

YURII LABA

Natural Language Processing Engineer

+(38) 063 199-7006 • yurii.laba12@gmail.com • [linkedin](#)

EDUCATION

UCU (Ukrainian Catholic University). Lviv, Ukraine
PhD program on Intelligent Systems Sep. 2023 - Present

UCU (Ukrainian Catholic University) Lviv, Ukraine
M.Sc. in Innovation and Entrepreneurship Sep. 2019 - June 2021

UCU (Ukrainian Catholic University) Lviv, Ukraine
B.Sc. in Computer Science Sep. 2015 - June 2019

- Thesis: [Wall-time based performance assessment and comparison framework](#)
- Got university scholarship

PROFESSIONAL EXPERIENCE

Intelliarts Lviv, Ukraine
Machine Learning Engineer, RnD Department October 2020 - present

Managed a team of 3 data scientists and engineers, working across InsureTech, Legal, and Marketing domains to develop and implement machine learning solutions.

- **Fine-Tuning LLMs:** Adapted LLMs to specific business requirements by fine-tuning models on diverse datasets, significantly improving accuracy and utility. Utilized metric learning technique to improve the input representation.
- **Search Engine Development:** Developed multiple search engines leveraging Large Language Models (LLMs) to enhance information retrieval and content discovery.
- **Named Entity Recognition (NER):** Architected and deployed a Named Entity Recognition system using LLMs, aiding in structured data extraction and knowledge graph formation.
- **Relation Extraction:** Implemented a relation extraction system employing LLMs, facilitating the understanding and mapping of relationships within textual data.
- **Sentiment Analysis:** Developed a Sentiment Analysis system using LLMs to gauge customer opinions and feedback, contributing to data-driven decision-making processes.

- **Automatic Speech Recognition (ASR) Tuning:** Specialized ASR models by fine-tuning for distinct business domains, enhancing transcription accuracy and user experience.

Eleks

Lviv, Ukraine

RnD Engineer, RnD Department

September 2018 - October 2020

Worked across Automotive domain

- Designed and built an IoT system to control analog devices via Smart Assistant (e.g., Amazon Alexa) integration, enhancing analog device interoperability.
- Worked on computer vision algorithms, including pose estimation and object tracking, optimized for edge computing environments.

FIELD OF INTEREST

- My primary focus lies in the field of NLP, particularly in enhancing input representation for low-resourced languages. I am keenly interested in advancing the technological standards for the Ukrainian language.
- I am enthusiastic about deploying multimodal data to advance these language models and exploring innovative approaches to improve linguistic representation and machine understanding.
- An additional area of interest involves the compilation of high-quality training datasets and the establishment of robust benchmarks to measure the effectiveness of language models in less-resourced linguistic settings.

PUBLICATIONS

EACL 2023: *Contextual Embeddings for Ukrainian: A Large Language Model Approach to Word Sense Disambiguation*

Developed a novel approach to Word Sense Disambiguation in Ukrainian, utilizing semi-supervised approach for fine-tuning the pre-trained multilingual LLM. Created the comprehensive framework that automates the generation of training and evaluation datasets, the assessment of performance metrics, and the selection of optimal fine-tuning configurations. With proposed approach we achieved a 77.9% accuracy in lexical meaning prediction for homonyms.

TechUkraine 2020: *Are You Going to Touch This? Voice Technology Offers an Option*

Developed a prototype that uses voice controllers connected to a Raspberry Pi to operate non-connected legacy devices, such as air conditioners and televisions, through voice commands.

This setup not only minimizes physical contact but also adds functionalities (e.g., weather-aware settings for air conditioners).

TEACHING EXPERIENCE

Guest lecture at the lectures organized by [AI.HOUSE](#) (workshops and lectures)

TOOLS & SKILLS

- Proficient in Python for various applications including Machine Learning and backend development with frameworks like Flask and FastAPI.
- Utilized C/C++ to work with different low level applications (e.g. Myriad SDK)
- Experienced in building neural networks using PyTorch and TensorFlow libraries.
- Extensive expertise in Natural Language Processing (NLP) with a focus on using HuggingFace and SentenceTransformers libraries.

LANGUAGES

Ukrainian - Fluent
English - Advanced