

CSE556 Project Proposal: Perspective-Aware Healthcare Answer Summarization

Shamik Sinha
IIIT Delhi

shamik22468@iiitd.ac.in

Shrutya Chawla
IIIT Delhi

shrutya22487@iiitd.ac.in

Vansh Yadav
IIIT Delhi

vansh22559@iiitd.ac.in

Problem Definition

Community Question-Answering (CQA) forums are online platforms where users post queries and receive diverse responses from peers, experts and community members. Such forums provide diverse responses, from factual insights and personalized suggestions to personal experiences.

Context, Motivation & Challenges: In healthcare, the nuances between factual data, personal experiences, and expert advice are critical. Capturing these different perspectives is especially important in helping users make informed decisions. Although summarization systems help navigate this vast resource, traditional methods often generate generic summaries that overlook these distinct perspectives.

Therefore, this project proposes development of **a perspective-aware summarization system that generates contextually rich summaries for different viewpoints**—informational, advisory, causal, experiential, and interrogative.

High-Level Plan

Our project follows a staged approach that mirrors Figure 1. We begin with data preparation, proceed through baseline model fine-tuning and evaluation, and finally iterate with advanced techniques toward a deployable solution.

Phase 1 (Early March to Early April 2025): Finalize the project scope, acquire and analyze the PUMA dataset, benchmark three pretrained models with structured prompts (fine-tuning, evaluations & reproducing results of the source paper).

Phase 2 (Early to Mid April 2025): Iteratively refine the baseline while also exploring more complex architectures to enhance perspective capture.

Phase 3 (Mid to Late April 2025): Finalize refinements, prepare documentation and demonstration materials, and validate the system in a real-world-like setting.

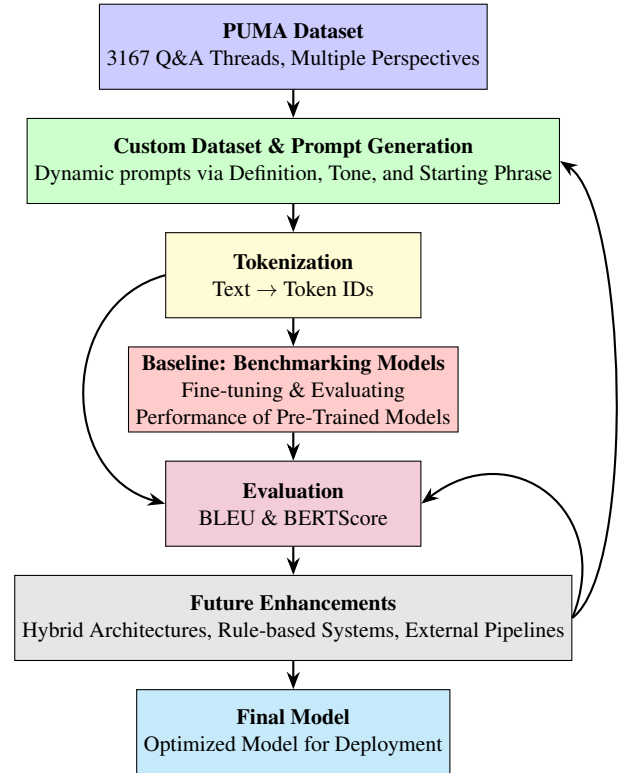


Figure 1: Proposed Workflow.

Approach

Inspired by the baseline methodology detailed in our source paper, we began by **benchmarking & reproducing results** for a selected subset of 3 models to evaluate their performances. In parallel, we incorporate **pretrained LLM embeddings** to enrich text representations & summary quality.

Building on these insights, we plan to explore **complex architectures**—such as hybrid models integrating rule-based methods and external processing modules—to enhance perspective capture.

Furthermore, if time permits, we will conduct **ablation studies** to quantify the contribution of each component. Evaluation will combine **BLEU, BERTScore, and human assessments** to guide our iterative refinements.