

PREFACE

The problem of computerized ECG analysis was started in the early 50's and still many problems remain to be solved.

The work ECG analysis was started by me and Dr. S.K. Bandyopadhyay, department of Computer Science, Calcutta University, jointly in the early 80's at the Calcutta University. The work was broadly divided into two parts, namely i) ECG feature recognition and extraction and ii) Diagnosis. Both the parts were solved using syntactic pattern recognition techniques. Only six classes of disease including 'normal' were considered for analysis. On the basis of the total work done, Dr. Bandyopadhyay submitted his Ph.D thesis at the Calcutta University in the year 1984, in which my contribution to the work was fully acknowledged. Later, most of the work presented in the thesis was published in different journals (as papers) in which (also) my name appeared as a co-author. In this context, I respectfully remember my teacher Late Prof. A.K. Choudhury, department of Computer Science, Calcutta University, for his helpful guidance, encouragement and criticism.

Though the syntactic approach of the first part of the work was tackled, the second part i.e., diagnosis part was webbed in various problems and illness. The major fact behind it was the rapid non-linear increase of computing time with the number of diseases considered for diagnosis.

In this thesis, an attempt has been made to solve the diagnosis part (chapter 7) with the help of Artificial Intelligence (AI) techniques while using the first part i.e. ECG feature recognition and extraction (chapter 6) with a slight modification. The AI techniques are being applied for medical diagnosis since early 70's and there is a good scope to implement these techniques to ECG analysis as of now. The updated work has been carried out in the department of Computer Science and Application, North Bengal University.

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