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Enhancing Chinese-english Translation in AI Chatbots: a Comparative Evaluation of Chatgpt-4o and Grok-beta using a Health Science Text From the New York Times

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ABSTRACT

The present study examines the effectiveness of contextual prompting, utilizing a universal prompting template for translation tasks, and revision prompting in enhancing the quality of Chinese-to-English translations of scientific texts. ChatGPT-4o and Grok-beta were employed as the AI translation models. The research utilized a New York Times article on the health benefits of sweet potatoes, along with its official Chinese translation, as the source material. Translation quality was evaluated using BLEU metrics complemented by qualitative measures, including accuracy, faithfulness, fluency, genre consistency, and terminology consistency, which are critical for assessing translations in science and technology domains. Statistical analysis indicated only marginal improvements with the use of second-stage prompting, which involved commands for review and revision. These findings raise questions about the reliability of BLEU scores as a sole evaluation metric. The study highlights the potential of AI-assisted translation for specialized genres while identifying notable discrepancies in chatbot outputs. Based on the findings, the study underscores the need for refined methodologies in evaluating translation quality and advocates for integrating more robust qualitative metrics in future research to enhance the reliability and applicability of AI-assisted translation in specialized contexts.

KEYWORDS

AI-assisted translation; contextual prompting; BLEU metric; qualitative evaluation; Chinese-English translation; health science texts.

Few-shot Event Extraction in Lithuanian: a Layered and Combined Approach with Google Gemini and Openai GPT

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ABSTRACT

Automatic event extraction (EE) is a crucial tool across various domains, allowing for more efficient analysis and decisionmaking by extracting domain-specific information from vast amounts of textual data. In the context of under-resourced languages like Lithuanian, the development of EE systems is particularly challenging due to the lack of annotated datasets. This study investigates and evaluates the event extraction capabilities of two large language models (LLMs): OpenAI's GPT and Google Gemini, using few-shot prompting. We propose novel methodologies, including a combined approach and a layered prompting approach, to improve the performance of these models in identifying two specific event types. The models were benchmarked using various performance metrics, such as accuracy, precision, recall, and F1-score, against a manually annotated gold-standard corpus. The results demonstrate that LLMs achieve satisfactory performance in extracting events in Lithuanian, though model accuracy varied depending on the prompting methodology. The findings highlight the potential of LLMs in tackling event extraction tasks in under-resourced languages while suggesting future improvements through more advanced prompt strategies and methodological refinements.

KEYWORDS

Event Extraction, LLMs, Few-Shot Prompting, Gemini, GPT, Layered Prompting, Combined Prompting.

Assessing and Predicting Air Pollution in Asia: A Regional and Temporal Study (2018-2023)

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ABSTRACT

This study analyzes and predicts air pollution in Asia, focusing on PM 2.5 levels from 2018 to 2023 across five regions: Central, East, South, Southeast, and West Asia. South Asia emerged as the most polluted region, with Bangladesh, India, and Pakistan consistently having the highest PM 2.5 levels and death rates, especially in Nepal, Pakistan, and India. East Asia showed the lowest pollution levels. K-means clustering categorized countries into high, moderate, and low pollution groups. The ARIMA model effectively predicted 2023 PM 2.5 levels (MAE: 3.99, MSE: 33.80, RMSE: 5.81, R²: 0.86). The findings emphasize the need for targeted interventions to address severe pollution and health risks in South Asia.

KEYWORDS

PM 2.5, Air Pollution, Asia, Temporal Analysis, ARIMA, K-means Clustering.

Comparison of LLM Few-Shot vs. Synthetic Data Approaches for Lithuanian Event Extraction

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ABSTRACT

Event Extraction (EE) is a vital technique within Natural Language Processing (NLP) that focuses on identifying event mentions and their triggers from unstructured text. Despite considerable progress in resource-rich languages such as English, EE in under-resourced languages like Lithuanian remains challenging due to the scarcity of labeled training corpora. In response, two distinct approaches have emerged. The first leverages synthetic data generated by large language models (LLMs) to train traditional machine learning (ML) classifiers; the second employs few-shot prompting techniques on powerful LLMs such as OpenAI GPT and Google Gemini, thus bypassing the need for extensive labeled data. This paper presents a comparative analysis of these two strategies for Lithuanian EE, examining both empirical performance metrics—accuracy, precision, recall, and F1-score—and practical considerations such as computational overhead, annotation costs, and adaptiveness to linguistic complexity. Experimental results reveal that synthetic data generation (Approach I) can offer broad coverage, yet it often suffers from lower precision. Few-shot LLM methods (Approach II), while more precise, may exhibit variable recall and demand careful prompt engineering to handle Lithuanian's rich morphology. We further highlight the potential synergy between the two approaches, illustrating how generated synthetic data could refine few-shot prompting or vice versa. The findings aim to guide practitioners in selecting or combining these methods to optimize Lithuanian event extraction in real-world applications.

KEYWORDS

Event Extraction, Few-Shot Prompting, Synthetic Data, OpenAI GPT, Google Gemini, Lithuanian Language, NLP, Comparative Analysis.

The Impact of Democratic Leadership on Job Satisfaction Among Teachers in South Hebron Directorate Schools

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ABSTRACT

This study aimed to explore the impact of democratic leadership on job satisfaction among teachers in the South Hebron Directorate schools. The study was applied to a random sample representing the study population of teachers in the South Hebron Directorate of Education, with a sample size of 301 teachers from 12 schools. The researcher adopted the descriptive approach as it is the most suitable for the nature of this study, and a questionnaire was used as a tool for data collection and measuring various variables. The study recommended the importance of enhancing the concept of democratic leadership in schools to boost teachers' morale and improve the quality of the educational process. It also encouraged the adoption of democratic leadership styles by administrations, educational areas, and new principals due to their positive and effective impact on job performance. Additionally, the study suggested providing training courses for school principals and new teachers on how to apply the principles of democratic leadership that contribute to creating a positive educational environment and enhance the spirit of cooperation to achieve the school's goals. Finally, the study called for granting school principals more authority and powers to increase their ability to effectively deal with challenges and problems, which contributes to improving the educational process and enhances teachers' job satisfaction.

KEYWORDS

Democratic leadership, Job satisfaction, Teachers, South Hebron Directorate Schools.

How AI and Neuroleadership Transform Leadership for the Modern Organization

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ABSTRACT

This paper explores the integration of Artificial Intelligence (AI) and the CRAVE Leadership Model—Communication, Respect, Authenticity, Vulnerability, and Empathy—as a transformative framework for modern leadership. Leaders can enhance decision-making, emotional intelligence, and team dynamics by leveraging AI's data-driven insights alongside neuroscience-backed principles. The paper examines NeuroLeadership and its emphasis on neuroplasticity to foster adaptability and learning while highlighting how AI tools provide real-time feedback, predictive analytics, and personalized team engagement strategies. Practical applications include adaptive learning platforms, sentiment analysis for emotional intelligence training, and AI-enhanced collaboration tools aligning with the CRAVE pillars. The discussion extends to the ethical implications of AI deployment in leadership, addressing challenges such as data privacy, algorithmic bias, and the potential for dehumanization. Leaders are urged to adopt robust ethical frameworks prioritizing transparency, fairness, and inclusivity, ensuring that AI augments rather than replaces human connection. By aligning technological advancements with the values of the CRAVE model, this paper presents a pathway to innovative and profoundly human leadership, equipping organizations to thrive in a rapidly evolving global landscape.

KEYWORDS

Neuroleadership, Artificial Intelligence (AI), CRAVE Leadership, Emotional Intelligence (EI), Neuroplasticity, Predictive Analytics, Ethical AI, Psychological Safety, Inclusive Leadership.

The Impact of Social Media on Higher Education Students: a Case Study of Universities in Mogadishu, Somalia

Ahmed Ali Ahmed

ABSTRACT

The use of social media has been increasing rapidly in the last few years. It's not just being used by working people but there has also been an increase in the use of social media for high education. The use of social media has had both positive and negative effects on society and our students. While students busy with the social media in a daily above 8hrs. Sometimes you see students sitting in class and using social media, such as TikTok and Facebook. It is a high-level problem that has developed in our growing city of Mogadishu.

KEYWORDS

Social media - TikTok, WhatsApp, Facebook and YouTube, unhealthy addiction.

From Crisis to Insights: Leveraging Data Analytics to Shape Pandemic-ERA Educational Technology Innovations

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ABSTRACT

The COVID-19 pandemic led to the disruption of conventional education systems, which led to the adoption of digital and remote learning platforms. This revolutionary change uncovered the need for new approaches in the development of educational technology. The paper "From Crisis to Insights: Leveraging Data Analytics to Shape Pandemic-Era Educational Technology Innovations" emphasizes the importance of data analytics during this time and provides a framework for how data can inform effective EdTech developments for teaching and learning. This study aims to understand how real-time data from learning management systems, virtual classrooms, and engagement metrics can offer valuable insights into students' behaviors, learning styles, and academic difficulties. Such insights help educators, technologists, and policymakers develop adaptive learning solutions tailored to the different needs of students. Through the presentation of case studies and real-world examples, the paper explains how the use of data-driven innovations has led to enhanced student success, effective teaching practices, and the reduction of learning disparities during the COVID-19 pandemic. Furthermore, the paper critically discusses the ethical challenges that are linked to educational data analytics including privacy concerns, bias-free learning analytics, and ensuring there is equity in the provision of technology to learners. It also highlights the importance of making the processes and outcomes a transparent, inclusive, and collaborative input of all stakeholders to ensure the development of ethical and more sustainable EdTech solutions. Ultimately, this shows how crises can be opportunities for change and how the use of data analytics can help shape the future of education. The outcomes of this study aim to guide stakeholders in developing strong, comprehensive, and technologically advanced educational systems in the new post-pandemic world.

KEYWORDS

Educational Technology (EdTech), Data Analytics in Education, Pandemic-Era Innovations, Learning Management Systems (LMS), Digital Equity.

Self-Efficacy Prediction Model

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ABSTRACT

The objective of this paper is to propose a model to predict teachers' self-efficacy. It is based on Bayesian network model and some important modalities we identified from teachers. Applied to data from a survey nearby teachers of secondary school in Ndjaména, capital of Chad Republic, the results show that the proposed method has major effects on detecting the quality of teachers. It

can be used as a powerful and useful tool for Human Resources Department (HRD) in Electrical Engineering field and some enterprises.

KEYWORDS

prediction, predicted feeling, Bayesian networks, self-efficacy.

Effect of Rock Joint Frequency and Aperture on Cerchar Abrasivity Index

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ABSTRACT

The objective of this study is to investigate the effect of rock joints on the CERCHAR abrasivity index (CAI). Sandstone, limestone, and basalt with parallel fractures with joint numbers varying from 1, 2, 3, to 4, and joint apertures of 0, 0.3, 0.5, to 0.8 mm are tested. The joint spacing is kept constant at 2 mm. The results indicate that the CAI value decreases with increasing joint frequencies and apertures. The ploughing force exerted on the stylus pin is reduced when the pin tip reaches the fracture. This becomes more pronounced as the aperture becomes larger. As the number of joints increases and the separations widen, greater scratching force is increased. The ploughing volume increases as CAI decreases, suggesting that highly fractured rocks show less CAI and less energy to cut while yielding a higher ploughing volume as compared to rock with less fractures.

KEYWORDS

Joint Number, Joint Separation, Ploughing Force, Ploughing Volume.