AIDA USMANOVA

Doctoral Student ∼ NLP Research

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SUMMARY

PhD student focusing on NLP, LLMs and Knowledge Graphs with application in sustainability. Possesses a strong background in backend development and machine learning. Proven track record of conducting research and developing AI solutions for environmental impact, research published at IEEE and presented at ACL.

SKILLS

- **Programming languages**: Python, Java, QML
- **Libraries/Frameworks**: Pytorch, Sklearn, LangChain, Django, QT, Celery
- **Databases**: MySQL, PostgreSQL, MongoDB, Neo4j
- **Machine Learning**: LLMs, RAG, Knowledge Graphs

EDUCATION

Nov. '23 - Present	**Ph.D., Natural Language Processing** Research in NLP for Social and Environmental Good	**Leuphana University Lüneburg**
Sep. '23	**M.Sc., Intelligent Adaptive Systems**	**University of Hamburg**
July '20	**B.Tech, Information Systems** GPA: 3.7/4.0, Degree: 1st Class Honours	**Kazakh-British Technical University**
Spring '19	**BSc., Computer Science** Exchange Program GPA: 4.5/4.5	**Sejong University**

EXPERIENCE

Nov '23 – present — **Doctoral Researcher** — **AIX Lab, Leuphana University Lüneburg**
- Conducting cutting-edge research in NLP applications for social and environmental impact, developing novel methodologies for misinformation detection and information extraction
- Collaborating with multi-disciplinary teams of microeconomists and environmental scientists to represent reports as graphs coupled with robust RAG-based QA system for sustainability policymakers
- Investigating knowledge-related biases and factuality in Wikidata

May '23 – present — **AI and Learning Analytics Researcher** — **United Nations Systems Staff College**
- Optimized machine learning-based course recommendation system for BlueLine e-learning platform
- Built analytics dashboard based on feedback sentiments and semantic analyses, improving participant engagement visibility and course impact tracking

Nov. '22 – Aug. '23 — **Machine Learning Engineer** — **AdaLab.ai**
- Fine-tuned state-of-the-art Large Language Models (GPT-3.5, Transformers)
- Performed prompt optimization and hyperparameter tuning for Text-to-Video generation
- Conducted data processing and analysis of 100K+ blood samples, that led to 10% boost in accuracy for heparin induced thrombocytopenia risk prediction

Nov. '21 – Oct. '23 — **Research Assistant** — **Fraunhofer IAPT**
- Led the development of end-to-end Python and QML-based software for robot-assisted additive manufacturing, which improved operational efficiency by 13% and streamlined into existing production workflows
- Mentored interns, presented findings to business users; ensured alignment with industry standards

July '19 – Jan. '21 — **Backend Developer** — **Codebusters**
- Developed secure Django-based backend for software, currently used by the largest retailer in Kazakhstan
- Enhanced railways monitoring system by building modular and scalable backend for automated dashboards

SELECTED PUBLICATIONS

R. Ahmad, **A. Usmanova**, G. Rehm (2025). The ClimateCheck Dataset: Mapping Social Media Claims About Climate Change to Corresponding Scholarly Articles. Proceedings of the 5th Workshop on Scholarly Document Processing. ACL 2025 - Under review

Aida Usmanova, Ricardo Usbeck (2024). Structuring Sustainability Reports for Environmental Standards with LLMs guided by Ontology. Proceedings of the 1st Workshop on Natural Language Processing Meets Climate Change. ACL 2024

H. Giglou, T. Taffa, R. Abdullah, **A. Usmanova**, R. Usbeck, J. D'Souza, S. Auer. Scholarly Question Answering Using Large Language Models in the NFDI4DataScience Gateway. Springer 2024

D. Amangeldi, **A. Usmanova** and P. Shamoi (2024). Understanding Environmental Posts: Sentiment and Emotion Analysis of Social Media Data. IEEE Access

A. Usmanova, J. Huang, D. Banerjee, R. Usbeck (2023). Reporting and Analysing the Environmental Impact of Language Models on the Example of Commonsense Question Answering with External Knowledge. Sustainable AI 2023