CHAPTER-3
RESEARCH GAPS AND OBJECTIVES

Research Gaps

For efficient detection of cardiovascular disease monitoring, efficient pre-processing and transmission of the ECG data is required. The significance of the proposed framework is outlined below.

- An efficient ECG data compression technique is needed to minimise the storage of medical information/Data requirements and the traffic going to and coming from the communication channels. The transmission of medical information would be secured through scrambling and encryption.

- There is a need to perform the connectivity with the help of different mobile or fixed phones through a database by which specialists can access patients' recent and historical ECG records across hospitals and provide pre-hospital treatment during Golden Hours.

- Increasing security during ECG signal transmission is the goal of this new endeavor. The main problem with maintaining data security and authentication throughout the use of e-health in medical centers after a review of the available options. For encryption and authentication most of the proposed research deals with the various encryption and authentication methods for security purposes.

Objectives of Research

Based on the literature review and research gaps, the following objectives have been developed for this research work:

- To identify the annotated ECG records from globally available databases and pre-process cardiac status monitoring records.
- To develop a decision-making module for analysis of the pre-processed records to detect cardiovascular disorders for cardiac assessment.

- To implement cloud/IoT web server-based service to synchronize the health status for seamless and continuous remote monitoring of cardiac tracking to provide multiple consultations through connectivity from cardiologists using mobile devices.
- To enhance the existing performance parameters like accuracy, sensitivity, and specificity and to validate the proposed research work.