

# *Liver Disorder using Machine Learning*

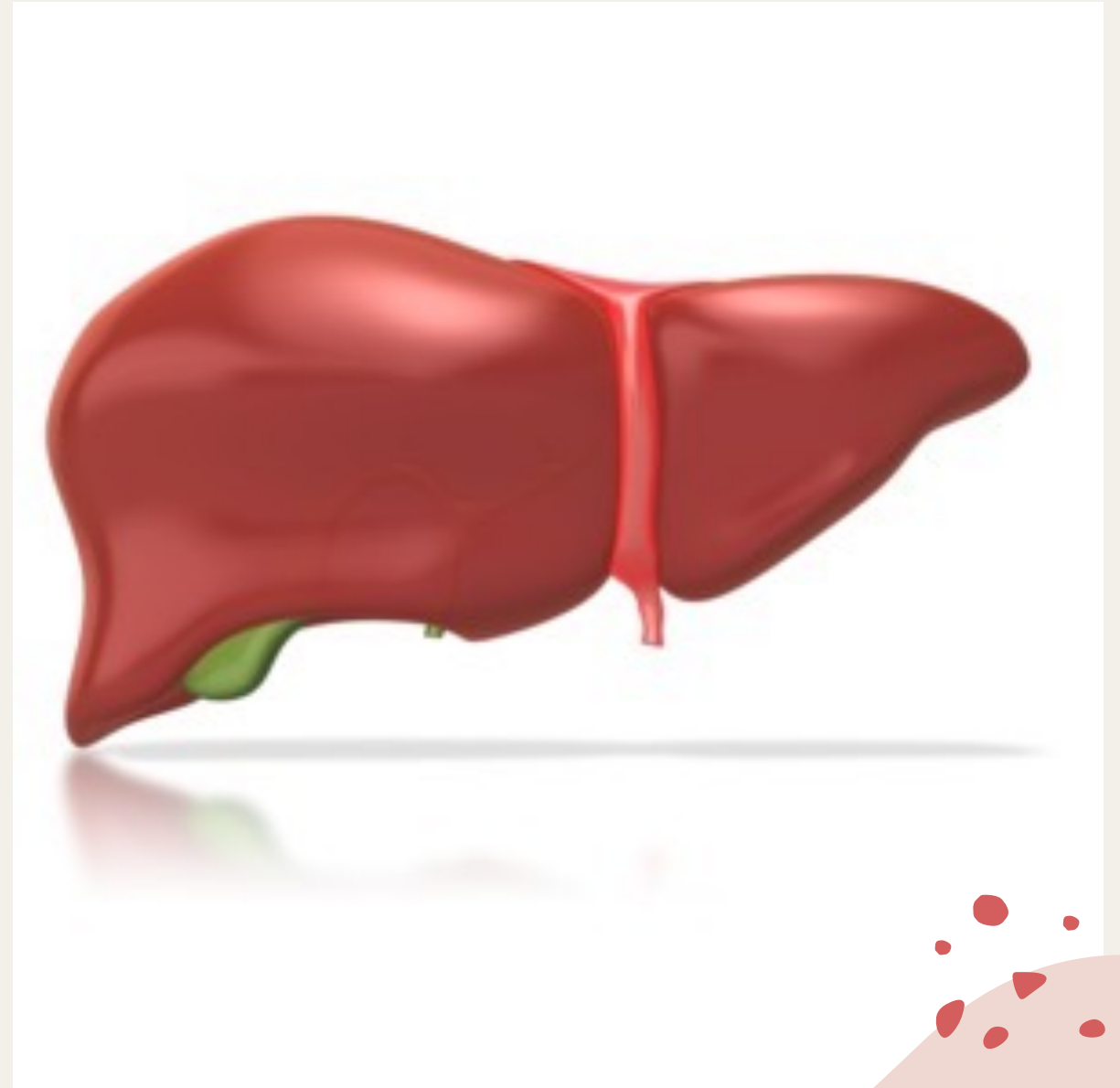
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Team members:

Perumalla Litesh

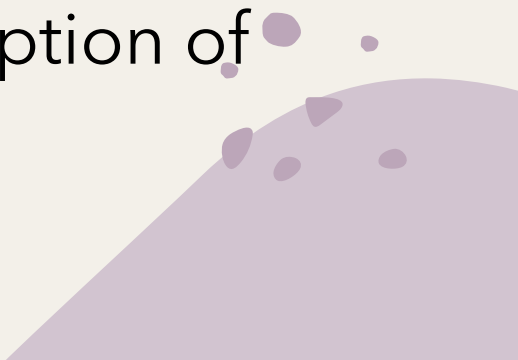
Satish Gudapati

Akash Chittimalla



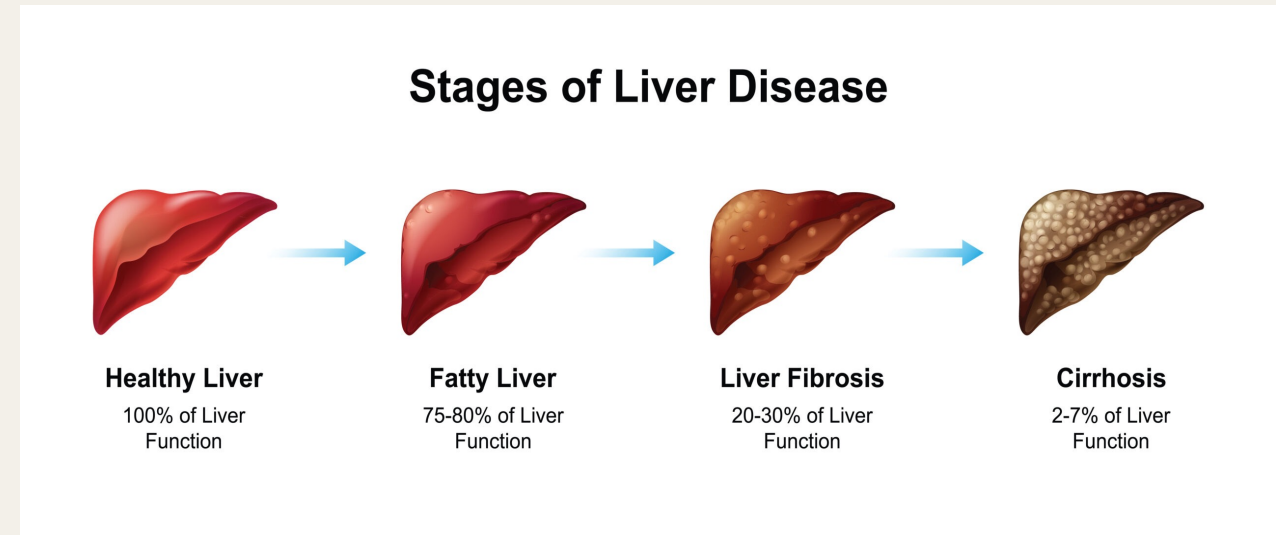
# *Introduction*

## Liver Function and Importance:

- **Detoxification:** Breakdown of harmful substances.
  - **Metabolism:** Conversion of nutrients from food.
  - **Protein Synthesis:** Responsible for Synthesis of various Proteins
  - **Storage:** Stores important substances like glycogen, vitamins.
  - **Bile Production:** A digestive fluid helps in breakdown and absorption of fats.
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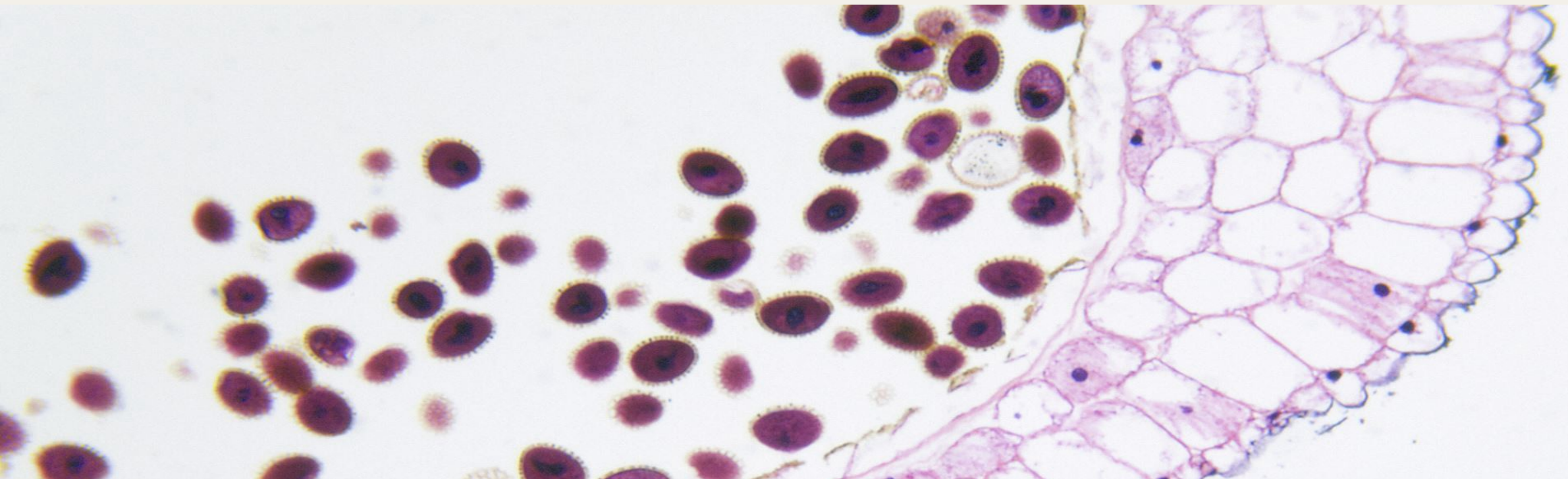
# *Liver Disorders*

- Hepatitis: Inflammation of liver
- Cirrhosis: Scarring of the liver tissue.
- Fatty Liver diseases: Accumulation of fat in the liver.
- Liver Cancer: Uncontrolled growth of cells in the liver.
- Hemochromatosis: Excessive iron accumulation in the liver.
- Autoimmune Hepatitis: Attack of Immune system on liver cells.



# *Existing Methodology*

- Traditional Diagnostic Methods:
  1. Blood Tests: Liver Enzyme Tests and Bilirubin tests.
  2. Image Detailing: CT scans, MRI scans
  3. Biopsy: Examining a liver tissue under a microscope.



# *Existing Methodologies in Machine Learning Models*

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AI for the Management of Hepatitis, Steatosis, and Liver Cirrhosis: model for classifying the stages of chronic hepatitis B.

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AI Models for CT and MRI : CNN based model for diagnosis of Malignant tumors.

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Non-alcoholic steatohepatitis (NASH) from non-alcoholic fatty liver disease (NAFLD).

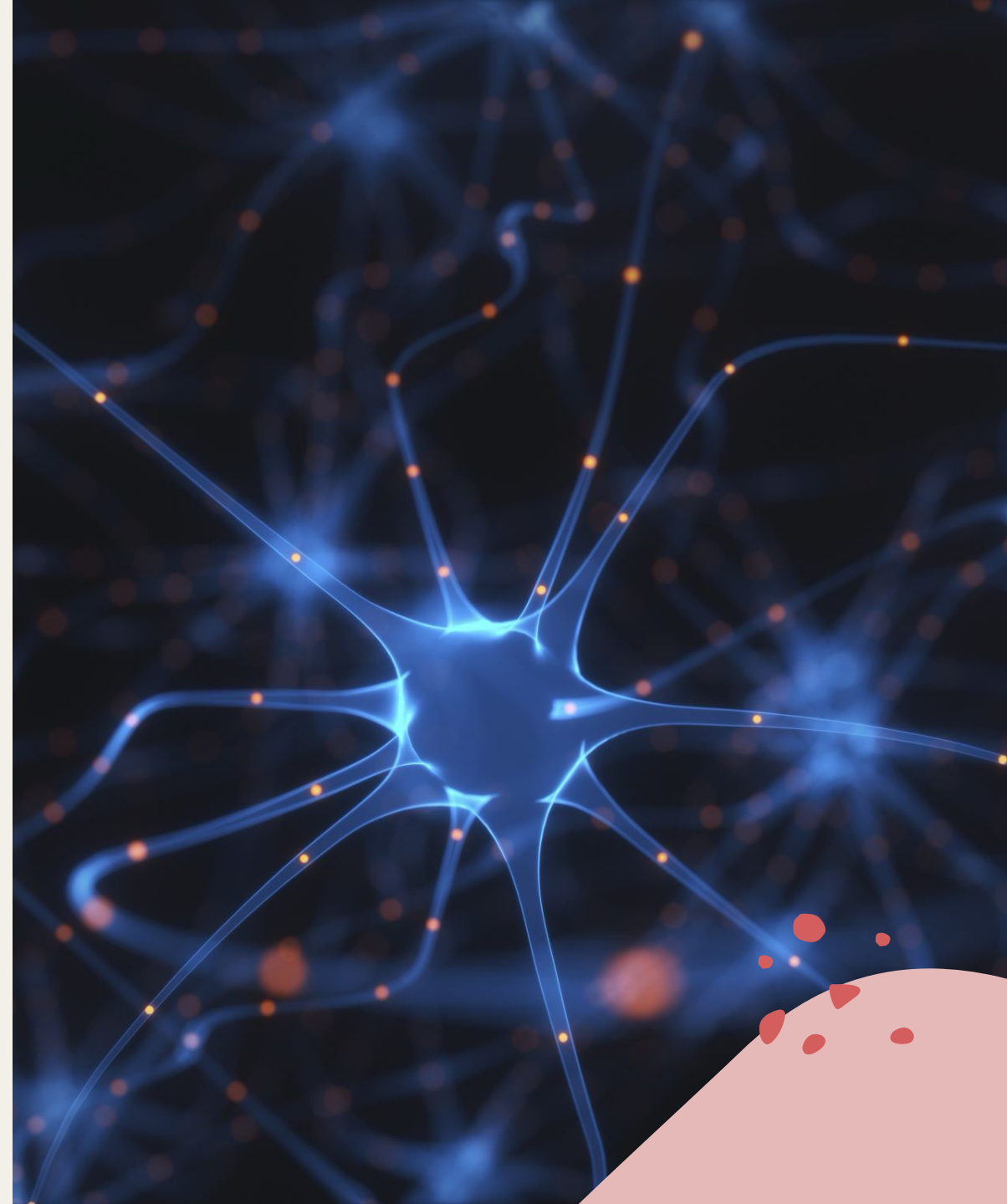
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AI Models for Liver Tumors: a model with 96% accuracy for the classification of cysts, hemangiomas, and malignant tumors.

# *Project Proposal*

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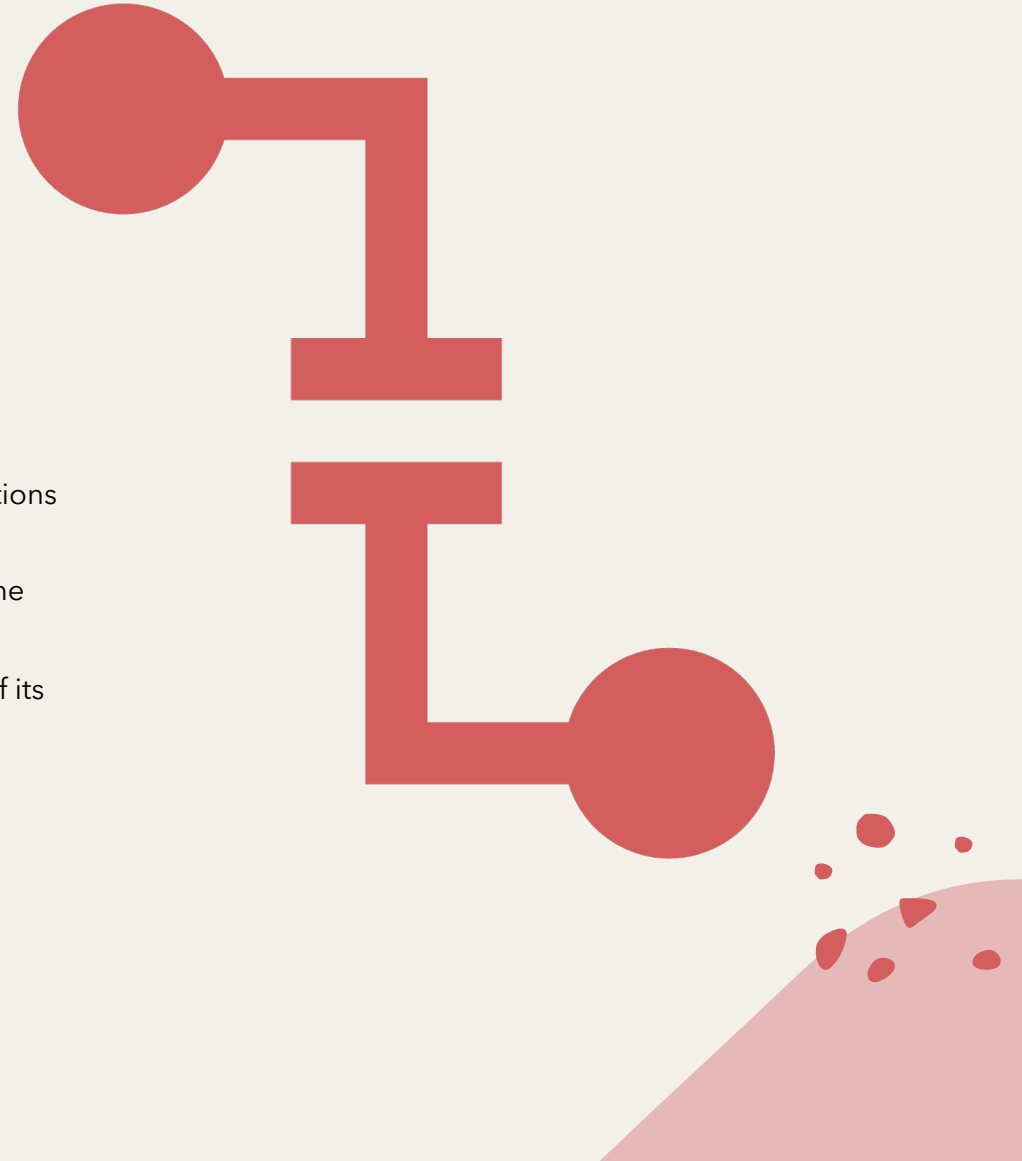
- **Algorithm:** MLP (Multi Layer Perceptron)
- It is a type of Artificial Neural Network.
- It consists of a single node or neuron that takes a row of data as input and predicts a class label.



# *Model Architecture*

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- Components of the model
- Input Layer: Neurons in the input layer represent the features of the input data. Each neuron corresponds to a specific feature.
- Hidden Layer: Neurons in the hidden layers process the input data through weighted connections and apply activation functions.
- Weights and Bias: Each connection between neurons has an associated weight, representing the strength of the connection.
- Activation Function: Each neuron typically applies an activation function to the weighted sum of its inputs.
- Output Layer: Neurons in the output layer provide the final predictions of the model.
- Training: Algorithm Adjusts the weight and bias.





# *Project Outcomes*

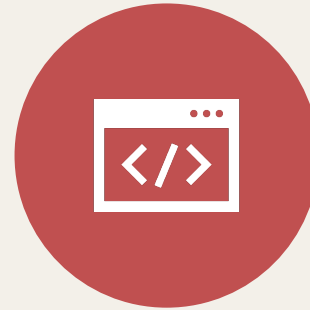
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IMPROVED  
ACCURACY.



REDUCED  
DIAGNOSIS TIME.



SCALABILITY.



ENHANCED  
UNDERSTANDING.



# References

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Dataset Source



MLP Algorithm



AI Models on Liver Disorders



Types of Liver Disorders