



DIABETIC

RETINOPATHY

DETECTION MODEL

USING DEEP CNN NETWORK

TEAM MEMBERS

The background of the slide features a silhouette of five people standing on a dark, uneven ground, each holding up a large, black letter to form the word 'TEAM'. The letters are 'T', 'E', 'A', 'M', and 'M'. The scene is set against a vibrant sunset sky with orange, yellow, and pink hues. The silhouettes of the people are dark and solid, contrasting with the bright background.

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What is diabetic retinopathy ?

Introduction:

The main aim of the project is to develop an model for the early detection of diabetic retinopathy using deep learning algorithms. We are implement a transfer-learning based approach using a deep Convolutional Neural Network (CNN).

Training

Testing

Validation

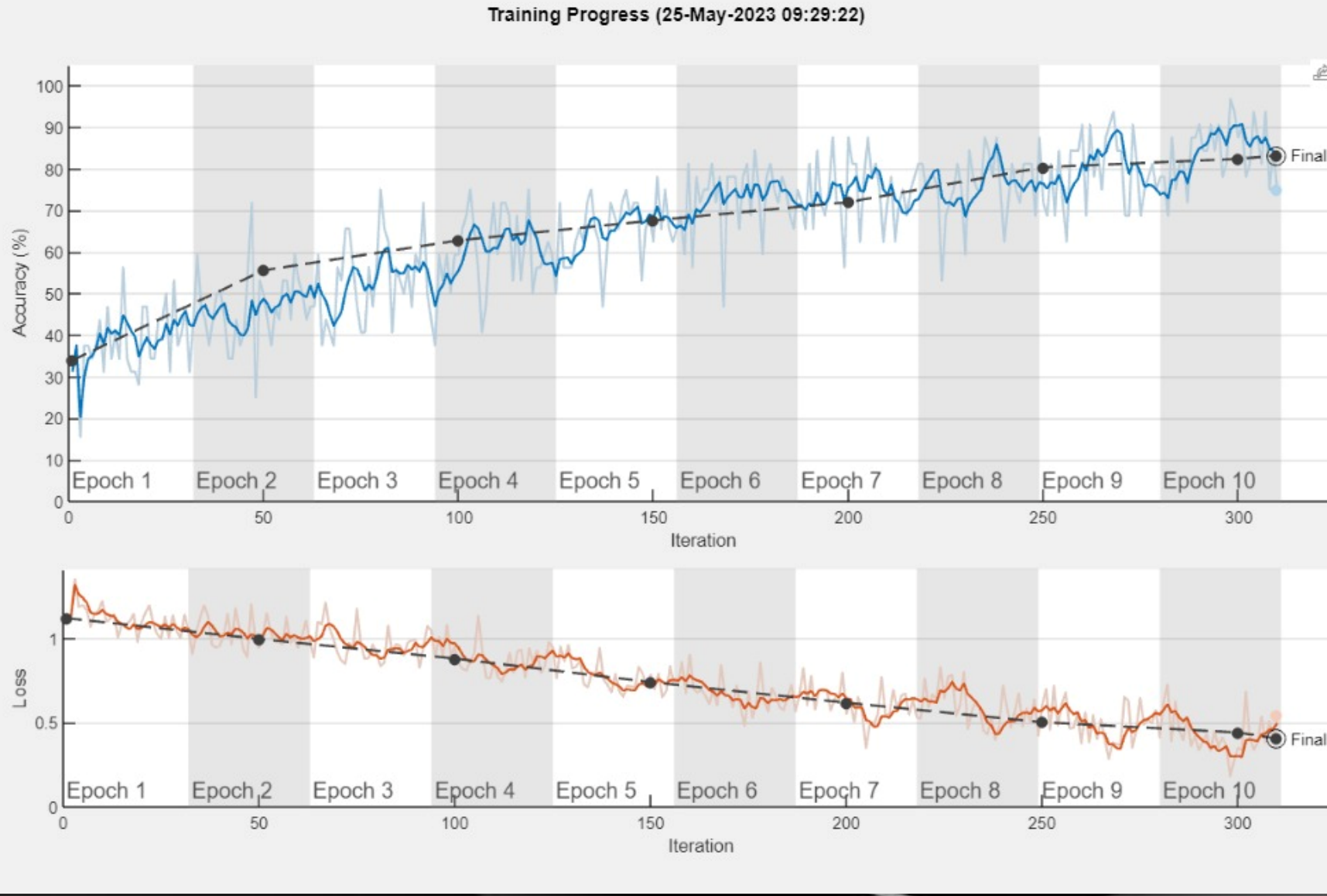
Image augmentation

- ❑ Image augmentation is a technique that is used to artificially expand the data-set.
- ❑ They can improve the predictive accuracy

Image Labelling

- ❑ Image Labeling that focuses on identifying and tagging specific details in an image.
- ❑ Easy data collection

model accuracy prediction:



Results

Validation accuracy: 83.20%

Training finished: Max epochs completed

Training Time

Start time: 25-May-2023 09:29:22

Elapsed time: 32 min 4 sec

Training Cycle

Epoch: 10 of 10

Iteration: 310 of 310

Iterations per epoch: 31

Maximum iterations: 310

Validation

Frequency: 50 iterations

Other Information

Hardware resource: Single CPU

Learning rate schedule: Constant

Learning rate: 0.001

Training on single CPU.

Initializing input data normalization.

Epoch	Iteration	Time Elapsed (hh:mm:ss)	Mini-batch Accuracy	Validation Accuracy	Mini-batch Loss	Validation Loss	Base Learning Rate
1	1	00:00:10	28.12%	37.60%	1.1929	1.0961	0.0010
2	50	00:01:45	40.62%	50.40%	1.0446	0.9759	0.0010
4	100	00:05:36	65.62%	63.20%	0.8741	0.8687	0.0010
5	150	00:09:57	65.62%	64.00%	0.8291	0.7652	0.0010
7	200	00:11:41	81.25%	68.40%	0.5181	0.6924	0.0010
9	250	00:13:15	84.38%	77.60%	0.5001	0.6104	0.0010
10	300	00:14:50	87.50%	72.40%	0.3375	0.7290	0.0010
10	310	00:15:15	75.00%	80.00%	0.4629	0.5298	0.0010

Training finished: Max epochs completed.

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ADVANTAGES

- Improved Efficiency
- Predict Accuracy
- Accessibility
- Consistency

CONCLUSION

The updated model demonstrates better efficiency and accuracy compared to previous models, leading to more reliable and timely diagnoses. Overall, implementing this system can significantly improve patient outcomes and alleviate the burden on healthcare systems.

THANK

YOU