

# Evgeny Krivosheev

Email: [evgeny.krivosheev@unitn.it](mailto:evgeny.krivosheev@unitn.it)

Github: [Evgeneus](#)

Personal page: [krivosheev.me](http://krivosheev.me)

Post-Doctoral researcher in Deep Learning and hybrid Human-AI systems aspiring to build a career in the Technology sector with a focus on applied AI and data-driven solutions.

## RELEVANT SKILLS

- |                   |                           |                                 |
|-------------------|---------------------------|---------------------------------|
| -Machine Learning | -Domain Adaptation        | - Data Fusion and Crowdsourcing |
| -Deep Learning    | -Graph Neural Networks    | - Natural Language Processing   |
| -Computer Vision  | -Self-Supervised Learning | - Statistics                    |

### Languages/Tools:

Python, PyTorch, Scikit Learn, Pandas, Numpy, Matplotlib, Notebook, NLTK, Django, Google Cloud, Git.

**Neural Networks:** CNN, ResNet, Graph-CNN, RNN, Vision Transformers, DAN, PointNet, Siamese Nets, etc.

**Unsupervised/Self-supervised models:** Deep Cluster V2, Byol, SimCLR, SimSiam, MoCo, BERT, Word2Vec.

## WORK EXPERIENCE

### University of Trento, Multimedia group (Trento, Italy)

June 2020 - present (1 year)

#### Post-Doc in Computer Vision

- Developed a deep learning framework for Unsupervised Domain Adaptation pivoted around Graph Neural Aggregation, GANs, and Curriculum learning, achieving +5% improvement in accuracy with respect to the state-of-the-art algorithm (accepted at CVPR 2021, see [project page](#)).
- Worked with several Self-Supervised visual models (SimCLR, Moco, Byol, Deep Cluster), customised Byol with Ensemble training and Data augmentations (MixUp, CutMix), improving the accuracy by 2%.
- Co-supervised students in technical and methodological aspects in research projects.

### IBM Research (Zurich, Switzerland)

2019 (6 months)

#### Deep Learning intern

- Invented and programmed Self-Supervised Graph Convolutional Net for linking business entities from text to relational database (Dun & Bradstreet) resulting in +7% linkage improvement for Swiss business entities with respect to the current IBM linkage system (accepted as AAAI 2021 paper).
- Deployed the Graph Convolutional Net as a web service with PyTorch, Flask, Docker (see [demo](#)).

### IBM Benelux & TU Delft (Amsterdam, Netherlands)

2018 (3 months)

#### Machine Learning Intern

- Developed Active Learning and Adaptive Human-ML classification algorithms for balancing between training ML models and acquiring reliable training data.
- Reduced document classification cost by 10% while improved accuracy by 5% over several classification tasks with respect to state-of-the-art approaches (two NeurIPS publications).

### Pi School (Rome, Italy)

2017 (2 months)

#### Deep Learning intern

- Engineered an LSTM-based model and its prototype detecting ransomware with 85% precision via the analysis of user activity logs in the operating system (for [memopal.com](http://memopal.com), a backup company).

### Purdue University (West Lafayette, IN, USA)

2016 (4 months)

#### Data Fusion Intern

- Designed a Probabilistic Graphical Model for aggregating data from multiple sources of information.
- Derived and implemented a fusion inference procedure based on Markov Chain Monte Carlo sampling and Expectation-Maximisation methods (published at VLDB conference).

### iTechArt (Minsk, Belarus)

2015

#### Python Software Engineer

- Developed RESTful endpoints and features in admin interface for [classpass.com](http://classpass.com) company (Django, JS).
- Troubleshooted backend, database problems that speeded up SQL queries and email services.

**Embedded Software Engineer**

- Design and implementation of embedded software for one board Linux computers, micro controllers.
  - Implemented algorithms for heart rate monitoring in fitness trackers (Bash, C/C++).
  - Implemented communication protocols for thermal printers and the server (Bash, Python).
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**EDUCATION****University of Trento (Trento, Italy)**

2016 - 2020

**PhD in Informatics (Cum Laude), advisor Prof. Fabio Casati**

- Developed a number of cost-aware crowdsourcing, active learning and hybrid crowd-machine learning algorithms for item classification for low-risk decision making.
  - Main author of 9 papers published on top-tier conferences (WWW, AAAI, NeurIPS, VLDB, HCOMP, CSCW).
  - Co-supervised students and interns in research projects.
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**Belarusian State University (Minsk, Belarus)**

2011 - 2016

Specialist in Information Systems and Radiophysics (equivalent to Master degree)

**PROFESSIONAL ACTIVITIES**

Program committee member at NurIPS 2020 workshop, poster session chair at ICPR 2020, invited speaker at PiSchool 2020, reviewer at WSDM 2020, WWW 2018, WWW 2017, ICWE 2017, BPM 2017.

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**SELECTED PUBLICATIONS**

Curriculum Graph Co-Teaching for Multi-Target Domain Adaptation **CVPR 2021**, Subhankar Roy\*, Evgeny Krivosheev\*, Zhun Zhong, Nicu Sebe, Elisa Ricci, \* - equal contribution.

Business Entity Matching with Siamese Graph Convolutional Networks **AAAI 2021**.

Evgeny Krivosheev, Mattia Atzeni, Katsiaryna Mirylenka, Paolo Scotton, Christoph Miksovic, Anton Zorin.

Spatial Graph Convolutional Network for Pose-Guided Person Image Generation, **ICCV 2021**(under review), Jichao Zhang, Hao Tang, Jingjing Chen, Nicu Sebe, Evgeny Krivosheev, Mengyi Zhao.

A review and experimental analysis of active learning over crowdsourced data, **Artificial Intelligence Review 2021 (Journal)**, Burcu Sayin, Evgeny Krivosheev, Jie Yang, Andrea Passerini, Fabio Casati.

Active Hybrid Classification, **NeurIPS 2020** workshop, Evgeny Krivosheev, Fabio Casati, Alessandro Bozzon

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

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**LANGUAGES**

English (Fluent), Russian (Native)

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**REFERENCES**

Prof. Dr. Nicu Sebe, Head of Dept. of Information Engineering and Computer Science, Huawei Research Ireland, email: niculae.sebe@unitn.it

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

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

Prof. Dr. Fabio Casati, Principal Machine Learning Engineer, ServiceNow, USA, and University of Trento, email: fabio.casati@servicenow.com

Prof. Dr. Alessandro Bozzon, Head of the Department of Sustainable Design Engineering, Delft University of Technology, Netherlands, email: a.bozzon@tudelft.nl

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