Zgłoszenie tematu pracy dyplomowej **:: STUDIA II STOPNIA ::**

rok akademicki 2025/26

Promotor:	**dr hab. Jozef Kapusta, prof. UKEN**
Temat pracy magisterskiej (j. polski, j.angielski):	Comparison of Transformer Models and Classical ML Methods for Classifying Text Tone and Emotions *Porównanie modeli Transformer i klasycznych metod uczenia maszynowego w klasyfikacji tonu i emocji w tekstach*
Zakres pracy i oczekiwane rezultaty praktyczne:	The rapid growth of short, user-generated content on social media and online platforms has made automatic analysis of text attitude increasingly important. Beyond basic sentiment, real-world applications often require identifying the tone or style of communication (e.g., formal, friendly, ironic, scientific, neutral–informative), which is challenging due to short context, noise, slang, and domain variability. Recent transformer-based language models have achieved strong results in many NLP tasks. The main aim of this thesis is to design, implement, and experimentally evaluate methods for automatic classification of text tone/style and/or emotions in short texts, with a particular focus on a systematic comparison between transformer-based models and classical machine-learning approaches. The theoretical part will summarize relevant scientific literature on emotion and sentiment classification, and especially on tone/style detection (e.g., formal, friendly, ironic, scientific, neutral–informative). It will also provide an overview of existing models and datasets applicable to this research area. In the practical part, using a selected dataset, the student will train a tone (and optionally emotion) classification model based on classical machine-learning techniques and fine-tune a transformer model for the same task. Both approaches will be compared and evaluated using standard performance metrics. The thesis will conclude with a critical discussion of the limitations of the investigated methods and possible directions for improvement.
Aspekt naukowy, problemowy, innowacyjny pracy:	implementation methods natural language, implementation machine learning methods.
*Oprogramowanie, język programowania, środowisko systemowe:	
*Środowisko uruchomieniowe	
Dodatkowe wymagania i uwagi:	English language

*Literatura:	• Bird, S., Klein E., and Loper, E. (2009). Natural Language Processing with Python - Analyzing Text with the Natural Language Toolkit. O'Reilly Media. • Bengfort, B., Ojeda, T., Bilbro, R. (2018). Applied Text Analysis with Python: Enabling Language - Aware Data Products with Machine Learning, O'Reilly Media, 332 p. • Balapuri ShivaSundar, et al. (2022) Emotion Detection on text using Machine Learning and Deep Learning Techniques. International Journal for Research in Applied Science and Engineering Technology 10(6):2277-2286

*pola opcjonalne