

# Assignment: artificial intelligence and pattern recognition



In the case study, we referred to the systems being developed and used as decision support systems. However, we also identified various artificial intelligence (AI) technologies as well. How can a decision support system incorporate and use AI technologies such as pattern recognition? Tools and techniques can aid in the diagnosis of disease states and assessment of treatment outcomes, so AI can be used by a decision support system as pattern recognition to analyze healthcare data and generate a representation of knowledge and make a decision support.

One of these AI technologies tools is the Artificial Neural Networks which work much like the human brain and have the ability to learn from training data and store knowledge in the network. In the learning phase, it maps relation between inputs and the corresponding expected outputs. Neural networks are frequently used as diagnostics, and therefore it is important to have good generalization ability, that is, good performance in predicting results in response to unseen data.

Neural networks have found the majority of their applications in time-series prediction, signal processing, financial forecasting and especially in health care as pattern recognition. 2. At the Mayo Clinic, patients are given opt in and opt out rights concerning whether or not their information is used in the system that determines the most appropriate therapies given the specific patient profile. So far, 95 percent of the patients have opted to have their information included in the system. (This is the notion of opting in. Why do you believe that five percent of the patients have opted out? Would you opt in or opt out in this case? Please provide your reasoning. t Of2 nature)

greatly impacts the quality of the decision support and analysis. The same <https://assignbuster.com/assignment-artificial-intelligence-and-pattern-recognition/>

could be argued for the predictive analytics system used by the Richmond police in the first case study. Why would some people find it acceptable to use such demographic data in this case (for medical purposes) and not in the first case (for predicting crime, its location, and its timing)? One of the most popular and widely-used application areas for expert systems is that of medicine. What role could an expert system play in helping the Cleveland Clinic identify patients susceptible to abdominal aortic aneurysms? What sort of rules would the expert system include? 5. How might a monitoring-and-surveillance agent be used for patients in a medical environment? How can health care providers take advantage of the capabilities of an information agent to stay abreast of the latest medical trends and treatments?