

### ANN Hyperparameters

Hidden Layers

2

1

5

Neurons per Layer

64

8

256

Activation Function

relu

▼

Dropout Rate

0.30

0.00

0.50

☒ Use Batch Normalization

Optimizer

adam

▼

Learning Rate

0.00

-

+

Batch Size

16

▼

Epochs

20

5

100

# Amazon Product Category Classifier

## Model Summary

Model: "sequential"

| Layer (type)                               | Output Shape | Param #   |
|--|--------------|-----------|
| dense (Dense)                              | (None, 64)   | 4,199,552 |
| batch_normalization (BatchNormalization)   | (None, 64)   | 256       |
| dropout (Dropout)                          | (None, 64)   | 0         |
| dense_1 (Dense)                            | (None, 64)   | 4,160     |
| batch_normalization_1 (BatchNormalization) | (None, 64)   | 256       |
| dropout_1 (Dropout)                        | (None, 64)   | 0         |
| dense_2 (Dense)                            | (None, 44)   | 2,860     |

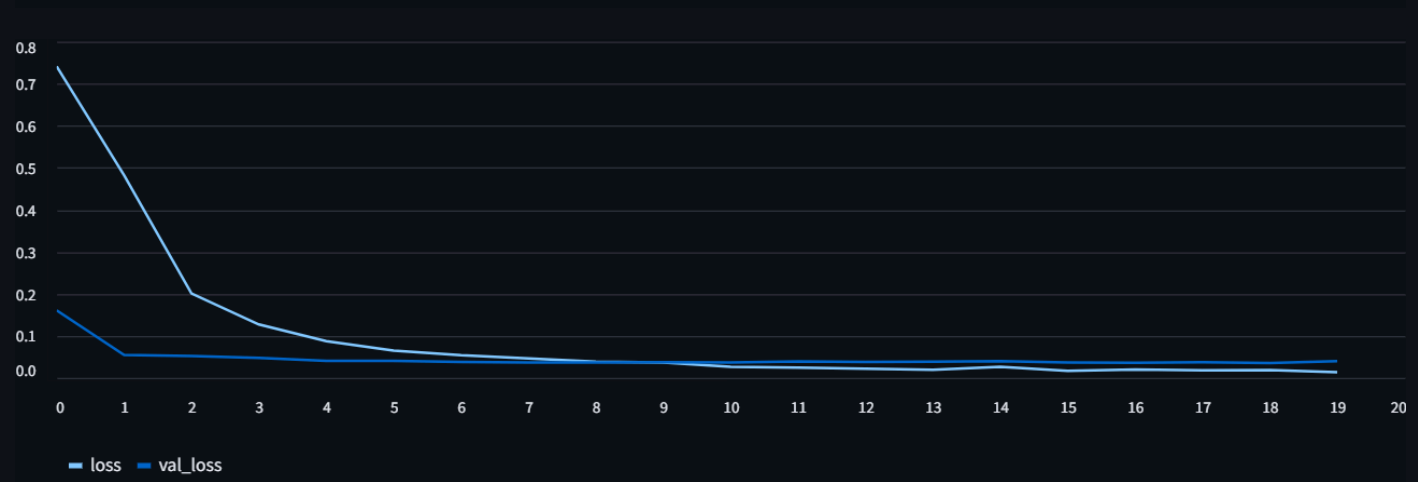
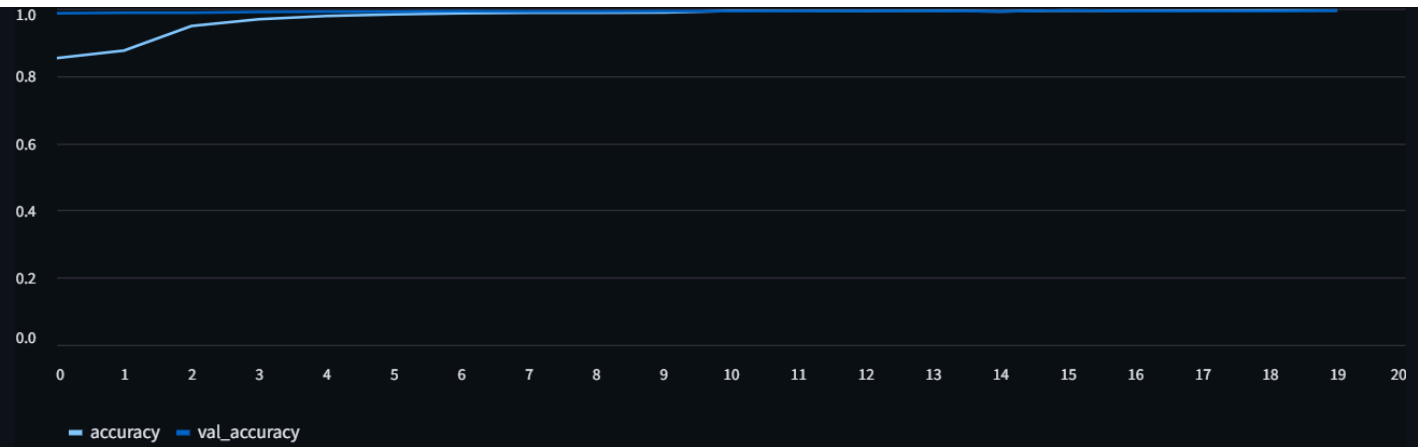
Total params: 12,620,742 (48.14 MB)

Trainable params: 4,206,828 (16.05 MB)

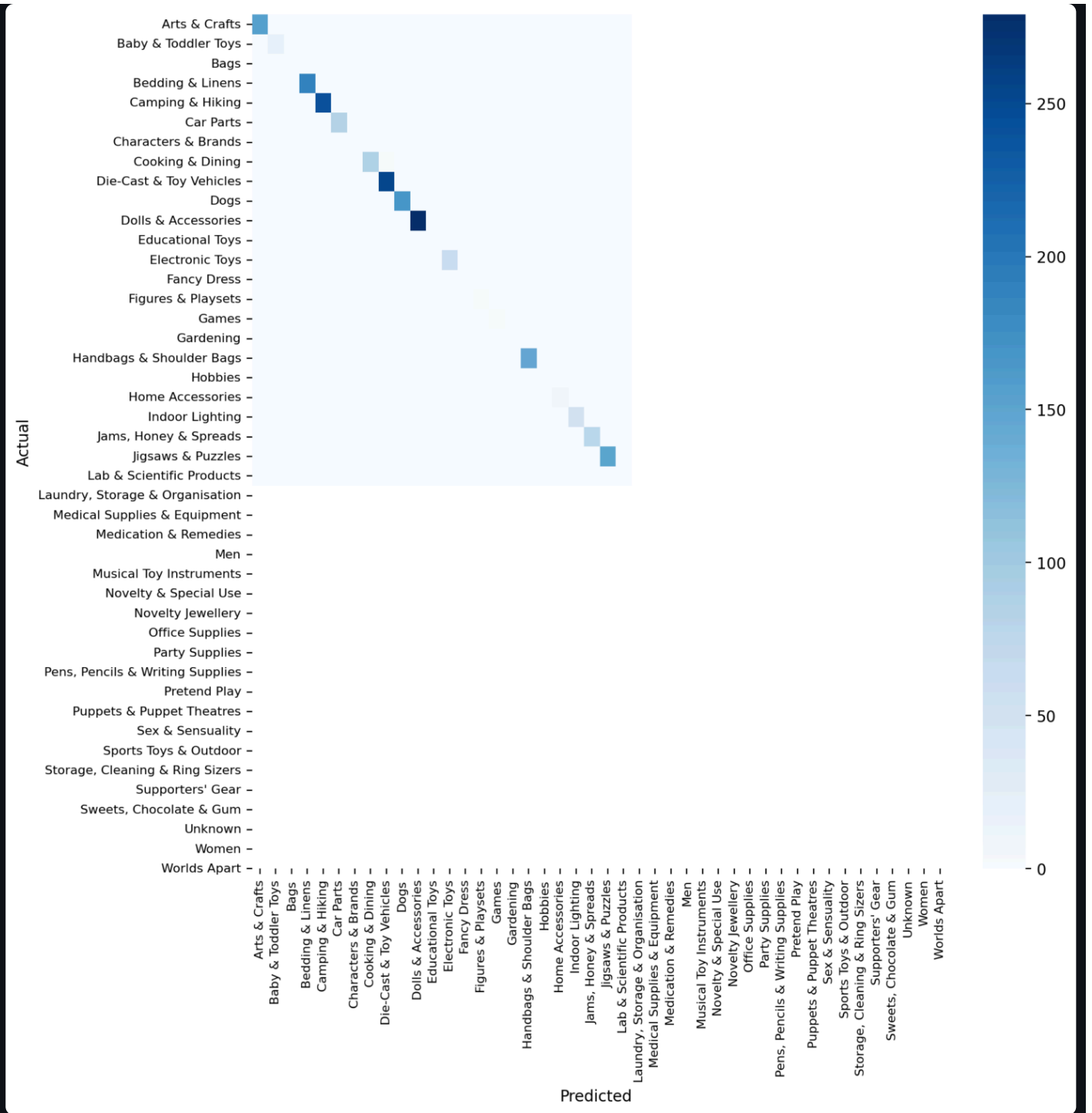
Non-trainable params: 256 (1.00 KB)

Optimizer params: 8,413,658 (32.10 MB)

## Training Accuracy & Loss



## Confusion Matrix



Classification Report

|                         | precision | recall | f1-score | support |
|-------------------------|-----------|--------|----------|---------|
| Arts & Crafts           | 0.9873    | 1      | 0.9936   | 156     |
| Baby & Toddler Toys     | 1         | 0.9565 | 0.9778   | 23      |
| Bags                    | 1         | 1      | 1        | 1       |
| Characters & Brands     | 0.9895    | 1      | 0.9947   | 189     |
| Die-Cast & Toy Vehicles | 1         | 1      | 1        | 241     |
| Dolls & Accessories     | 1         | 1      | 1        | 84      |
| Electronic Toys         | 0         | 0      | 0        | 2       |
| Fancy Dress             | 0.9888    | 0.967  | 0.9778   | 91      |
| Figures & Playsets      | 0.9884    | 1      | 0.9942   | 255     |
| Games                   | 0.9942    | 1      | 0.9971   | 170     |
|                         |           |        |          |         |