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Campus TALENT

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LIST OF PROJECT

About Campus Talent 3.0:

Campus Talent 3.0 is a National Level Innovation Symposium organized by Project Contest Innovations LLP., as a part IDEA (Innovation Development and Expert Assessment) Program as a first step from ideation to innovation. The purpose of this IDEA programs is to nurture student innovation that are really promising to become a patentable innovation and startups. During the event, students present their innovative solutions to technical mentors from industries, incubators and research centres. All the innovations will be given feedback for enhancement and few will be awarded with cash prizes and incubation support through PCI Partnered Incubators.

Team ID : PCICT3ID02

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Title:	**IDENTIFYING BIOMARKERS FROM THE DEMENTIA GENE EXPRESSION DATASET USING ENSEMBLE LEARNING AND METAHEURISTIC ALGORITHM**
Abstract:	This research proposed a method that combines ensemble learning with the meta-heuristic algorithm to identify biomarkers from a dementia gene expression dataset. Dementia is a brain disorder. It affects the brain, causing memory loss, confusion, and difficulty with thinking. It is common in older adults and can be caused by diseases like alzheimer's, but it's not a normal part of aging. It can be challenging to precisely identify important biomarkers using traditional methods because of gene expression data's high dimensionality. This research addresses these issues by combining the advantages of ensemble learning and the meta-heuristic algorithm (gwo) to improve feature selection and performance. This research used machine learning algorithms k-nearest neighbors (knn), support vector machine (svm), and naive bayes (nb) in ensemble learning. Here, grey wolf optimizer (gwo) effectively identifies the best features by exploring the search space. The gwo combined with the svm achieved the highest accuracy at 92.8%, followed by gwo with knn at 85.3% and gwo with nb at 87.3%. This approach effectively identified biomarkers from disease datasets and obtained biomarkers are validated by standard bioinformatics tools. Various disease-causing genes related to dementia are identified from obtained biomarkers. It could be useful in early disease detection.
Key Words:	Meta-heuristic, gene expression , classifier, ensemble learning, dementia