



# AI-DOCHELPER

GUIDE :

PROF. AEJAZ KHAN

GROUP NO :

43

GROUP MEMBERS :

VIKRANT SHAH

SURBHI SINGH

ANUJA KOTHAVALA

# INTRODUCTION

- For many years, many people have died due to undetected diseases. Early detection of these diseases at the micro classification stage can be useful for providing proper treatment to the patients at the early stage and could have saved a lot of lives. A lot of research is being done to detect these diseases at the earliest.

# PROBLEM STATEMENT

- AI-DocHelper, an artificial intelligence-based system.
- The model that gives the best accuracy and minimum loss.
- The output of Final result will be a prediction.

# REQUIREMENTS

## Hardware Requirements :

- Processor : Intel Core i3 / Pentium
- RAM : 4 GB Minimum
- Hard Disk Space : 30 GB Minimum

# REQUIREMENTS

## Software Requirements :

- Operating System : Windows / MacOS / Linux
- Browser : Google Chrome / Mozilla Firefox
- Software Libraries : Python 3.x, Tensorflow 2.0, Annaconda, Jupyter Notebook, Numpy, Pandas, Scikit-learn, Flask/Django

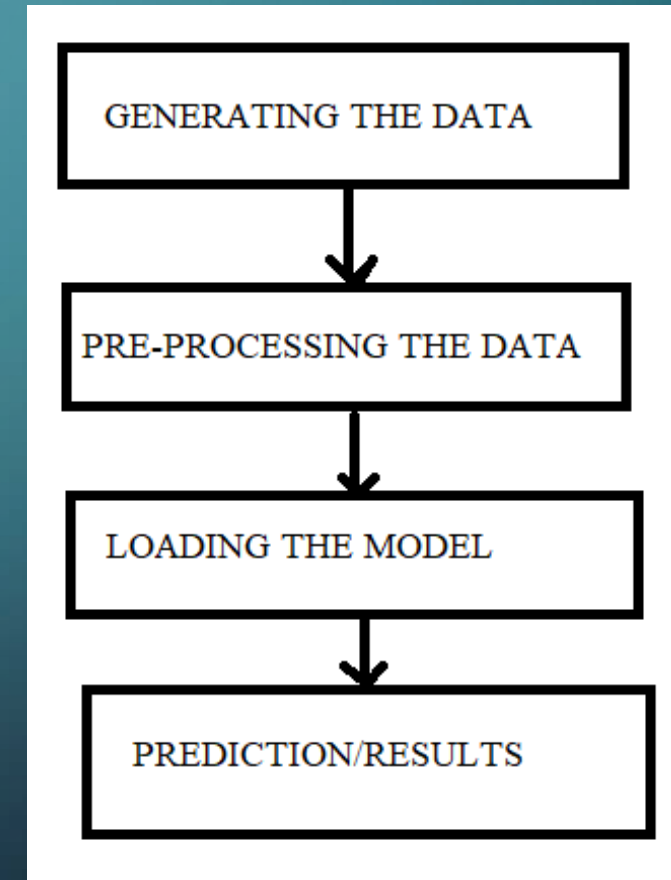
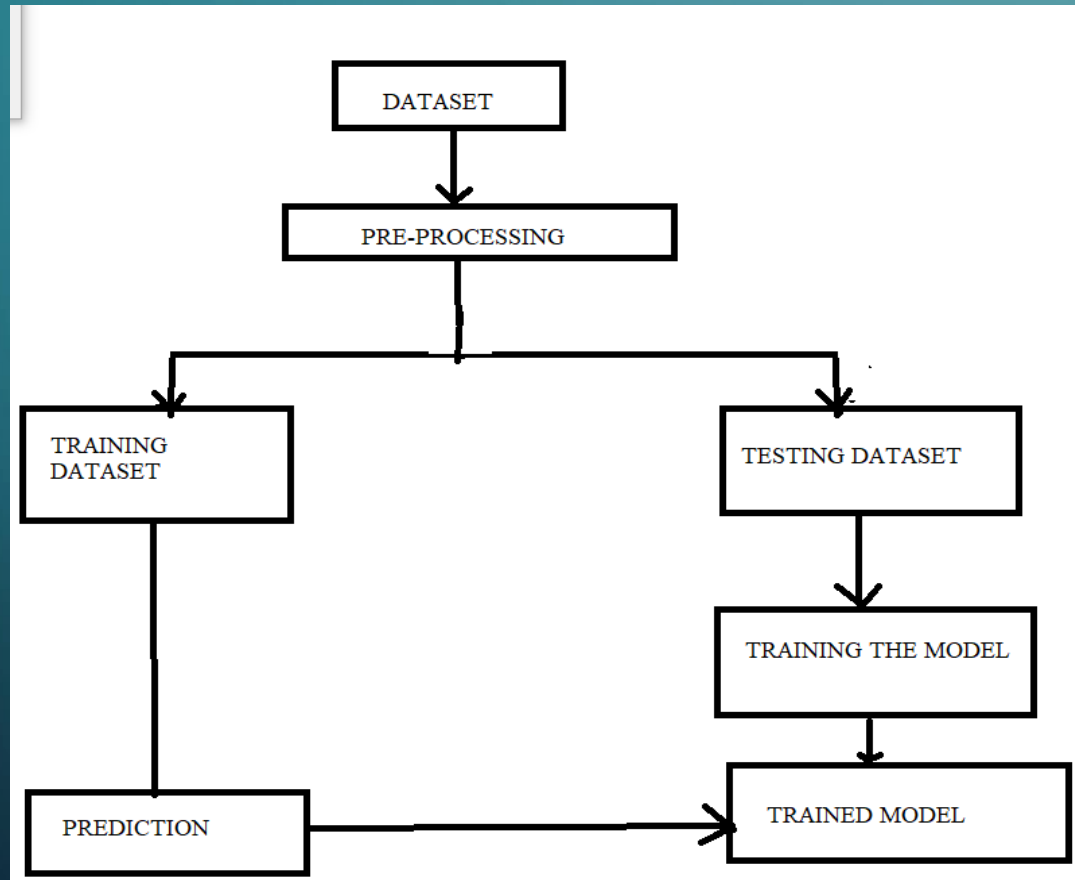
# FEATURES

- Early detection of disease
- User friendly GUI
- Precise results
- User Data Store

# WHY AI-DOCHelper ?

- Existing system available are able to detect only one or two diseases.
- Everything in the future will be automated.

# PROPOSED SYSTEM : WORKFLOW



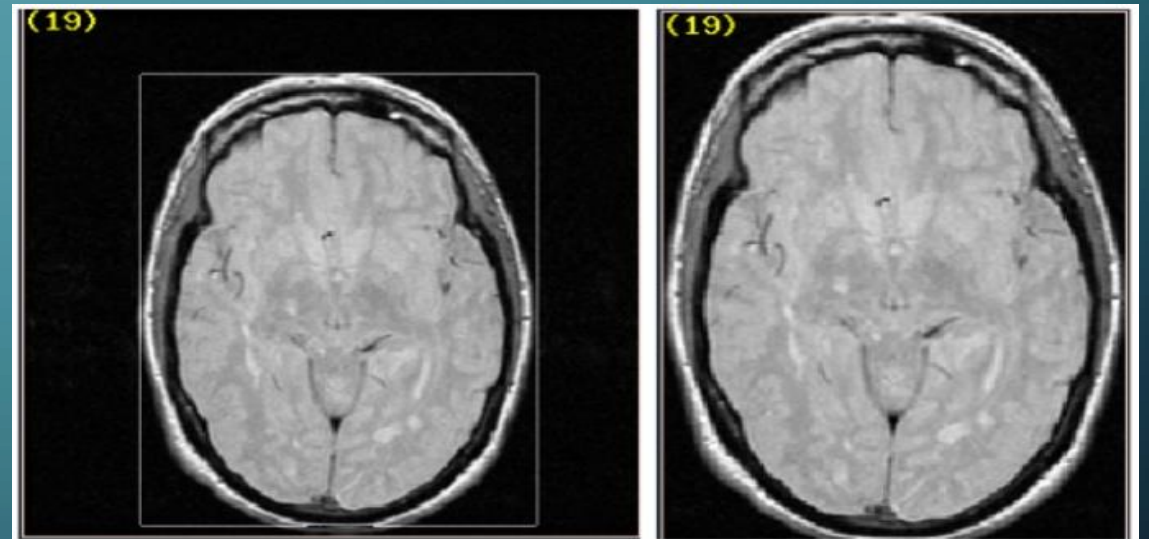


# PRE-PROCESSING THE TEXTUAL DATASET

- Dropping the unnecessary fields.
- Replacing all the missing fields with a value.
- Scaling the data
- Converting categorical data to numeric data.

# PRE-PROCESSING THE IMAGE DATASET

- Dropping all the blur images.
- Region of Interest
- Filtering & Smoothing an image.
- Getting the Region of Interest / Volume of Interest.



# COMPARATIVE STUDY FOR TEXTUAL DATASET

- Pima Indian Diabetes Database / Dataset
- Originally from the National Institute of Diabetes and Kidney Diseases
- Published by UCI Machine Learning
- Dataset Fields : Pregnancies, Glucose BloodPressure), SkinThickness, Insulin, BMI, DiabetesPedigreeFunction, Age, Outcome

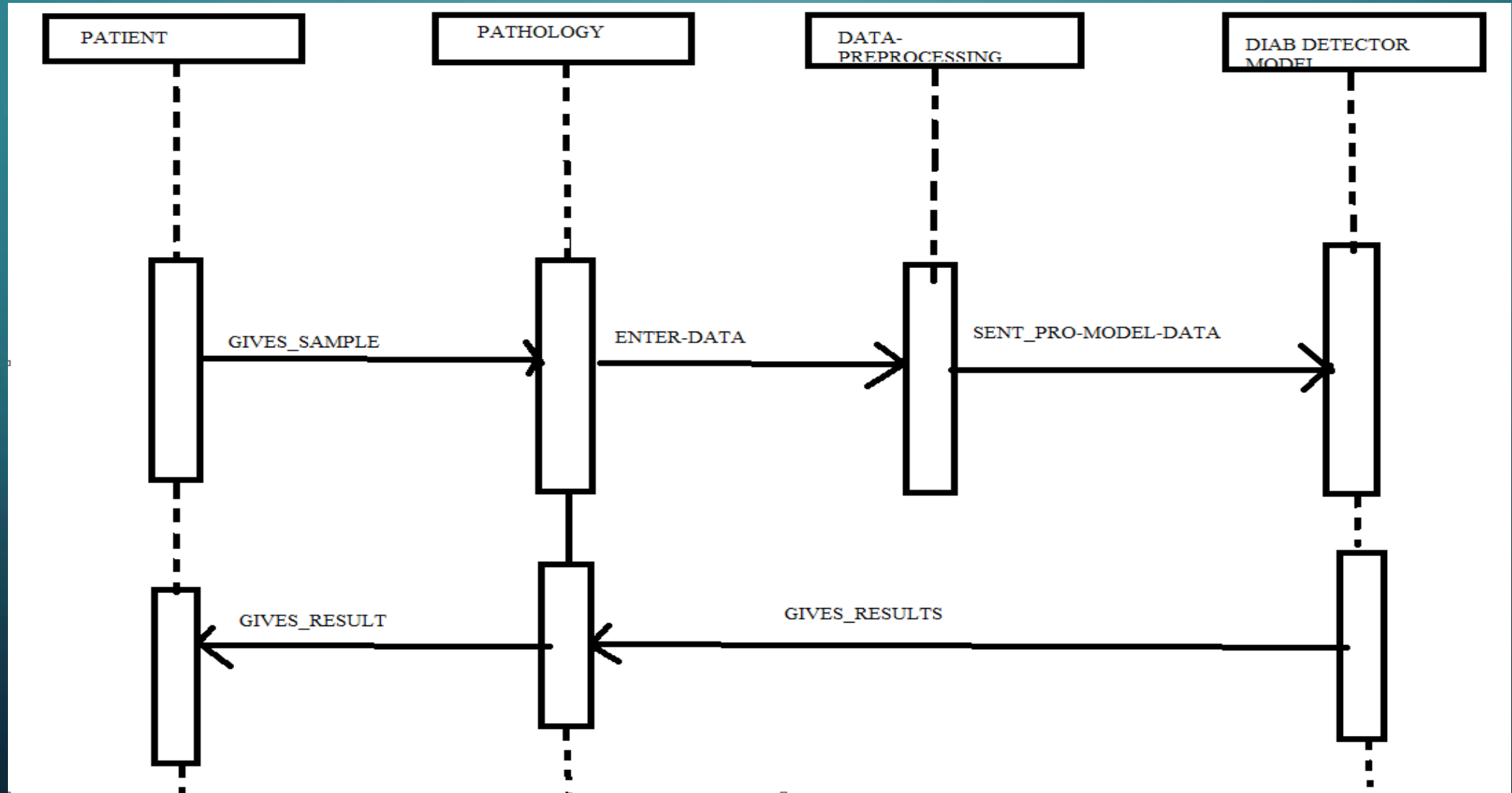
# COMPARATIVE STUDY FOR TEXTUAL DATASET

MODEL	ACCURACY
Logistic Regression	0.8246753246753247
K-Nearest Neighbour Classifier	0.7987012987012987
Support Vector Classifier	0.8246753246753247
Naïve Bayes	0.7922077922077922
Decision Tree Classifier	0.7077922077922078
Random Forest Classifier	0.8246753246753247
Artificial Neural Network	0.7077922224998474

# STUDY FOR IMAGE DATASET

- Convolutional Neural Network (CNN) will be used.
- Datasets Acquired : Skin Cancer Detection, Breast Cancer Detection, Parkinson Disease, and many more

# FLOW OF EVENTS

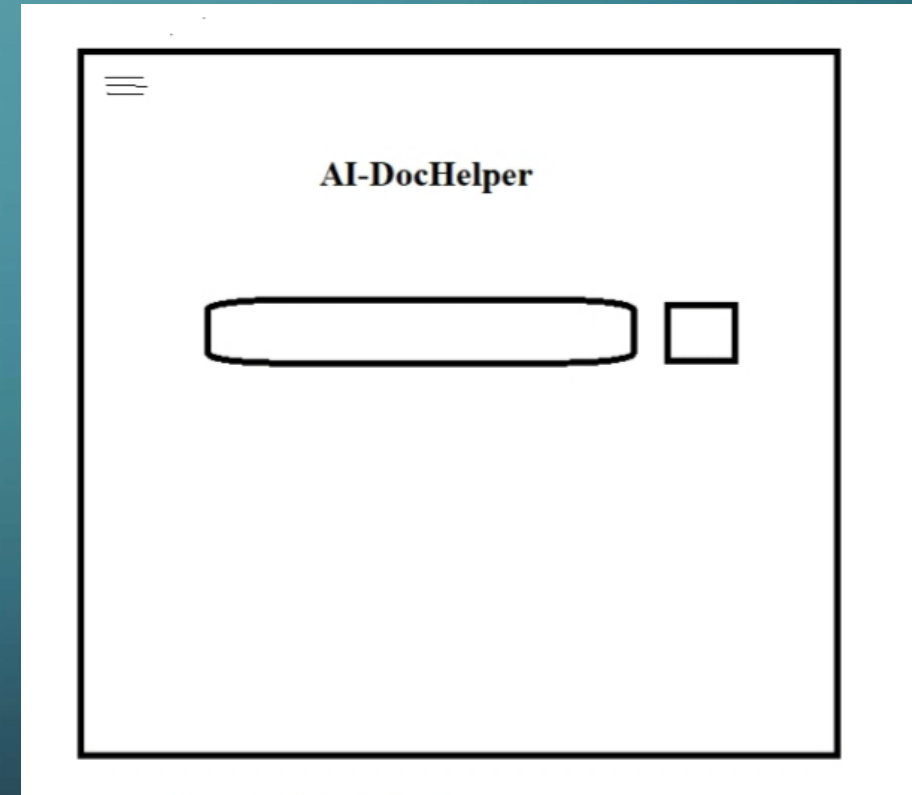


# GUI DESIGN

- Web-Based System
- Tools suitable for design.
- Advantage over other tools.

# GUI DESIGN : DEFAULT / FIRST PAGE

- Authentication
- Search for particular disease



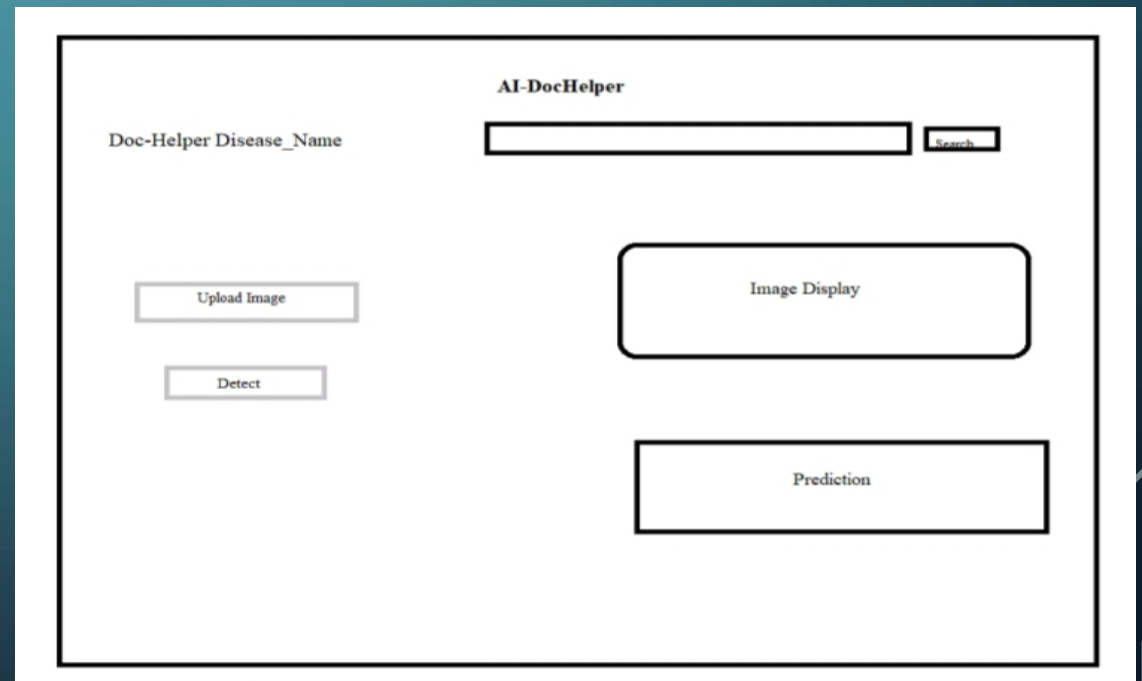
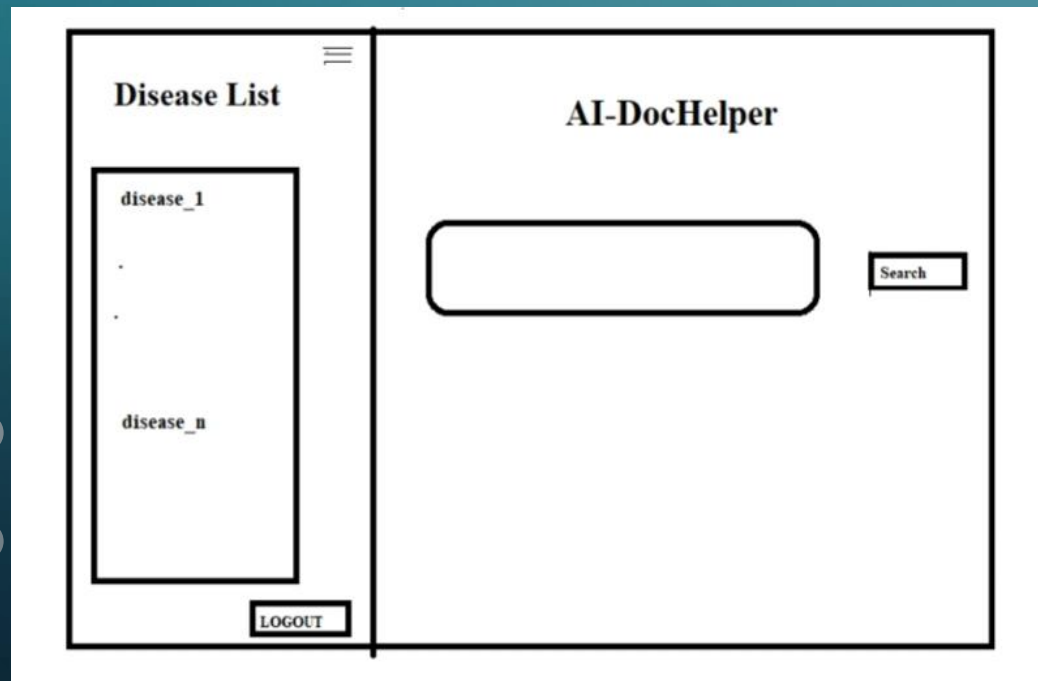


# GUI DESIGN : ON NAVIGATING

User are free to select particular disease from different options.

On selecting, Image/text data is required for result.

Once data is entered ,result is predicted on same page.



# REFERENCES

- 1) R. Sangeetha and K. S. Murthy, "A novel approach for detection of breast cancer at an early stage using digital image processing techniques," *2017 International Conference on Inventive Systems and Control (ICISC)*, Coimbatore, 2017, pp. 1-4, doi: 10.1109/ICISC.2017.8068625.
- 2) Y. Lu, J. Li, Y. Su and A. Liu, "A Review of Breast Cancer Detection in Medical Images," *2018 IEEE Visual Communications and Image Processing (VCIP)*, Taichung, Taiwan, 2018, pp. 1-4, doi: 10.1109/VCIP.2018.8698732.
- 3) S. Nayak, S. Kumar and M. Jangid, "Malaria Detection Using Multiple Deep Learning Approaches," *2019 2nd International Conference on Intelligent Communication and Computational Techniques (ICCT)*, Jaipur, India, 2019, pp. 292-297, doi: 10.1109/ICCT46177.2019.8969046.
- 4) X. Zeng, H. Chen, Y. Luo and W. Ye, "Automated Diabetic Retinopathy Detection Based on Binocular Siamese-Like Convolutional Neural Network," in *IEEE Access*, vol. 7, pp. 30744-30753, 2019, doi: 10.1109/ACCESS.2019.2903171.
- 5) T. J. Wroge, Y. Özkanca, C. Demiroglu, D. Si, D. C. Atkins and R. H. Ghomi, "Parkinson's Disease Diagnosis Using Machine Learning and Voice," *2018 IEEE Signal Processing in Medicine and Biology Symposium (SPMB)*, Philadelphia, PA, 2018, pp. 1-7, doi: 10.1109/SPMB.2018.8615607.
- 6) Y. Liu et al., "Detecting Diseases by Human-Physiological-Parameter-Based Deep Learning," in *IEEE Access*, vol. 7, pp. 22002-22010, 2019, doi: 10.1109/ACCESS.2019.2893877.
- 7) A. Shrivastava, I. Jaggi, S. Gupta and D. Gupta, "Handwritten Digit Recognition Using Machine Learning: A Review," *2019 2nd International Conference on Power Energy, Environment and Intelligent Control (PEEIC)*, Greater Noida, India, 2019, pp. 322-326, doi: 10.1109/PEEIC47157.2019.8976601.

The background is a teal-to-dark-blue gradient. In the corners, there are white line-art illustrations of circuit boards or neural networks, with lines and small circles representing nodes.

THANK YOU