AIDA USMANOVA

+4915738406841 aidausmanova99@gmail.com

Doctoral Student ~ NLP Research

SUMMARY

Doctoral candidate focusing on NLP, LLMs 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.

EDUCATION

Nov. '23 - '26 **Ph.D., Natural Language Processing** — **Leuphana University Lüneburg**
Research in NLP for Social and Environmental Good

Sep. '23 **M.Sc., Intelligent Adaptive Systems** — **University of Hamburg**

July '20 **B.Tech, Information Systems** — **Kazakh-British Technical University**
GPA: 3.7/4.0, Degree: 1st Class Honours

Spring '19 **BSc., Computer Science** — **Sejong University**
GPA: 4.5/4.5

EXPERIENCE

Nov '23 – present **Doctoral Researcher** — **Leuphana University Lüneburg**
- Conducting cutting-edge research in NLP applications for social and environmental impact, developing novel methodologies for misinformation detection and information extraction

May '23 – present **AI and Learning Analytics Consultant** — **United Nations Systems Staff College**
- 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

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
- 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**
- 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

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
- Engaged with clients to understand project requirements and provide progress updates and incorporated feedback to meet client expectations

SELECTED 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. Shamoi (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.

SKILLS

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