

Decision tree analysis and its application in artificial intelligence and regression problems

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Artificial intelligence increases the ability for healthcare professionals to better understand the day-to-day patterns and needs of the people they care for, and with that understanding they can provide better feedback, guidance, and support for staying healthy. Decision tree analysis is very important approaches for the artificial intelligence. A decision tree is one of the most used, practical approaches for supervised learning to solve both Regression and Classification tasks. It is a tree-structured classifier with types of nodes and most widely used in machine learning algorithms. It is used for regression problems where we try to predict outcomes with possible answers such as the factors responsible for a disease or mortality. A Decision tree is the denotative representation of a decision-making process in artificial intelligence, used to arrive at conclusions based on the data available from decisions made in the past. Decision tree analysis presents four methods, including Classification and Regression Tree (CART) and chi-square automatic interaction detection (CHAID). In the present discussion, the objective is to demonstrate the application of Decision tree analysis and how is it useful in artificial intelligence, and its advantages and disadvantages over usual regression analysis.

Keywords: Artificial intelligence, supervised learning, Decision tree analysis, CART, CHAID.

Biography

Dr. Prabhaker Mishra (DOB: January 1979), presently working as Additional Professor, at Department of Biostatistics & Health Informatics, SGPGIMS, Lucknow-India since July 2014. He had completed his PhD in Statistics on the topic "Statistical Study of Human vulnerability and Risk. Assessment of Natural Hazards in Orissa" as Senior research fellowship (ICMR) in 2010. He had worked as Assistant Professor (Biostatistics) in the Department of Community Medicine, in medical colleges during 2011 to 2014. More than 75 MD/DM/MCh/DNB and 6 PhD students are either completed or pursuing their thesis under his supervision/ co-supervision. He had published 174 research papers in various national / international journals. His expertise area is applied and medical statistics.

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