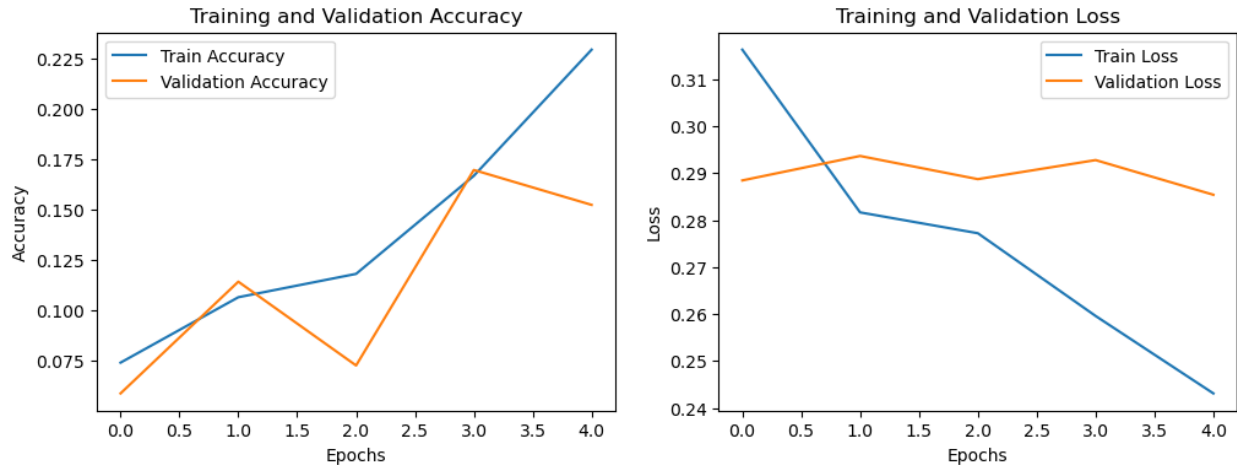


Output data

Phimore Koung

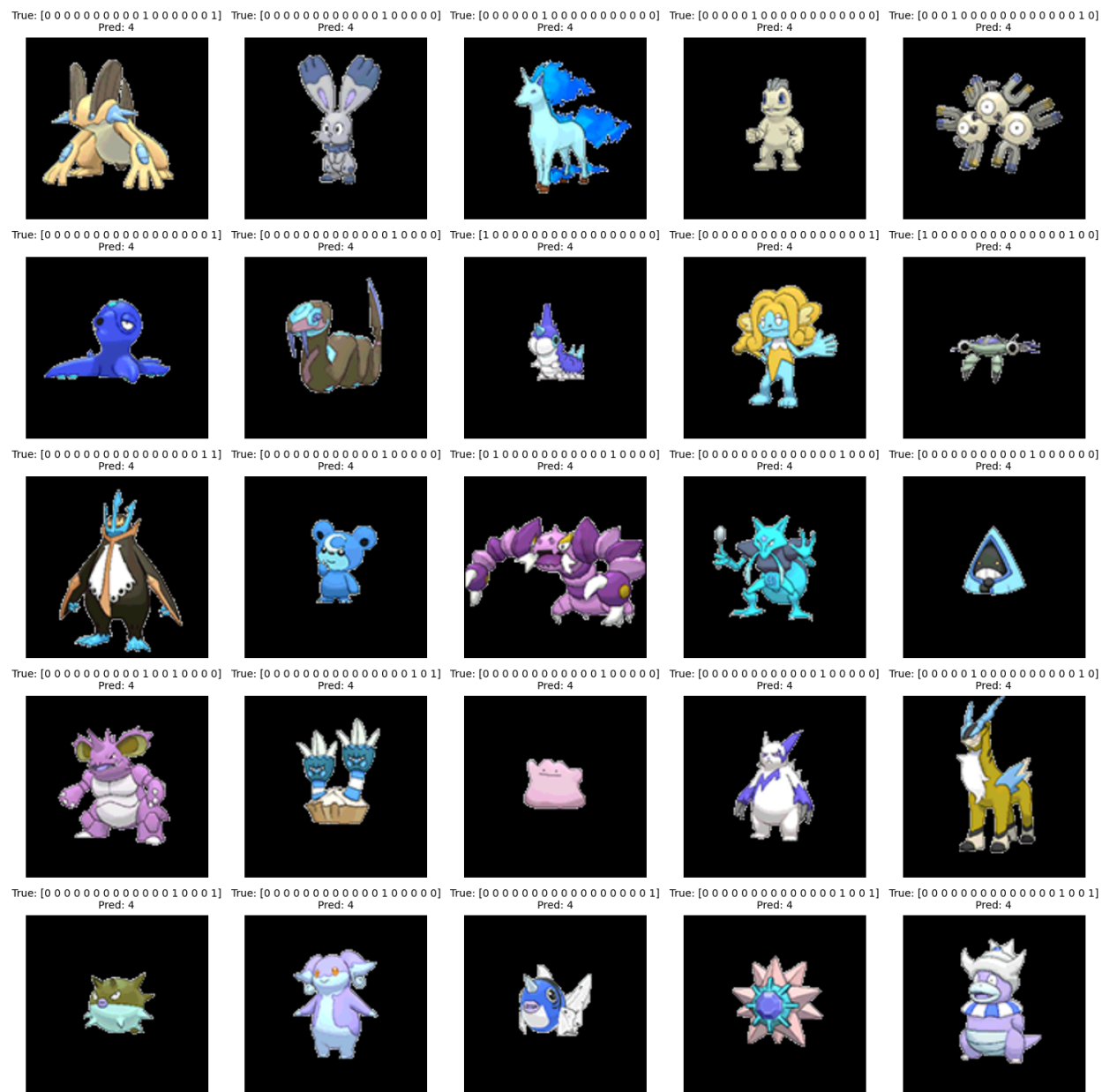


Our training and validation accuracy plot shows our training accuracy is generally increasing over epochs, this indicates that our model is learning from the train data. On the other hand, the validation accuracy fluctuates and decreases during the second and fourth epoch, this suggests that the model might be overfitting to the training data which leads to worse performance on the validation dataset.

The training and validation loss graph indicates training loss decreasing over epochs which is a good sign that the model predictions are becoming more accurate with training. Again, our validation loss is not decreasing steadily with epochs which is a sign of overfitting.

Overall, this shows that while our model is learning and improving predictions with training data, it is not generalizing well to new data, our validation set. This is a sign of overfitting or perhaps the dataset is not structured well. More data would probably help increase validation accuracy and decrease validation loss.

Output data
Phimore Koung



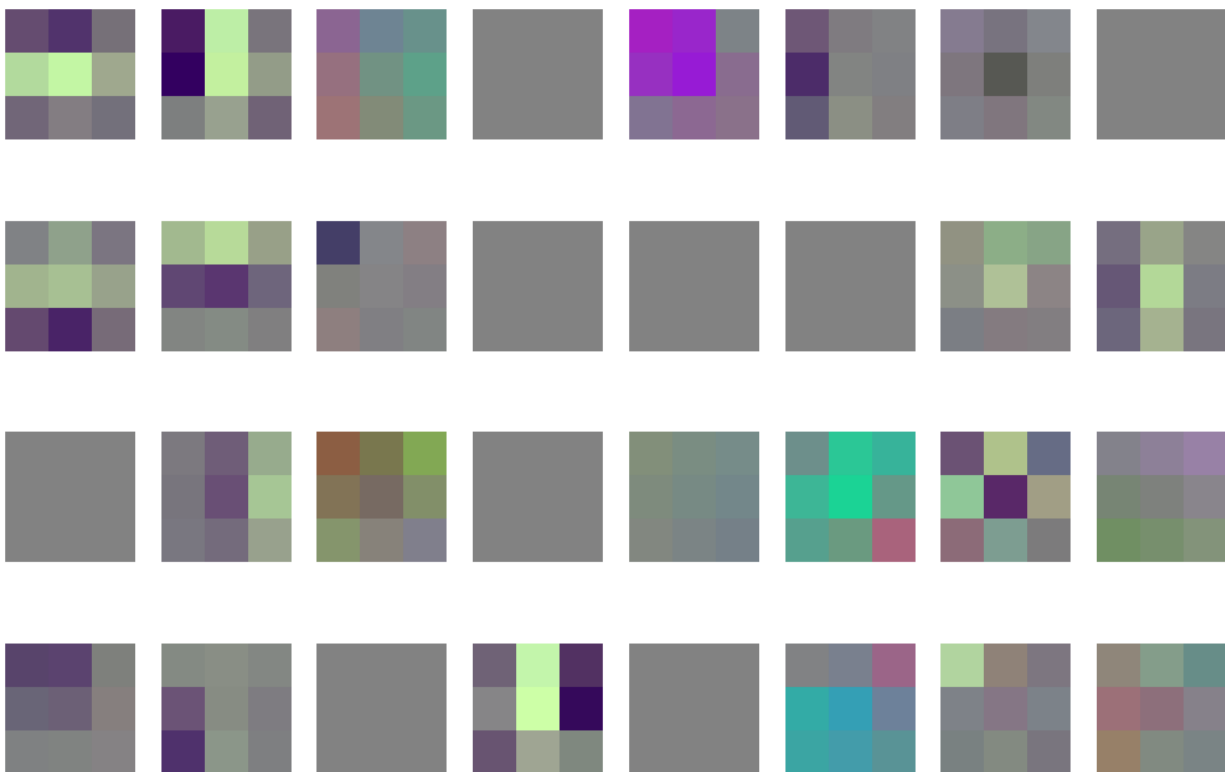
These examples show 25 test data points from the test set and the model's prediction and true value along with the image

Output data

Phimore Koung

Iteration	Batch Size	Number of Layers	Filter Size Layer 1	Activation Function	Optimizer	Training Accuracy	Test Accuracy
15	326	2	3x3	ReLU	Adam	75.87%	20.00%
10	32	2	3x3	ReLU	Adam	73.78%	22.07%
5	32	2	3x3	ReLU	Adam	73.96%	21.38%
5	16	2	3x3	ReLU	Adam	75.17%	21.38%
5	8	2	3x3	ReLU	Adam	74.13%	22.07%
5	8	2	3x3	ReLU	SGD	72.74%	22.07%
5	8	2	1x1	ReLU	Adam	70.14%	14.48%
5	8	2	5x5	ReLU	Adam	49.48%	15.17%
5	8	5	3x3	ReLU	Adam	23.61%	15.17%
5	8	2	3x3	Softmax	Adam	04.86%	04.14%
5	8	2	3x3	tanh	Adam	09.20%	08.97%

After extensive testing, our best model included 5 iterations, 8 batch size, 2 layers, 3x3 filter size, activation function ReLU, and optimizer Adam. Again, our model's best accuracy was 22.07% which is better than random guessing (1/18 or 5.56%).



This filter visualization shows an extracted filter from a layer in our neural network that our model uses to understand and process input data like edges, textures, or patterns.