Deep learning final project

With dropout 0.2

No early stop

Epoch size = 10

Training and evaluating a densely connected model

A screenshot of a cell phone

Description automatically generated

Epoch 1/10

500/500 [==============================] - 123s 245ms/step - loss: 0.1808 - val\_loss: 0.0765

Epoch 2/10

500/500 [==============================] - 123s 246ms/step - loss: 0.0712 - val\_loss: 0.0610

Epoch 3/10

500/500 [==============================] - 126s 253ms/step - loss: 0.0642 - val\_loss: 0.0692

Epoch 4/10

500/500 [==============================] - 124s 247ms/step - loss: 0.0616 - val\_loss: 0.0636

Epoch 5/10

500/500 [==============================] - 122s 245ms/step - loss: 0.0601 - val\_loss: 0.0542

Epoch 6/10

500/500 [==============================] - 123s 246ms/step - loss: 0.0588 - val\_loss: 0.0673

Epoch 7/10

500/500 [==============================] - 123s 246ms/step - loss: 0.0577 - val\_loss: 0.0579

Epoch 8/10

500/500 [==============================] - 124s 248ms/step - loss: 0.0568 - val\_loss: 0.0505

Epoch 9/10

500/500 [==============================] - 123s 246ms/step - loss: 0.0557 - val\_loss: 0.0483

Epoch 10/10

500/500 [==============================] - 123s 247ms/step - loss: 0.0551 - val\_loss: 0.0610

PREDICTION

(1, 392, 20)

Input:[0.7311828 0.69969666 0.21884498 0.8 0.76449275 0.69100529

0.24550898 0.88571429 0.53292181 0.16879795 0.87619048 0.54834254

0.69058296 0.13115426 0.88571429 0.72136223 0.39133333 0.91428571

0.58630137 0.52173913]

Prediction:[[0.516577]]

Actual:0.5931899641577062

Deep learning final project

Without dropout 0.2

No early stop

Epoch size = 10

Training and evaluating a densely connected model

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Description automatically generated

Epoch 1/10

500/500 [==============================] - 166s 331ms/step - loss: 0.1578 - val\_loss: 0.0666

Epoch 2/10

500/500 [==============================] - 187s 374ms/step - loss: 0.0647 - val\_loss: 0.0680

Epoch 3/10

500/500 [==============================] - 185s 371ms/step - loss: 0.0619 - val\_loss: 0.0578

Epoch 4/10

500/500 [==============================] - 182s 365ms/step - loss: 0.0595 - val\_loss: 0.0573

Epoch 5/10

500/500 [==============================] - 182s 364ms/step - loss: 0.0585 - val\_loss: 0.0655

Epoch 6/10

500/500 [==============================] - 195s 390ms/step - loss: 0.0578 - val\_loss: 0.0586

Epoch 7/10

500/500 [==============================] - 184s 369ms/step - loss: 0.0567 - val\_loss: 0.0510

Epoch 8/10

500/500 [==============================] - 194s 389ms/step - loss: 0.0553 - val\_loss: 0.0557

Epoch 9/10

500/500 [==============================] - 184s 368ms/step - loss: 0.0546 - val\_loss: 0.0676

Epoch 10/10

500/500 [==============================] - 193s 385ms/step - loss: 0.0537 - val\_loss: 0.0549

Predictions

(1, 392, 20)

[0.7311828 0.69969666 0.21884498 0.8 0.76449275 0.69100529

0.24550898 0.88571429 0.53292181 0.16879795 0.87619048 0.54834254

0.69058296 0.13115426 0.88571429 0.72136223 0.39133333 0.91428571

0.58630137 0.52173913]

[[0.61311543]]

0.5931899641577062

With dropout 0.2

No early stop

Epoch size = 10

GRU-based model

A screenshot of a cell phone

Description automatically generated

Epoch 1/10

500/500 [==============================] - 934s 2s/step - loss: 0.0646 - val\_loss: 0.0569

Epoch 2/10

500/500 [==============================] - 910s 2s/step - loss: 0.0527 - val\_loss: 0.0489

Epoch 3/10

500/500 [==============================] - 741s 1s/step - loss: 0.0475 - val\_loss: 0.0552

Epoch 4/10

500/500 [==============================] - 705s 1s/step - loss: 0.0436 - val\_loss: 0.0556

Epoch 5/10

500/500 [==============================] - 704s 1s/step - loss: 0.0405 - val\_loss: 0.0587

Epoch 6/10

500/500 [==============================] - 750s 2s/step - loss: 0.0383 - val\_loss: 0.0633

Epoch 7/10

500/500 [==============================] - 766s 2s/step - loss: 0.0365 - val\_loss: 0.0598

Epoch 8/10

500/500 [==============================] - 744s 1s/step - loss: 0.0351 - val\_loss: 0.0697

Epoch 9/10

500/500 [==============================] - 776s 2s/step - loss: 0.0333 - val\_loss: 0.0661

Epoch 10/10

500/500 [==============================] - 752s 2s/step - loss: 0.0321 - val\_loss: 0.0698

PREDICTIONS

(1, 392, 20)

[0.74671446 0.70037074 0.22391084 0.80952381 0.76630435 0.68924162

0.23053892 0.91428571 0.54115226 0.1713555 0.84285714 0.54788214

0.68908819 0.1084955 0.91428571 0.7244582 0.41533333 0.91428571

0.58630137 0.56521739]

[[0.61068314]]

0.5973715651135008

With dropout 0.2

early stop(patience=2)

Epoch size = 10

GRU-based model

A screenshot of a cell phone

Description automatically generated

Epoch 1/10

500/500 [==============================] - 731s 1s/step - loss: 0.0718 - val\_loss: 0.0475

Epoch 2/10

500/500 [==============================] - 727s 1s/step - loss: 0.0573 - val\_loss: 0.0518

Epoch 3/10

500/500 [==============================] - 765s 2s/step - loss: 0.0516 - val\_loss: 0.0618

Epoch 4/10

500/500 [==============================] - 737s 1s/step - loss: 0.0482 - val\_loss: 0.0537

Epoch 5/10

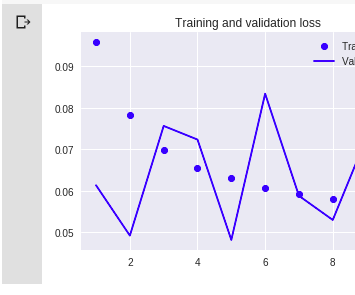
500/500 [==============================] - 857s 2s/step - loss: 0.0455 - val\_loss: 0.0545

With dropout 0.2

Without early stop

Epoch size = 10

GRU-based model



Epoch 1/10

500/500 [==============================] - 1150s 2s/step - loss: 0.0958 - val\_loss: 0.0614

Epoch 2/10

500/500 [==============================] - 1164s 2s/step - loss: 0.0783 - val\_loss: 0.0492

Epoch 3/10

500/500 [==============================] - 1151s 2s/step - loss: 0.0698 - val\_loss: 0.0756

Epoch 4/10

500/500 [==============================] - 1147s 2s/step - loss: 0.0655 - val\_loss: 0.0724

Epoch 5/10

500/500 [==============================] - 1144s 2s/step - loss: 0.0631 - val\_loss: 0.0482

Epoch 6/10

500/500 [==============================] - 1145s 2s/step - loss: 0.0608 - val\_loss: 0.0834

Epoch 7/10

500/500 [==============================] - 1144s 2s/step - loss: 0.0592 - val\_loss: 0.0588

Epoch 8/10

500/500 [==============================] - 1150s 2s/step - loss: 0.0580 - val\_loss: 0.0530

Epoch 9/10

500/500 [==============================] - 1149s 2s/step - loss: 0.0573 - val\_loss: 0.0729

Epoch 10/10

500/500 [==============================] - 1136s 2s/step - loss: 0.0560 - val\_loss: 0.0584

(1, 392, 20)

[0.74671446 0.70037074 0.22391084 0.80952381 0.76630435 0.68924162

0.23053892 0.91428571 0.54115226 0.1713555 0.84285714 0.54788214

0.68908819 0.1084955 0.91428571 0.7244582 0.41533333 0.91428571

0.58630137 0.56521739]

[[0.51531214]]

0.5973715651135008