Intelligent Health Assistant: A Smart Approach for Digital Healthcare in Bangladesh Using BioXNet

Introduction

- Enables remote access to medical care and patient data.
- FHIR & HAPI FHIR for Digital Records: Standardizes and securely shares electronic health records.
- Medical Assistant for Instant Suggestions: Provides real–time recommendations and guidance to doctors and patients.
- Improved Patient Care & Efficiency: Facilitates faster treatment, informed decision–making, and better overall healthcare quality.
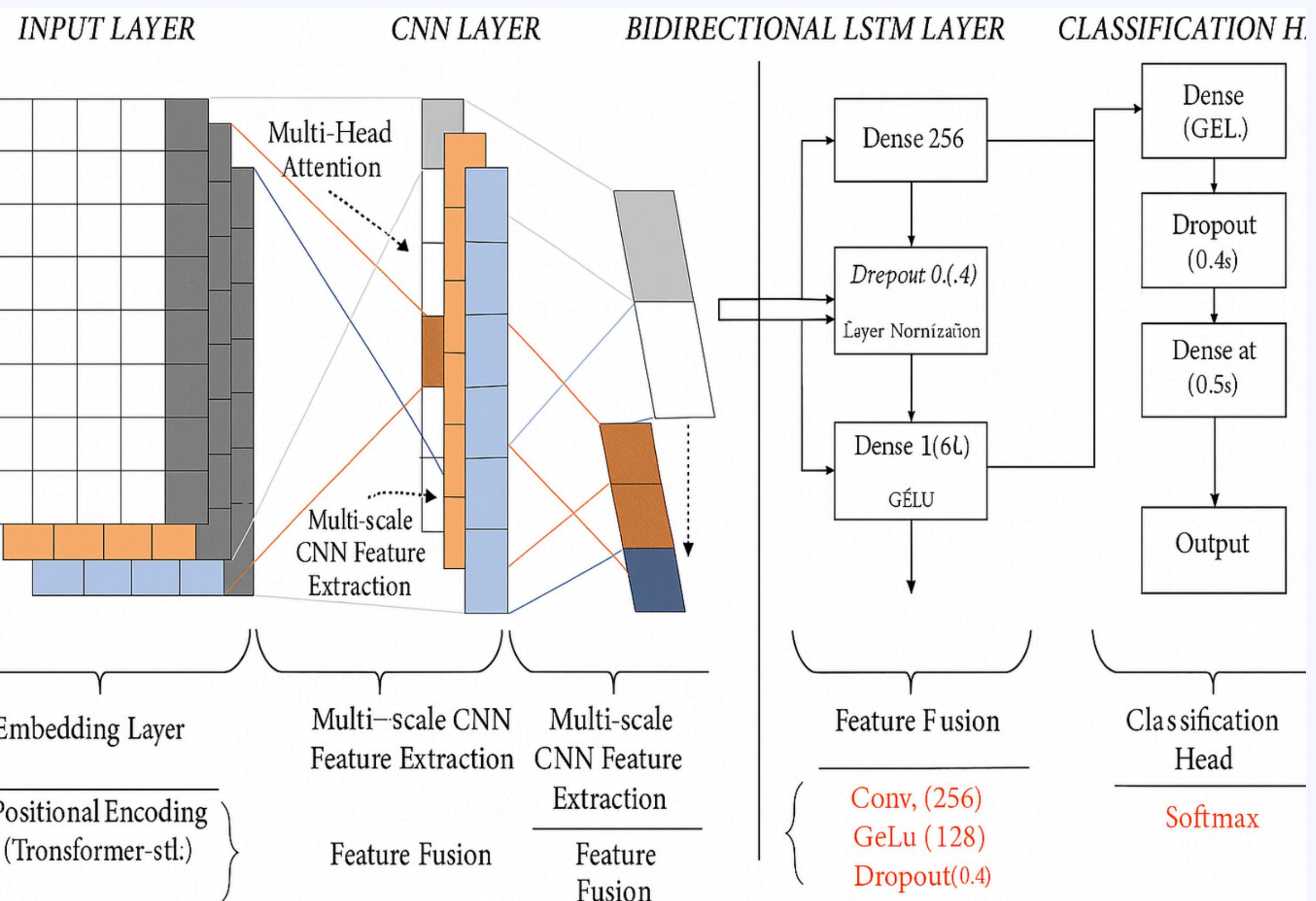
Problem Statement

- Irrational prescribing practices in healthcare.
- Lack of access to previous health records.
- No centralized medical record system
- Healthcare data not standardized.
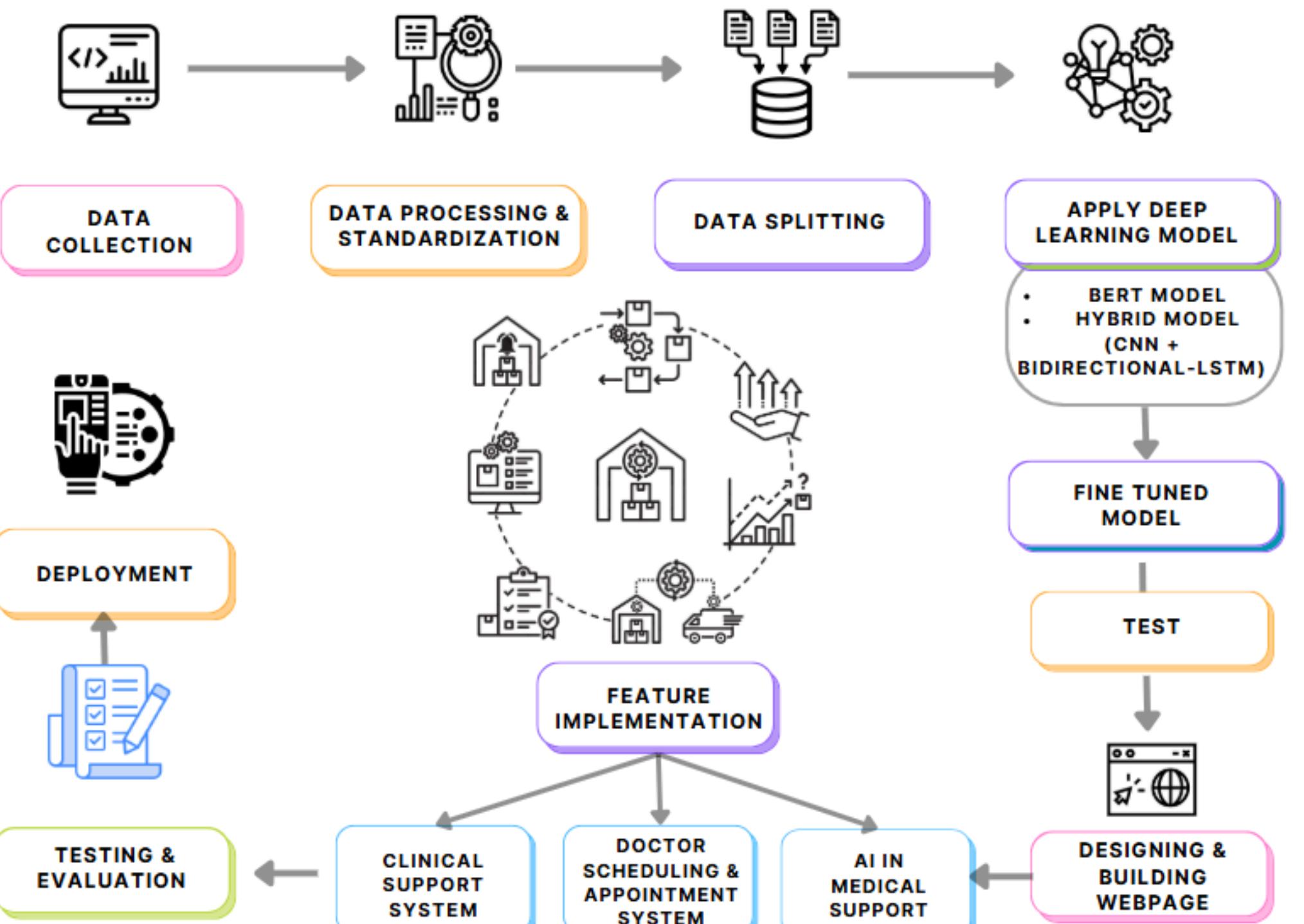
Research Questions

- RQ1. How can an AI chatbot, improve doctor–patient medical support within the challenges of Bangladesh's healthcare system?

- RQ2. How can a doctor access a patients' previous health record?

Architecture

Materials and Method

Results

- Web Based Interface
- Fine Tuned Chatbot Model Variation

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Model Comparison Table:

          Model  Accuracy  Precision   Recall  F1-score
0   ClinicalBERT  0.711382   0.762677  0.711382  0.696949
1  Hybrid CNN-LSTM 0.538618   0.540558  0.538618  0.539147
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Conclusion

- Clinical support systems can improve patient safety and treatment accuracy.
- FHIR standard adoption enables secure, shareable electronic health records.
- Intelligent medicine recommendation systems help doctors with decision–making and reduce errors.
- Combining clinical support + AI models ensures timely, informed, and efficient healthcare delivery.

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