Evgeny Krivosheev

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Hello! I am a PhD Candidate at the University of Trento, Italy. In my PhD, I work on developing *crowdsourcing* and *hybrid crowd-machine learning algorithms* for document classification where documents must satisfy a set of predicates that can be verified by human or machines.

For instance, in systematic literature reviews, where candidate papers are screened based on a set of criteria to asses whether they are in scope for the review (e.g., predicate 1: "Does the paper describe an RCT study?", predicate 2: "Does the paper describes an experiment targeting older adults?").

Currently, I explore *active learning* and *reinforcement learning* to determine how artificial intelligence and crowdsourcing can benefit from each other to optimise the *accuracy vs money trade-off*.

In my projects I mostly use Python language and many py-tools, such as Scikit-learn, Keras, Pandas, NumPy, nltk, gensim, Matplotlib, iPython Notebook, etc.

I continuously learn by reading scientific papers, doing courses, and listening podcasts (Linear Digressions, TWiML&AI, AI in industry).

My strength:

-Always seeking for new knowledge

Hobbies:

- boxing
- hiking

Skills

TCHNOLOGIES

Crowdsourcing, Python, Machine Learning, Statistics

LANGUAGIES

English (B2, IELTS academic), Russian (native speaker)

Education

UNIVERSITY OF TRENTO (ITALY)   Nov 2016 - present

PhD Candidate, advisor Fabio Casati

Research topic: cost-aware crowdsourcing and hybrid crowd-machine algorithms for screening documents that satisfy a set predicates (e. g., research topics) that can be verified by machine classifiers and/or crowd workers.

BELARUSIAN STATE UNIVERSITY (BELARUS)   2011 - 2016

Specialist in Aerospace information systems and Radiophysics   (5 years)

Work Experience

IBM Benelux, Amsterdam
June 2018 -Aug 2018

Active Learning Research Intern   (3 months)

Designing active learning algorithms for document classification based on a set of predicates. Design adaptive strategies for determining how to optimally invest a given budget in the classification problem, where the best approach (crowdsourcing, AI, crowd+AI) for the dataset is unknown in advance.

Pi School, Italy
Oct 2017 - Dec 2017

Deep Learning Intern   (2 months)

Won a merit-based 15.000€ grant to attend Pi School of AI, 8 weeks long specialised school with classes and seminars on Machine Learning and Deep Learning, hands-on projects, and mentoring by researchers of the field. 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 an RNN deep neural network.

Purdue University (USA, IN)
Jan 2016 – May 2016

Crowdsourcing and Data Fusion Research Intern   (4 months)

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

iTechArt Group, Belarus
Feb 2015 - Sep 2015

Junior Python Software Engineer   (6 months)

- development endpoints for RESTful Web Services (Python, Django Web framework, Django REST framework)

- troubleshooting backend problems.

Promwad Electronics Design, Belarus
Aug 2014 - Feb 2015

Junior Software Engineer   (6 months)

Design and implementation embedded software for one board Linux computers, micro controllers.

Organizational Skills

Founder of "Elective 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 organizing workshops, seminars, lectures. The project has been successfully working since 2012.

Publications

Evgeny Krivosheev, Fabio Casati, Marcos Baez and Boualem Benatallah. *Combining Crowd and Machines for Multi-predicate Item Screening*. ACM CSCW 2018, Full Paper

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, WiP Paper

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, Short paper

Evgeny Krivosheev, Bahareh Harandizadeh, Fabio Casati and Boualem Benatallah. *Crowd-Machine Collaboration for Item Screening*. IW3C2 WWW 2018, Poster

Evgeny Krivosheev, Fabio Casati and Boualem Benatallah. *Crowd-based Multi-Predicate Screening of Papers in Literature Reviews*. IW3C2 WWW 2018, Full paper

Evgeny Krivosheev, Valentina Caforio, Boualem Benatallah and Fabio Casati. *Crowdsourcing Paper Screening in Systematic Literature Reviews*. AAAI HCOMP 2017, Full paper

E. O. Krivosheev, I. A. Shalatonin, A. A. Spiridonov, V. A. Saechnikov. *Development of the module for control system, collecting and processing data for the nanosatellite simulator*. VI Belarusian Space Congress, October 28-30, 2014, Minsk (in Russian)

References

- Dr. Fabio Casati, Professor, Department of Information Engineering and Computer Science, University of Trento, Italy, email: fabio.casati@unitn.it

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

- Dr. Zoltán Szlávik, Center for Advanced Studies Benelux - Lead, IBM, Netherlands, email: zoltan.szlavik@nl.ibm.com

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