Nech X je vektor, veľkosti počtu tried N. Vektor nadobúda hodnoty v závislosti od aktivačnej funkcie poslednej vrstvy.

Ak je použitá aktivačná vrstva SoftMax, X nadobúda hodnoty od 0 po 1, a hovorí, s akou pravdepodobnosťou zaradíme vstup do danej triedy. Klasifikátor určí triedu vstupu podľa najvyššej pravdepodobnosti.

Ak natrénujeme klasifikátor s aktivačnou funkciou Sigmoid a pri predpovediach odstránime aktivačnú funkciu, X nadobúda hodnoty v intervale <>

Použité predikátory:

p je index predpovedanej triedy podľa použitého klasifikátora.

**AbsDistanceFromPredicted**

Kritérium:

**SquereDistanceFromPredicted**

Kritérium:

**SumAbs**

Kritérium:

**SumSquare**

Kritérium:

**MaxArgPredictor**

Kritérium:

Este skusit priemer minus nieco. Napisat,ze nespravne triedy badobudaju zaporne hodnoty a spravna kladne.

Výsledky:

**Klasifikátor natrénovaný na FashionMnist, bez aktivačnej funkcie**

Percentil trénovacích dát: 10

Threashold určený na FashionMnist

AbsDistanceFromPredicted

Predict train

correct: 59951

unknown: 0

SquereDistanceFromPredicted

Predict train

correct: 59951

unknown: 0

SumAbs

Predict train

correct: 59951

unknown: 0

SumSquere

Predict train

correct: 59951

unknown: 0

MaxArgPredictor

Predict train

correct: 59951

unknown: 0

Predikované na trénovacom datasete FashionMnist

AbsDistanceFromPredicted

Threashold: 257.0

Test:

correct: 8421

unknown: 1344

SquereDistanceFromPredicted

Threashold: 9108.0

Test:

correct: 8406

unknown: 1347

SumAbs

Threashold: 158.0

Test:

correct: 8442

unknown: 1270

SumSquere

Threashold: 3749.0

Test:

correct: 8414

unknown: 1287

MaxArgPredictor

Threashold: 13.266045761108398

Test:

correct: 8379

unknown: 1403

Predikované na trénovacom datasete Mnist

AbsDistanceFromPredicted

Threashold: 257.0

Test:

correct: 392

unknown: 6568

SquereDistanceFromPredicted

Threashold: 9108.0

Test:

correct: 354

unknown: 6906

SumAbs

Threashold: 158.0

Test:

correct: 432

unknown: 6199

SumSquere

Threashold: 3749.0

Test:

correct: 346

unknown: 6861

MaxArgPredictor

Threashold: 13.266045761108398

Test:

correct: 379

unknown: 6754

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Klasifikátor bez aktivácie | Fashion mnist | | Mnist | |
| Tréning na Fashion mniste | Correct | Unknown | Correct | Unknown |
| AbsDistanceFromPredicted | 8421 | 1344 | 392 | 6568 |
| SquereDistanceFromPredicted | 8406 | 1347 | 354 | 6906 |
| SumAbs | 8442 | 1270 | 432 | 6199 |
| SumSquere | 8414 | 1287 | 346 | 6861 |
| MaxArgPredictor | 8379 | 1403 | 379 | 6754 |

**Klasifikátor natrénovaný na FashionMnist, s aktivačnou funkciou Sigmoid**

Percentil trénovacích dát: 10

Threashold určený na FashionMnist

AbsDistanceFromPredicted

Predict train

correct: 59951

unknown: 0

SquereDistanceFromPredicted

Predict train

correct: 59951

unknown: 0

SumAbs

Predict train

correct: 59951

unknown: 0

SumSquere

Predict train

correct: 59951

unknown: 0

MaxArgPredictor

Predict train

correct: 59951

unknown: 0

Predikované na trénovacom datasete FashionMnist

AbsDistanceFromPredicted

Threashold: 8.0

Test:

correct: 9105

unknown: 525

SquereDistanceFromPredicted

Threashold: 8.0

Test:

correct: 8998

unknown: 682

SumAbs

Threashold: 1.0

Test:

correct: 8670

unknown: 875

SumSquere

Threashold: 0.0

Test:

correct: 9387

unknown: 0

MaxArgPredictor

Threashold: 0.9995928406715393

Test:

correct: 8204

unknown: 1688

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Klasifikátor s aktiváciu Sigmoid | Fashion mnist | | Mnist | |
| Tréning na Fashion mniste | Correct | Unknown | Correct | Unknown |
| AbsDistanceFromPredicted | 9105 | 525 |  |  |
| SquereDistanceFromPredicted |  |  |  |  |
| SumAbs |  |  |  |  |
| SumSquere |  |  |  |  |
| MaxArgPredictor |  |  |  |  |

Predikované na trénovacom datasete Mnist

AbsDistanceFromPredicted

Threashold: 8.0

Test:

correct: 729

unknown: 2029

SquereDistanceFromPredicted

Threashold: 8.0

Test:

correct: 693

unknown: 2514

SumAbs

Threashold: 1.0

Test:

correct: 707

unknown: 2310

SumSquere

Threashold: 0.0

Test:

correct: 892

unknown: 0

MaxArgPredictor

Threashold: 0.9995928406715393

Test:

correct: 497

unknown: 5224

**Klasifikátor natrénovaný na Mnist, bez aktivačnej funkcie**

Percentil trénovacích dát: 10

Threashold určený na Mnist

AbsDistanceFromPredicted

Predict train

correct: 59983

unknown: 0

SquereDistanceFromPredicted

Predict train

correct: 59983

unknown: 0

SumAbs

Predict train

correct: 59983

unknown: 0

SumSquere

Predict train

correct: 59983

unknown: 0

MaxArgPredictor

Predict train

correct: 59983

unknown: 0

Predikované na trénovacom datasete Mnist

AbsDistanceFromPredicted

Threashold: 353.0

Test:

correct: 9034

unknown: 964

SquereDistanceFromPredicted

Threashold: 14825.0

Test:

correct: 9028

unknown: 970

SumAbs

Threashold: 128.0

Test:

correct: 9041

unknown: 955

SumSquere

Threashold: 2554.0

Test:

correct: 9035

unknown: 963

MaxArgPredictor

Threashold: 29.88836898803711

Test:

correct: 9015

unknown: 983

Predikované na trénovacom datasete FashionMnist

AbsDistanceFromPredicted

Threashold: 353.0

Test:

correct: 316

unknown: 5483

SquereDistanceFromPredicted

Threashold: 14825.0

Test:

correct: 337

unknown: 5254

SumAbs

Threashold: 128.0

Test:

correct: 466

unknown: 3418

SumSquere

Threashold: 2554.0

Test:

correct: 453

unknown: 3591

MaxArgPredictor

Threashold: 29.88836898803711

Test:

correct: 207

unknown: 6820

**Klasifikátor natrénovaný na Mnist, s aktivačnou vrstvou Sigmoid**

Percentil trénovacích dát: 10

Threashold určený na Mnist

AbsDistanceFromPredicted

Predict train

correct: 59983

unknown: 0

SquereDistanceFromPredicted

Predict train

correct: 59983

unknown: 0

SumAbs

Predict train

correct: 59983

unknown: 0

SumSquere

Predict train

correct: 59983

unknown: 0

MaxArgPredictor

Predict train

correct: 59983

unknown: 0

Predikované na trénovacom datasete Mnist

AbsDistanceFromPredicted

Threashold: 9.0

Test:

correct: 9444

unknown: 555

SquereDistanceFromPredicted

Threashold: 9.0

Test:

correct: 9444

unknown: 555

SumAbs

Threashold: 1.0

Test:

correct: 9816

unknown: 159

SumSquere

Threashold: 1.0

Test:

correct: 9476

unknown: 523

MaxArgPredictor

Threashold: 1.0

Test:

correct: 9476

unknown: 523

Predikované na trénovacom datasete FashionMnist

AbsDistanceFromPredicted

Threashold: 9.0

Test:

correct: 243

unknown: 5694

SquereDistanceFromPredicted

Threashold: 9.0

Test:

correct: 243

unknown: 5694

SumAbs

Threashold: 1.0

Test:

correct: 562

unknown: 1532

SumSquere

Threashold: 1.0

Test:

correct: 252

unknown: 5556

MaxArgPredictor

Threashold: 1.0

Test:

correct: 252

unknown: 5556