

Alexander Pugantsov

Padua, Veneto, Italy – Open to Remote/EOR (EU)

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Research Profile

Applied ML Scientist focused on evaluating and improving real-world ML systems, with expertise in fairness, privacy, and ranking/classification performance. I design reproducible benchmarks and large-scale experiments, quantify trade-offs and risks (e.g., bias, privacy leakage), and translate results into actionable guidance for model selection and deployment.

Pages and Bibliometrics

- Google Scholar: https://scholar.google.com/citations?user=b0i_tFYAAAAJ
- OrcID: <https://orcid.org/my-orcid?orcid=0000-0001-6630-0258>

Research Experience

2024 – **Postdoctoral Researcher, University of Padua** – Padua, Veneto, Italy
Privacy-preserving fairness and diversity estimation.

- Built a reproducible benchmark for evaluating demographic and fairness estimators under realistic deployment constraints.
- Led large-scale experiments across classification, text ranking, and vision tasks, analyzing robustness, distribution shift, and uncertainty.
- Identified privacy vulnerabilities in aggregate estimation systems and quantified trade-offs between utility, robustness, and formal privacy guarantees.

2019 – 2024 **Ph.D., University of Glasgow** – Glasgow, United Kingdom
Effective intermediate task selection in transfer learning.

- Developed an end-to-end framework for predicting effective transfer learning task combinations without exhaustive retraining.
- Proposed representation-based divergence metrics to estimate task similarity and forecast relative transfer gain.
- Reduced training cost by up to 96.5% while maintaining downstream performance, improving efficiency and sustainability of transfer workflows.

Education

- 2019 – 2024 **Ph.D., University of Glasgow** – Glasgow, United Kingdom
Computing Science
Thesis: A framework for effective intermediate task selection in transfer learning.
- 2014 – 2019 **M.Sci., University of Glasgow** – Glasgow, United Kingdom
Software Engineering
Thesis: Deep learning and user modelling.

Selected Publications

- [C2] A. Pugantsov, R. McCreadie: Divergence-based domain transferability for zero-shot classification. *European Chapter of the Association for Computational Linguistics*. 2023. DOI: [10.18653/v1/2023.findings-eacl.122](https://doi.org/10.18653/v1/2023.findings-eacl.122).
- [C1] A. Pugantsov, R. McCreadie: Identifying suitable tasks for inductive transfer through the analysis of feature attributions. *European Conference on Information Retrieval*. 2022. DOI: https://doi.org/10.1007/978-3-030-99739-7_16

Technical Skills

Core: Python; PyTorch; TensorFlow; scikit-learn; Hugging Face.

Focus: large-scale evaluation/benchmarking; fairness & privacy; robustness under distribution shift; uncertainty analysis.

Engineering: Git; Docker; Linux; CI/CD.

Languages: English (Native), Russian (Native), Italian (Beginner)

Industry Experience

- 2019 **Automation Engineer, Barclays** - Glasgow, United Kingdom
- Built internal automation to streamline screening workflows, reducing manual review effort and improving operational throughput for compliance teams.
- 2018 **Software Engineering Intern, Scoop Markets** - Glasgow, United Kingdom
- Implemented a Go-based aggregation pipeline for recommender outputs, surfacing model signals to improve monitoring and interpretability of entity-level predictions.