netherlands, email: a.bozzon@tudelft.nl

Dr Zoltán Szilávik, AI Research Director, myTomorrows, Netherlands, email: zolley@gmail.com

Dr Siarhei Bykau, Software Engineer, Airbnb, USA, email: siarhei.bykau@airbnb.com
