Neural Networks and Cancer Detection

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Cancer is one of the leading causes of death every year throughout the world, lung cancer and breast cancer are the most prevalent. The purpose of the project Neural Networks and Cancer is to provide an artificial intelligence(AI) that is able to detect different types of cancer with a less than 2% margin of error. Any help with detection could minimize unintentional fatalities or improper diagnosis, false positives or false negatives and would likely maximize correct diagnosis and diagnosis efficiency. The AI would not replace a technician as it would provide a failsafe for misdiagnosis. Software aided diagnostics would be a leap for machine learning. The AI is made up of multiple functioning layers which replicate the brain and provide the deep learning aspect. The neural network is then supplied with a substantial amount of CT scans to "learn" from. First, a filter must be applied to the image the filter to create a feature map. The neural network The neural network used several layers, an input, multiple hidden layers, and an output layer with the assistance of Python, TensorFlow and, Keras which are open sourced tools. After the AI is trained from the scans, the AI is tested on 100 randomized scans. This process continues until it reaches proficiency. In the first stages of testing the neural network on average worked at less than a 2% margin of error when shown stage 1-3 CT cancer scans and 98.6% average was found.

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