

Thesis Title	RETRIEVAL-AUGMENTED GENERATION FOR THAI PUBLIC COMPANIES QUESTION ANSWERING
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ABSTRACT

The analysis and interpretation of annual reports from public companies present significant challenges due to the large volume of unstructured data, especially in Thailand. This paper proposes a Retrieval-Augmented Generation (RAG) framework designed to efficiently process and extract insights from Thai public company annual reports. By integrating Natural Language Processing (NLP) techniques with advanced embedding models and large language models (LLMs), the framework generates contextually accurate and relevant responses to complex queries. The system utilizes the GTE-Large embedding model and the Sentence Window with Reranking configuration to improve retrieval accuracy and contextual precision. Benchmarking results demonstrate that GTE-Large consistently outperforms smaller models, achieving higher recall and ranking quality, while the integration of LLMs such as Mistral-7B further enhances response faithfulness and semantic alignment. The RAG configuration significantly reduces reliance on parametric knowledge, addressing key challenges such as hallucinations and outdated information. This scalable and cost-effective solution is well-suited for financial reporting and has potential applications in other domains.

Keywords: Natural Language Processing, Retrieval-Augmented Generation, Annual Reports, Large Language Models, Financial Data Analysis