[**GENETIC ALGORITHMS**](http://intelligence.worldofcomputing.net/machine-learning/genetic-algorithms.html)

[Genetic algorithms](http://portal.acm.org/citation.cfm?id=1268956.1268958) are based on biological evolution. Genetic algorithms can be used to solve a wide variety of problems. Given a problem a genetic algorithm generates a set of possible solutions and evaluates each in order to decide which solutions are fit for reproduction. If a particular solution is more fit then it will have more chances to generate new solutions. Finally we can find a real solution.

Genetic algorithms are so powerful that they can exhibit more efficiency if programmed perfectly. Applications include learning [Robot](http://www.worldofcomputing.net/robotics/introduction-to-robot.html) behavior, molecular structure optimization, automated design of mechatronic systems, and electronic circuit design.

A Genetic Approach Methodology for Knowledge Acquisition for Intelligent Diagnosis is a project done by [CEEP](http://www.engin.umd.umich.edu/HPCEEP/)(Center for Engineering Education and Practice), University of Michigan-Dearborn, to develop diagnosis [knowledge](http://intelligence.worldofcomputing.net/knowledge-representation/what-is-knowledge.html) for robot arm movements. In this project, a [robot](http://www.worldofcomputing.net/robotics/introduction-to-robot.html) was selected for analysis. The wrong arm movements of [robot](http://www.worldofcomputing.net/robotics/introduction-to-robot.html) were observed and collected as failure data. Then the project applied genetic algorithm to extract knowledge from the failure data. The acquisition of knowledge was automatic. The [knowledge](http://intelligence.worldofcomputing.net/knowledge-representation/what-is-knowledge.html) extracted is then stored in the knowledge base to make use of in the intelligent diagnosis system. The [knowledge](http://intelligence.worldofcomputing.net/knowledge-representation/what-is-knowledge.html) so stored is known as diagnosis [knowledge](http://intelligence.worldofcomputing.net/machine-learning/intelligence.worldofcomputing.net/knowledge-representation/what-is-knowledge.html)as it is used to detect what went wrong and to decide the course of action in order to make the [robot](http://www.worldofcomputing.net/robotics/introduction-to-robot.html) perfect.