Tom & Jerry

Image Classification Project

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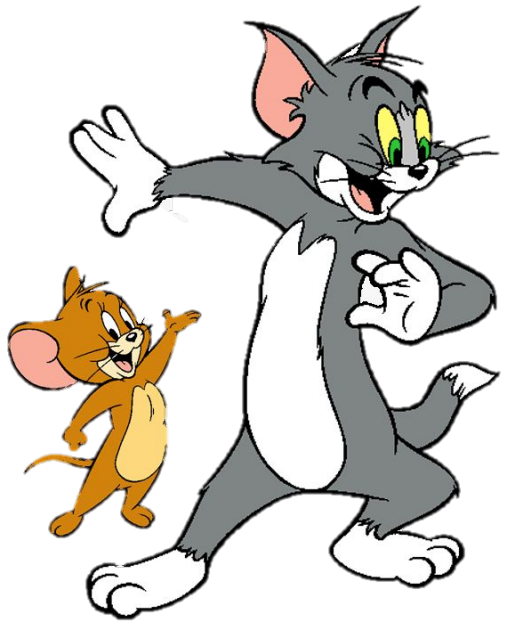
Contents

Tom & Jerry Classification

- Identify Tom & Jerry characters from colored images by using convolutional neural network

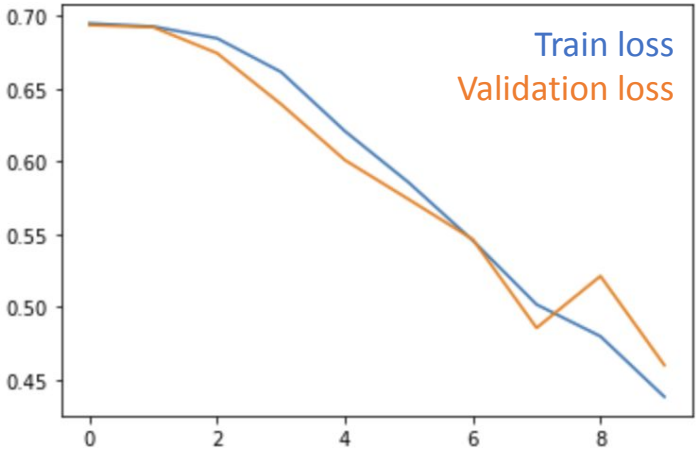


What did we do to achieve the goal?

- Data Processing
  - Train-test-split (0.25:0.75)
  - Resize image, convert to RGB, move color channels to correct spot
- Binary classification
  - Tom: {0, 1}; Jerry: {0, 1}
  - Loss Function: nn.BCEWithLogitsLoss()
  - lr = 0.001, batch_size = 500, epochs = 10
- Multi-class classification
  - {No Tom no Jerry: 0, Tom only: 1,
    Jerry only: 2, Both Tom and Jerry: 3}
  - Loss Function: nn.CrossEntropyLoss()
  - lr = 0.001, batch_size = train:8/valid:20, epochs = 10

What went well & didn't go well?

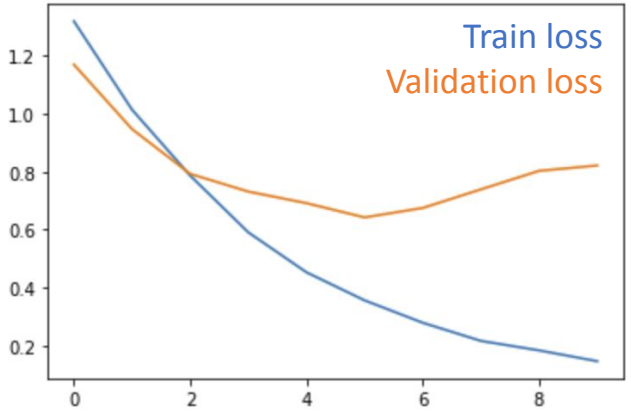
Tom Prediction Model



Train Accuracy: 0.99

Validation Accuracy: 0.93

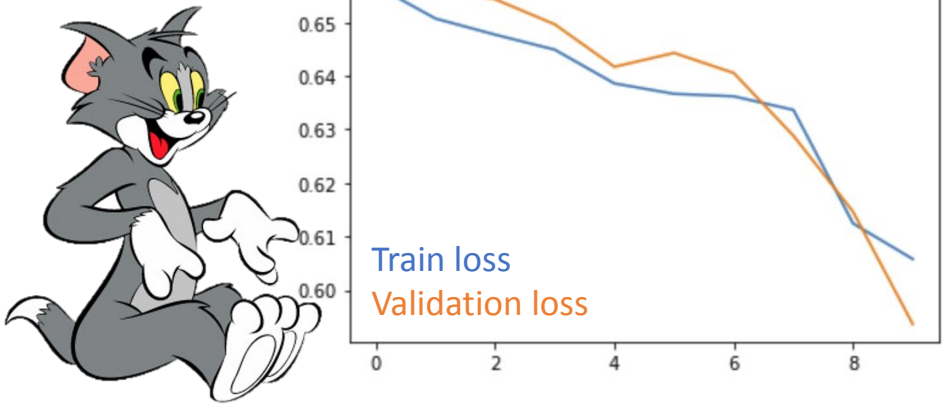
Combined Prediction Model



Train Accuracy: 0.97

Validation Accuracy: 0.80

Jerry Prediction Model



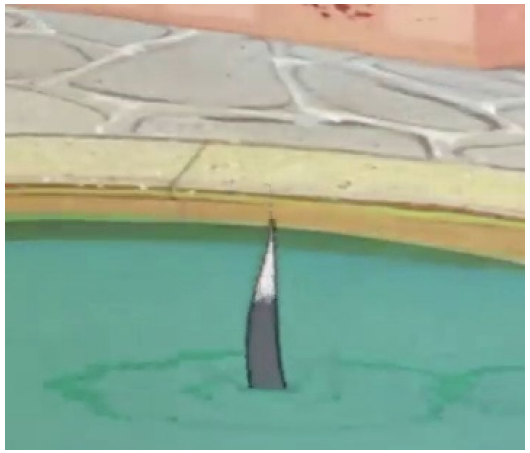
Train Accuracy: 0.99

Validation Accuracy: 0.91

Accuracy of 32 Challenged Images:

- Tom Model: 0.75 (24/32)
- Jerry Model: 0.66 (21/32)
- Combined Model: 1.00

What went well & didn't go well?



Thank you