Evgeny Krivosheev

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Deep Learning Engineer with Industrial and Research experience aspiring to build a career in the technology sector with a focus on AI, applied research, and data-driven solutions.

Relevant skills: Natural Language Processing (NLP), Computer Vision, Graph Neural Networks, Self-Supervised Learning, Domain Adaptation, Data Fusion and Crowdsourcing.

WORK EXPERIENCE

Jumio Corporation (Italy, Remote)   10.2021 - present
AI Engineer in Document Verification Team

- Developed Transformer Entity Extraction models for PII documents (e.g., Bank docs). Reduced workload on human workforce, in particular, automated document data extraction traffic from zero to ~45% for French, German, Italian, Polish, Dutch countries (achieved exceeded target KPIs).
- Implemented a multilingual document-type reclassification model taking responsibility on guiding the entire feature life-cycle. The service reduced high-severity errors for customers as different risk scores are associated with document types, thus improved accuracy by +10% for the overall document verification process.
- Designed Automatic tests for ML services run at Pull Requests for continuous integration of model updates and code changes (Jenkins, Airflow, AWS Sagemaker).
- Proactively solving new problems. For example, retrained 4 models served in production to be compatible with an updated OCR version, what allowed us to avoid regression in production.

University of Trento, Multimedia group (Trento, Italy)   2020 - 2021 (1.5 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).

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 company (Django, JS).
- Troubleshooted backend, database problems that speeded up SQL queries and email services.

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.

[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.

SELECTED PUBLICATIONS

GIPSO: Geometrically Informed Propagation for Online Adaptation in 3D LiDAR Segmentation **ECCV 2022**, Cristiano Saltori, Evgeny Krivosheev, Stéphane Lathuilière, Nicu Sebe, Fabio Galasso, Giuseppe Fiameni, Elisa Ricci, Fabio Poïes.

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.

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.

LANGUAGIES

English (Fluent), Russian (Native)

HONORS:

- The 1st place in the regional Gomel Olympiad in Astronomy.

- 3rd place in the team running competition at the University (400m).

- Won GoBoiler Research Scholarship, Purdue University, USA.

- Won a University grant and founded the "Mutual assistance" project. For several years, I was leading my team of 10 senior students. We have been organising workshops and lectures on mathematical disciplines for Physics, Biology, and Humanities departments.

- Won PhD Scholarship, the University of Trento, Italy, 2016 – 2020.ology, and Humanities departments.

DOCUMENTS: Italian Permanent Work Permit