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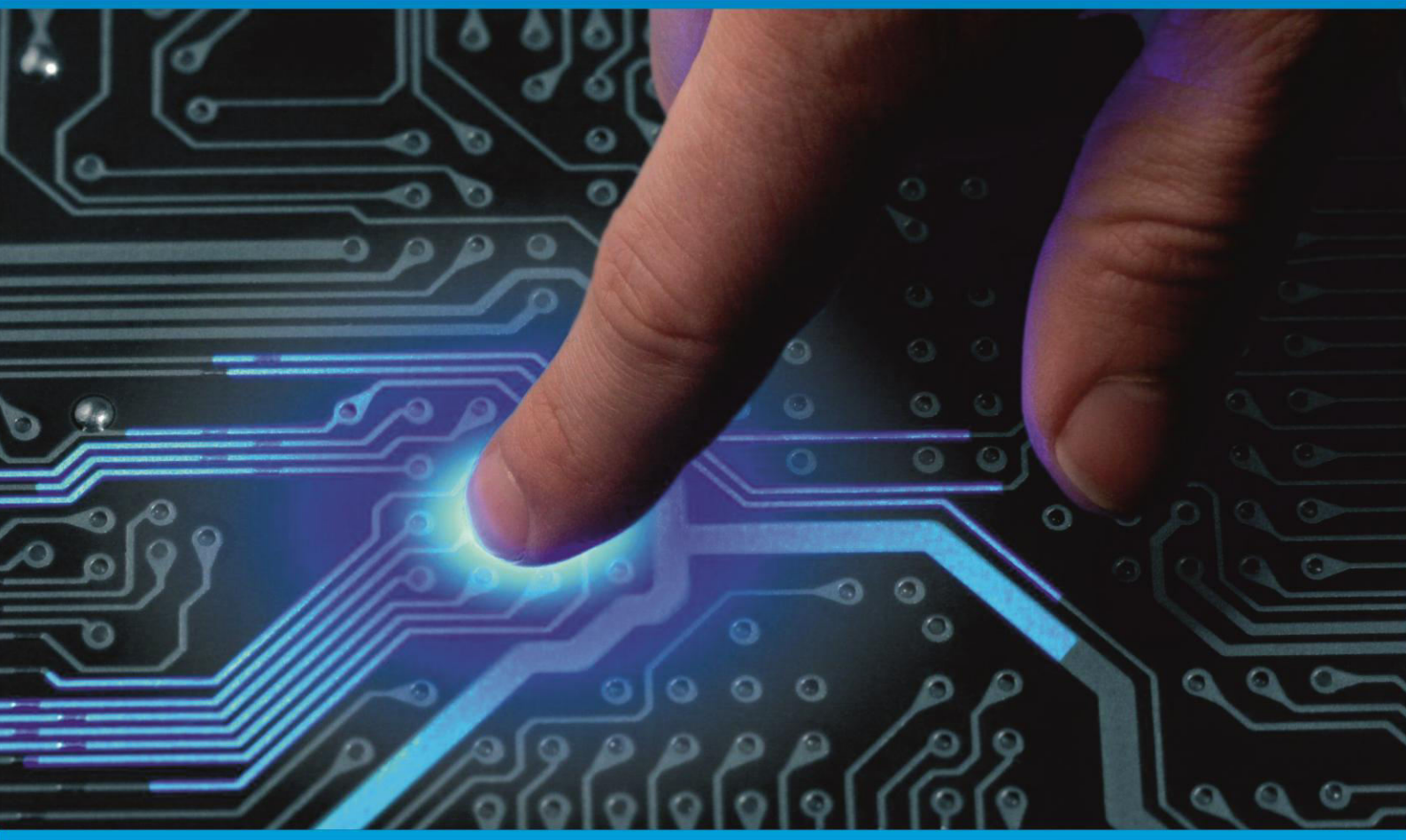

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Structural Pattern Recognition in Time Series Data

Prof.Amrita.A.Shirode[1], Janhavi Padmalkar[2], Tejasvi Pahilwan[3], Mansi Kirloskar[4], Vaishnavi Gaikwad[5]

Dept. of Computer Engineering, All India Shri Shivaji Memorial Society, Pune, India[1, 2, 3, 4, 5]

ABSTRACT: It represents a fundamental aspects that are related tohuman cognition. Nowadays, many algorithms of automatic pattern recognition are applied in many scientific as well as technological fields, those including exploration geosciences, medical diagnosis, business, musicology, and financial sciences .So, to overcome this limitations, a domain-independent approach to structural pattern recognition in time series is needed that is capable of not only extracting morphological features but also performing a classification without relying on or over just any domain related knowledge

KEYWORDS: Structural pattern recognition, classification, feature extraction, time series, Fourier transformation, wavelets, semiconductor fabrication, electrocardiography.

I. INTRODUCTION

Patterns are mainlyspecified in such a way, that(a particular candidate segment is judged as either "having" the prescribed pattern or not). For example, the software could search for segments having 2 down daysthat is, lower closing prices than, previous daysfollowed by 3 up days.

This approach may ,work for simple patterns , but for long or complex patterns, these methods sometimes could be difficult to employ.

This ability of a camera and a computer to discern a particular image in a visually noisy environment is a classic example, from engineering.

The method that is described in this article ,allows a pattern to be specified as another chart-segment, of any length, provided it's shorter than the chart data that has being analysed and provides a statistically, rigorous measure of the degree to which this segment resembles to any other segment of the same length.

This measure is called as the correlation coefficient for time-series.

II. DIGRAM

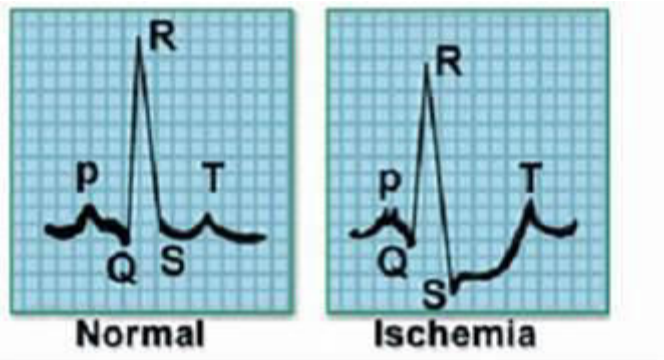

Figure 1
Graph of Normal and Ischemia

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III. RESULTS

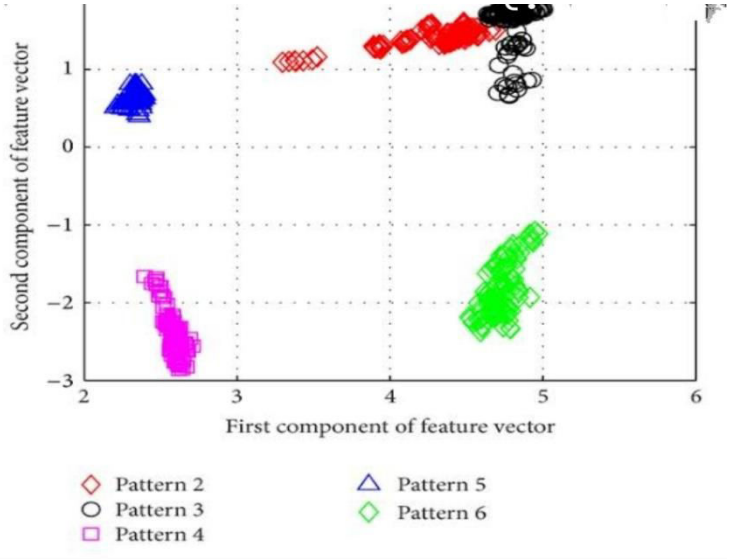

Figure 2
Chart of Pttern Recognition in time series

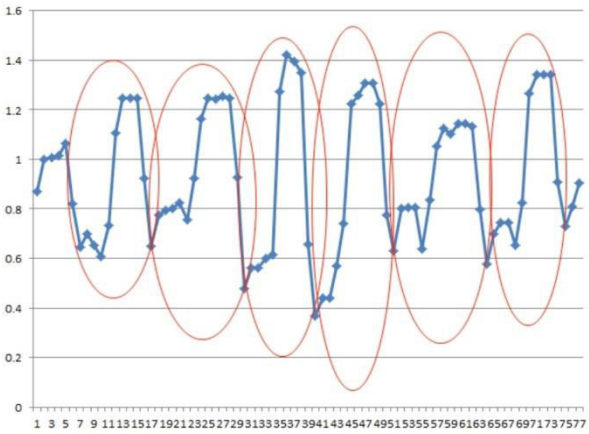

Figure 3
Table of pattern recognition in time series

IV. STUDIES AND FINDINGS

"Structural Method " provides descriptions of items, which may be sometimes useful in their own right. "Structural pattern recognition", also allowto use a powerful ans also a flexible representation formalisms butit at the same time it also offers only a limited repertoire of algorithmic tools that ,are needed to solve classification and also some clustering problemsproblems tho .Pattern recognition approach is used for the discovery, in imaging process and interpretation of temporal patterns in seismic array recordings. Statistical pattern recognition is implemented and is most probably used in different types of seismic analysis models.

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Outcome :

- Explain and compare a variety of pattern classification, structural pattern recognition, and pattern classifier combination techniques.
- It summarize, relate and also helps to analyze, a research in the pattern recognition area verbally and in writing.
- Apply performance evaluation methods for pattern recognition and critique comparisons of techniques made in the research literature.

V. DISCUSSION

Structural pattern Recognition:

Domain: It is a"domain-independent structural pattern recognition " isthe onewhich is capable of acting as a "black box" to extract primitives and even to perform classification without the need for domain related to knowledge . While it may be sometimes possible to achieve more accurate results ,by using domain-dependent techniques. A domain-independent structural pattern recognition system could be advantageous for some preliminary data exploration, particularly in complex, poorly-understood domains, where the (knowledge acquisition would be unacceptably lengthy or infeasible.)A domain-independent structural pattern recognition system may be used to generate a first pass at a set of feature extractors, so thereby ,laying the groundwork for construction of a domain- and application-specific structural pattern recognition .

Types : Types of modulation commonly used by signal processing systems to transmit information via a continuous medium (e.g., an electrical current) include (a) constant, (b) straight, (c) exponential, (d) sinusoidal, (e) triangular, and (f) rectangular.

Features : The structural features extracted by the pattern recognition systems ,are the set of modulation types used in signal processing. The relationship is as follows: -The constant and straight modulation types ,it is approximate straight-line segments, the sinusoidal modulation type approximates parabolas, and the triangular modulation type approximates peaks. Given this mapping, a check appears in the columns are also associated with the help of types of modulation extracted by each system technique. The last rowmostly , indicates the modulation and the types that are in generalized feature extraction could be identified.

Classification : The classifier for a "structural pattern recognition system" is composed of a set of syntactic grammars, also one for each group among which the discrimination is being performed, and a parsar too. The identification generated by the classifier is the group whose associated syntactic grammar successfully parses the primitives extracted from the data. An adjudication scheme ,isalso necessary to resolve the situation ,where there is more than one successful parse. Main difficulty in developing the classifier for a structural pattern recognition system lies in constructing the syntactic grammars. Since the grammars embody ,the precise criteria which tend to differentiate among the groups, they are by their very nature domain- and applicationspecific.

Process : The classifier for a "structural pattern recognition system" is composed of a set of syntactic grammars, one for each group among which the discrimination is being performed . The identificationthen generated by the classifier is the group whose associates syntactic grammar successfully, parses the primitives that are extracted from the data. An "adjudication scheme" is that much only necessary to not only resolve the situation but also where there is more than one successful parse. So,the main difficulty in developing the classifier for a structural pattern recognition system lies in constructing the syntactic grammars.

Structure of Application :

Structural approaches for pattern recognition in (time-series data)are typically employed within well-explored domains where it seems that the necessary domain knowledge is readily available to guide in not only for the the implementation of the description but also for the classification of several tasks. In electrocardiogram diagnosis, for example:- The types of morphologies,(that occur within the waveform and their implications) with respect to cardiac behavior are clearly understood. Consequently, the existing body of knowledge within the domain of electrocardiography has chances that it could serve as a solid foundation for constructing a domainspecific structural pattern recognition for, "electrocardiogram diagnosis". Most domains that involvea time-series data, however, are not nearly as well understood as is electrocardiography. .

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VI. CONCLUSION

Thus, We have worked on Structural Pattern Recognition that
can provide various Information related to Pattern Recognition and its types and
is also beneficial for youngsters and for the beginners based on the techniques that are used for Pattern Recognizing in simplest way.
This can also be worked in various other types related to Pattern Recognition
Such as: Template Matching, Statistical Classification, Syntactic Matching, etc more…

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how to do a proper research and we got to know about a lot of
new concepts while working on this projects which will
benefits us in our future as well.

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