Aleksandra Sorokovikova

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Experience

Machine Learning Engineer July 2022 – Present time

Hyperskill *Remote*

- Single-handedly developed multiple AI assistants using RAG to guide users through their learning paths. Conducted detailed analytical research to measure the impact of these AI assistants on user engagement.
- Conceptualized and independently built an AI-driven system for generating personalized educational content based on users' desired vacancy. Successfully pitched and promoted this initiative to senior management.
- Developed an AI-based system for providing theory hints, covering all stages from problem statement to production. This includes named entity recognition (achieving an accuracy of 0.97), retrieval-augmented generation, and summarization using the Mixtral model.
- Created a churn-prediction model utilizing data from users' initial sessions, employing retentioneering tools and CatBoost, achieving an F1 score of 0.92. This model facilitated quicker responses to user behavior changes and optimized advertisement strategies.
- Implemented a two-tier recommendation system using LightFM and CatBoost, achieving a MAP@5 metric of 0.63.

Data Scientist Intern November 2021 - May 2022

Stepik *Saint-Petersburg*

- Designed a recommendation system employing LSTM + Attention, achieving a MAP@5 metric of 0.29 for over 6 million users and 17 thousand courses. Improved the model's accuracy from 0.14 to 0.23 compared to the previous version.

Education

Constructor University Bremen Bremen, Germany

Master degree in Computer Science *2023 – now*

Constructor University Bremen Bremen, Germany

Bachelor degree in Computer Science *2020 – 2023*

Research Projects

Exploring Communication Styles on Twitter | Published in LREC-Coling 2024 February 2023 – July 2023

- Utilized unsupervised ML techniques to analyze Twitter communities, employing community modeling, graph algorithms, and cluster analysis. Leveraged BERT-like models to perform sentiment analysis.

LLMs Simulate Big Five Personality Traits | Published in EACL 2024 July 2023 – December 2023

- Performed an empirical investigation into how large language models such as Llama2, GPT-4, and Mixtral simulate the Big Five personality traits, contributing to the understanding of personality modeling in AI.

Recommendation system with CLIP architecture| github April 2024 – May 2024

- Developed an advanced movie recommendation system that combines text descriptions and user interaction history. Utilized the CLIP architecture to combine interactions and textual embeddings, using BERT for text encoding and SASRec for sequential recommendation modeling.

Outfit recommendation with Computer Vision| github September 2023 – December 2023

- Fine-tuned a ResNet model to achieve 0.92 accuracy in clothing categorization and a YOLO model for segmentation with an mAP@5 score of 0.566. Built a vector database using Annoy to efficiently index and retrieve similar items.

Comparison of IT trends | article in Russian October 2021 – January 2022

- Conducted a comprehensive study on the application of machine learning methods for information processing and feature engineering. Developed neural network-based models to cluster and categorize text data.

Technical Skills

Languages: Python, C/C++, SQL
Frameworks: Tensorflow, PyTorch, scikit-learn, LangChain, LightGBM, CatBoost, Autogen, Scrapy, Spacy, nltk, numpy, scipy, pandas, Flask
Skills: DL, NLP, NER, LLM Agents, LLM fine-tuning, RAG, Prompt engineering, RecSys
Developer Tools: Git, Docker, AWS, Supabase, Airflow, Bash