A Cognitive Inference Approach for Developing Medical Diagnostic Expert Systems

International Journal of Computer Applications

Foundation of Computer Science (FCS), NY, USA

Volume 179

Number 21

Year of Publication: 2018

Authors:

Ashish Chandiok, D. K. Chaturvedi

Abstract

Cognitive approaches are nowadays the most popular and widely used means of computing information due to its human-like sensing, comprehending, and action. The cognitive system can handle diverse data, uses modern technologies like natural language processing, machine learning, semantics, and decision support. It can have human interaction behavior with contextual data handling. The decisions are also not made on fixed rules, but human-like weight based judgments. Expert systems (ES’s) are intelligent software tools that use acquired knowledge from experts in a specific domain to offer assistance to its users over a dialog or a query talks conducted between the user and the ES application software. This research work is for implementing a cognitive approach for determining diagnosis decisions providing expert system services. Cognitive strategies frequently denoted as "Human-like intelligent Computing Method" using restricted processing, storing and displaying skills. This paper presents a new diagnosis problem resolving model grounded in the investigation of the relationships among symptoms and illnesses in the form of certainty and severity elements. The article also acquaints with a modified knowledge representation appropriate for a cognitive system with
limited structured data handling capabilities using XML language. The proposed model thrived and tested in the domain of medicals like fever (Flu, Pneumonia, and Cold Fever) using real knowledge base acquired by the mayo clinic. The earned consequences establish the strength and competence of the planned model.

References


Index Terms

Computer Science

Information Systems

Keywords

Cognitive, Expert System tools, Medical Expert Systems, Knowledge Representation, Problem Resolving Modeling