



Model Development Phase Template

| Date | 15 October 2024 | |
|---------------|--|--|
| Team ID | 739739 | |
| Project Title | Predicting Diamond Prices With ANN Using Deep Learning | |
| Maximum Marks | 10 Marks | |

Initial Model Training Code, Model Validation and Evaluation Report

The initial model training code will be showcased in the future through a screenshot. The model validation and evaluation report will include a summary and training and validation performance metrics for multiple models, presented through respective screenshots.

Initial Model Training Code (5 marks):

```
[ ] history = model.fit(x_train, y_train, epochs=100, batch_size=32, validation_split=0.1)
```

Model Validation and Evaluation Report (5 marks):

| | | Training and Validation Performance |
|-------|---------|-------------------------------------|
| Model | Summary | Metrics |

Keras

model.summary()

Model: "sequential"

| Layer (type) | Output Shape | Param # |
|-----------------|--------------|---------|
| dense (Dense) | (None, 128) | 1,280 |
| dense_1 (Dense) | (None, 64) | 8,256 |
| dense_2 (Dense) | (None, 1) | 65 |

Total params: 9,601 (37.50 KB)
Trainable params: 9,601 (37.50 KB)
Non-trainable params: 0 (0.00 B)

| Epoch 1/100 | 20 3mg/stan loss (004747 0000 mag 4700 3607 mg 1 1 370649 0003 |
|--|---|
| | - 2s 2ms/step - loss: 6004717.0000 - mae: 1798.3607 - val_loss: 370642.9062 |
| Epoch 2/100 | - 3e 3ms/stan local 315000 3100 man 406 5013 wal 1 345050 6406 |
| | - 3s 2ms/step - loss: 315008.2188 - mae: 406.5912 - val_loss: 245858.6406 - |
| Epoch 3/100 | - 30 3mo/ston loss: 335605 3304 mag: 333 6400 wall least 337375 6740 |
| 674/674 ———————————————————————————————————— | - 2s 3ms/step - loss: 235605.3281 - mae: 332.6490 - val_loss: 227275.6719 - |
| Epoch 4/100 | - 3c 3mc/ston local 230313 7031 man 234 0063 wal land 233170 4563 |
| 674/674 ———————————————————————————————————— | - 2s 2ms/step - loss: 229313.7031 - mae: 324.9062 - val_loss: 223178.1562 - |
| Epoch 5/100 | 10 3mg/ston loos 210406 0430 was 310 4405 wal 1 220520 2244 |
| 674/674 ———————————————————————————————————— | - 1s 2ms/step - loss: 219496.8438 - mae: 319.4495 - val_loss: 220520.2344 - |
| Epoch 6/100 | - 1c 3ms/stop loss: 210706 9006 mag: 210 4552 wall loss: 210706 7060 |
| 674/674 ———————————————————————————————————— | - 1s 2ms/step - loss: 219706.8906 - mae: 318.4552 - val_loss: 218706.7969 - |
| Epoch 7/100 | - 1e 3ms/ston loss: 207550 4600 mss: 240 2003 |
| 674/674 ———————————————————————————————————— | - 1s 2ms/step - loss: 207558.4688 - mae: 310.3093 - val_loss: 220108.1875 - |
| Epoch 8/100 | - 1e 1mc/ston - locs: 214505 2012 - mag: 212 0210 - val locs: 217055 0420 |
| 674/674 ———————————————————————————————————— | - 1s 1ms/step - loss: 214595.2812 - mae: 313.8318 - val_loss: 217865.8438 - |
| Epoch 9/100 | - 1s 2ms/step - loss: 216433.6562 - mae: 315.0001 - val_loss: 218446.9531 - |
| 674/674 — Epoch 10/100 | - 10 Zm3/3cep - 1055; Z10455.050Z - mde; 315.0001 - Vd1_1055; Z18446.9531 - |
| | = 1e 2mc/stan = loss: 213671 9125 = mas: 200 4117 = val loss: 217064 2190 |
| 674/674 ———————————————————————————————————— | - 1s 2ms/step - loss: 213671.8125 - mae: 308.4117 - val_loss: 217064.2188 - |
| Epoch 11/100 674/674 ———————————————————————————————————— | - 2s 2ms/step - loss: 214080.5469 - mae: 308.7069 - val loss: 211551.7188 - |
| | 23 zm3/ step - 1035; Z14000.3403 - mae. 300./003 - val_1055; Z11331./188 - |
| Epoch 12/100 674/674 ———————————————————————————————————— | - 2s 2ms/step - loss: 212854.2500 - mae: 307.5582 - val loss: 211485.8906 - |
| Epoch 13/100 | Fe 5113/ 2504 - 1033: 515034:5300 - 11146: 30/:3305 - AGT 1032: 511483:8300 - |
| 674/674 | - 2s 2ms/step - loss: 207658.4844 - mae: 303.1884 - val loss: 209359.2656 - |
| Epoch 14/100 | 2003/3004 - 1033, 20/030:4044 - mac. 303:1004 - Val 1033; 203333:2030 - |
| 674/674 | - 1s 2ms/step - loss: 203917.1875 - mae: 299.8109 - val loss: 209411.3438 - |
| Epoch 15/100 | 22 2007, 512p 20001 200021 12010 mac. 20010200 102_20031 2004211.0430 |
| 674/674 | - 1s 2ms/step - loss: 203519.4219 - mae: 299.2527 - val loss: 208756.8281 - |
| Enoch 94/100 | |
| 674/674 | 1s 2ms/step - loss: 110370.2031 - mae: 197.4303 - val_los |
| → Epoch 85/100 | _ |
| 674/674 | 1s 2ms/step - loss: 107700.4844 - mae: 195.1191 - val_los |
| Epoch 86/100 | |
| 674/674 | 1s 2ms/step - loss: 105300.4609 - mae: 193.8964 - val_los |
| Epoch 87/100 | 10 2ms/ston lossy 100704 (004 100 0607 1 |
| 674/674 ———————————————————————————————————— | 1s 2ms/step - loss: 100781.6094 - mae: 189.2627 - val_los |
| Epoch 88/100 674/674 | 1s 2ms/step - loss: 102141.9766 - mae: 190.7357 - val_los |
| Epoch 89/100 | 20 2m3/3tep - 1033, 102141.5/00 - mae, 150./33/ - Val_103 |
| 674/674 | 1s 2ms/step - loss: 106255.8750 - mae: 194.5740 - val_los |
| Epoch 90/100 | |
| 674/674 | 2s 2ms/step - loss: 101369.6016 - mae: 190.9064 - val_los |
| Epoch 91/100 | |
| 674/674 | 2s 2ms/step - loss: 98009.5938 - mae: 188.0024 - val_loss |
| Epoch 92/100 | |
| 674/674 | 2s 2ms/step - loss: 102004.5000 - mae: 189.5029 - val_los |
| Epoch 93/100 | 1- 2- (stor less 20004 7425 most 402 5227 |
| 674/674 ———————————————————————————————————— | 1s 2ms/step - loss: 99984.3125 - mae: 188.5337 - val_loss |
| Epoch 94/100 674/674 | 1s 2ms/step - loss: 95966.7266 - mae: 186.1244 - val loss |
| Epoch 95/100 | 2001.1244 - Val_1055 |
| 674/674 ———— | 1s 2ms/step - loss: 94505.1094 - mae: 184.0008 - val_loss |
| Epoch 96/100 | 20 2, seep 10001 5450511054 mac. 10410000 - Val_1000 |
| 674/674 | 1s 2ms/step - loss: 95629.4609 - mae: 184.3552 - val_loss |
| Epoch 97/100 | |
| 674/674 | 1s 2ms/step - loss: 96706.7344 - mae: 186.0550 - val_loss |
| Epoch 98/100 | _ |
| 674/674 | 1s 2ms/step - loss: 96791.5703 - mae: 186.3500 - val_loss |
| Epoch 99/100 | |
| 674/674 | 3s 2ms/step - loss: 93741.5234 - mae: 183.4680 - val_loss |
| Epoch 100/100 | |
| | |