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Classification of Malignant Mesothelioma Cancer Using Support Vector Machine

To control the invasive nature of cancer, researchers have prioritized to identify the disease in its premature stage. Environmental issues, life style and genetic heritage are the main causes of cancer. Malignant Mesothelioma (MM) is one of the fast growing neoplasm tumor, that originates due to mesothelium cells in the various parts of the human body, and directly affects the pleura. The main causes of MM are asbestos exposure, exposure to the high doses of radiation to the chest or abdomen, genetics disposition and the infection of simian virus 40. The main challenge that arises in safeguarding against the tumor is to detect the tumor, in its early stages, of being malignant or benign. For that purpose, an accurate classification technique is indispensable to diagnose the disease and properly cure the disease. Artificial intelligence (AI) has revolutionized pattern recognition and classification in recent decades, and medical field is one of its paramount applications. Support Vector Machine (SVM) is the proposed method for the classification of MM. In this method the SVM is trained on features extracted in the form of symptom of MM cancer, SVM is used as binary classifier, using linear kernel to classify the tumor as malignant or benign based on extracted features. SVM shows the best results with the accuracy of 98%, which transcends the Probabilistic Neural Network (PNN) classification method.

Authors: Mr KHAN, Shah Nawaz (Department of Mechatronics Engineering, UET Peshawar); SIKANDER, Gulbadan (Department of Mechatronics Engineering, UET Peshawar); Dr ANWAR, Shahzad (Department of Mechatronics Engineering, UET Peshawar); Prof. KHAN, Muhammad Tahir

Presenter: Mr KHAN, Shah Nawaz (Department of Mechatronics Engineering, UET Peshawar)

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