

AIDA USMANOVA

Doctoral Student ~ NLP Research

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SUMMARY

Doctoral candidate focusing on NLP, Foundation Models and Knowledge Graphs with application in sustainability. Possesses 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 poster session.

SKILLS

Machine/Deep learning: Pytorch, Sklearn, Tensorflow
Programming languages: Python, Java, QML
Data processing: Pandas, NumPy, Seaborn
Technologies: Django, QT, LangChain, Celery
Databases: SQL, PostgreSQL, MongoDB, Neo4j
Research: Experimental design, Hypothesis testing, Prototyping, LLMs, Knowledge Graphs

EDUCATION

Nov. '23 - '26	Doctoral Researcher, Natural Language Processing Research in NLP for Social and Environmental Good	Leuphana University Lüneburg
Sep. '23	M.Sc., Intelligent Adaptive Systems GPA: 3.2/4.0	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	DAAD Scholarship Researcher • Conducting cutting-edge research in NLP applications for social and environmental impact, developing novel methodologies for misinformation detection and knowledge extraction • Collaborating with multi-disciplinary teams of microeconomists and environmental scientists to detect greenwashing in corporate reports	Leuphana University Lüneburg
May '23 - present	AI and Learning Analytics Consultant • Optimized machine learning-based course recommendation system for UN staff • Leveraged MySQL, Python and Informatica to build custom course analytics dashboard, improving reporting system and data accessibility to participants engagement	United Nations Systems Staff College
Nov. '22 - Aug. '23	Machine Learning Engineer • Fine-tuned state-of-the-art Large Language Models (GPT-3.5, Transformers); performed prompt optimization and hyperparameter tuning • Conducted data processing and analysis of 100K+ blood samples, that led to 10% boost in accuracy for heparin induced thrombocytopenia risk prediction	AdaLab.ai
Nov. '21 - Oct. '23	Research Assistant • Developed end-to-end Python and QML-based software for robot-assisted additive manufacturing, which improved operational efficiency by 15% and streamlined into existing production workflows • Mentored interns, presented findings to business users; ensured alignment with industry standards	Fraunhofer IAPT

PUBLICATIONS

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.

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

Aida Usmanova, Junbo Huang, Debayan Banerjee, Ricardo Usbeck (2023). Reporting and Analysing the Environmental Impact of Language Models on the Example of Commonsense Question Answering with External Knowledge. Sustainable AI 2023, Bonn, Germany.

RESEARCH PROJECTS

- Research on detecting greenwashing within corporate sustainability reports and green claims. The developed tool would assist stakeholders in assessing whether marketing initiatives are aligned with the EU Green Claim Directive. Collaborating with a multi-disciplinary team including microeconomics and environment scientists.
- Environmental claim narrative and truthfulness stance analysis. Investigating the socio-political context in which "green" concepts are being manifested and used.