Summary Report (Digits)

2022. 09. 12

A. Classification Report

1. Decision Tree

precision recall f1-score support

0 0.91 0.94 0.92 32

1 0.93 0.72 0.81 36

2 0.96 0.73 0.83 30

3 0.74 0.83 0.78 41

4 0.80 0.88 0.84 32

5 0.90 0.93 0.91 46

6 0.93 0.88 0.90 32

7 0.90 0.93 0.91 40

8 0.77 0.81 0.79 42

9 0.69 0.76 0.72 29

accuracy 0.84 360

macro avg 0.85 0.84 0.84 360

weighted avg 0.85 0.84 0.84 360

2. Random Forest

precision recall f1-score support

0 0.97 0.94 0.95 32

1 0.97 1.00 0.99 36

2 1.00 1.00 1.00 30

3 0.98 0.98 0.98 41

4 0.94 0.97 0.95 32

5 1.00 0.98 0.99 46

6 1.00 0.97 0.98 32

7 0.98 1.00 0.99 40

8 0.93 0.98 0.95 42

9 1.00 0.93 0.96 29

accuracy 0.97 360

macro avg 0.98 0.97 0.97 360

weighted avg 0.98 0.97 0.98 360

3. Support Vector Machine

precision recall f1-score support

0 1.00 0.97 0.98 32

1 0.95 1.00 0.97 36

2 1.00 1.00 1.00 30

3 1.00 1.00 1.00 41

4 0.97 1.00 0.98 32

5 0.98 1.00 0.99 46

6 1.00 1.00 1.00 32

7 1.00 1.00 1.00 40

8 0.98 0.95 0.96 42

9 1.00 0.93 0.96 29

accuracy 0.99 360

macro avg 0.99 0.99 0.99 360

weighted avg 0.99 0.99 0.99 360

4. Stochastic Gradient Descent

precision recall f1-score support

0 1.00 1.00 1.00 32

1 0.87 0.94 0.91 36

2 0.97 1.00 0.98 30

3 0.93 1.00 0.96 41

4 1.00 0.97 0.98 32

5 0.98 0.93 0.96 46

6 0.94 1.00 0.97 32

7 0.91 1.00 0.95 40

8 1.00 0.86 0.92 42

9 1.00 0.86 0.93 29

accuracy 0.96 360

macro avg 0.96 0.96 0.96 360

weighted avg 0.96 0.96 0.96 360

5, Logistic Regression

precision recall f1-score support

0 1.00 1.00 1.00 43

1 0.95 0.95 0.95 42

2 0.98 1.00 0.99 40

3 0.94 0.97 0.96 34

4 1.00 1.00 1.00 37

5 0.79 0.96 0.87 28

6 1.00 0.96 0.98 28

7 0.94 0.97 0.96 33

8 0.92 0.81 0.86 43

9 0.97 0.88 0.92 32

accuracy 0.95 360

macro avg 0.95 0.95 0.95 360

weighted avg 0.95 0.95 0.95 360

B. 평가지표 선정 및 선정 근거

평가지표로 Accuracy를 선정한다.

손글씨 숫자를 맞추는것은 특별히 고려하여야 할 다른 요소가 없기때문에 정확하게 맞추는것이 중요하다.

Accuracy값이 0.99로 가장 높은 Support Vector Machine Classifier의 성능이 가장 우수한것으로 나타났다.