



THE UNIVERSITY OF
CHICAGO

DEPARTMENT OF STATISTICS

Master's Thesis Presentation

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“Decoding Domain Jargon: Benchmarking and Component Analysis of
Domain Specific Jargon in Large Language Models”

May 6, 2026, at 10:00 AM
Jones 111, 5747 S. Ellis Avenue

Abstract

Large Language Models (LLMs) have shown remarkable proficiency in general natural language tasks, yet their performance often degrades when applied to highly specialized technical domains. Moreover, there is a lack of understanding regarding where knowledge about jargon exists within these architectures. This paper investigates the ability of LLMs to identify domain-specific jargon. We compare the performance of general-purpose models and domain-specific fine-tuned models on two jargon evaluation benchmarks. Furthermore, we conduct a component analysis of the LLMs to evaluate contributions of individual model components and implement a component reweighting method to optimize performance on jargon-related tasks. The results demonstrate that general-purpose models perform better than domain-specific fine-tuned models. Notably, by conducting component analysis, we identify several components that potentially contain knowledge about jargon. The reweighting strategy leads to an accuracy improvement of 4 % on the jargon identification task. Overall, this work provides a comparative framework for evaluating LLMs on highly disciplinary texts and a scalable methodology for NLP practitioners to optimize model performance in specialized technical environments.