عنوان مقاله:

Leveraging Large Language Models For Efficient Creation Of Medical Knowledge Graphs

محل انتشار:

دومین کنگره جهانی یافته های نوین در سلامت علوم بهداشتی و علوم تربیتی (سال: 1403)

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خلاصه مقاله:

In the rapidly expanding field of medical research, the ability to efficiently summarize and visualize key elements of scholarly papers is essential. This paper introduces a novel graphic-based application designed to address this need by transforming abstracts into informative graphs that highlight crucial components and their interconnections. Utilizing the BioRed dataset, which has been modified to suit our objectives, our application employs advanced text generation techniques to streamline content comprehension and memory demands. At its core, the application leverages Falcon, a transformer model known for its high parameter count. However, to optimize memory usage, we incorporate Qlora in place of the conventional 'lora', achieving a more efficient performance. The application's workflow involves processing abstracts as sequences, utilizing a unique separator token format for identifying relationships. Training is conducted through text completion tasks, ensuring the model's adeptness in generating accurate summaries. The system's effectiveness which we called BMER (blue medical extractor relation exdite) is validated by two medical research experts, yielding an impressive F١ score rate of ٩٥.١%. The backend of the application is powered by Flask, while the frontend is developed using React, creating a seamless and user-friendly interface. This application represents a significant step forward in making medical literature more accessible and comprehensible, especially for quick-reference purposes.

کلمات کلیدی:

Knowledge Graphs, Text Generation Techniques, Falcon Transformer Model, Abstract Visualization, F١ score Evaluation