

**Analysis of GRU Model (500-256-1) with tanh Activation function:**

## Training Accuracy

Epochs	Accuracy	FPR	TPR	AUC
3	77.3854961832061	0.1463414634146	0.691262135922	0.85290
4	79.77099236641222	0.1385767790262	0.7315175097276	0.86605022
5	78.91221374045801	0.13990610328638	0.7158098933075	0.86536250
6	80.82061068702289	0.13145539906103	0.7458777885548	0.87871295
7	80.67748091603053	0.14943609022556	0.7616279069767	0.87942558
8	82.58587786259542	0.12793979303857	0.7783155856728	0.89088490
9	83.77862595419847	0.1181988742964	0.7922330097087	0.89585193
10	83.96946564885496	0.12699905926622	0.8054211035818	0.89663767

## Validation Accuracy

Epoch	Accuracy	Fscore	Recall	Precision	AUC
3	76.8549280	0.7544065805	0.684434968	0.84031414	0.85827773
4	77.8516058	0.769585253456	0.712153518	0.83709273	0.86337732
5	78.7375415	0.783783783784	0.742004264	0.83054892	0.86120098
6	79.2912514	0.792452830188	0.761194030	0.82638888	0.86157429
7	79.6234773	0.787528868360	0.727078891	0.85894206	0.87906419
8	80.6201550	0.805771365149	0.773987206	0.84027777	0.88250322
9	78.7375415	0.784753363228	0.746268656	0.82742317	0.86359349
10	78.5160575	0.780045351474	0.733475480	0.83292978	0.86445324

**Validation Metrics for the best model:**

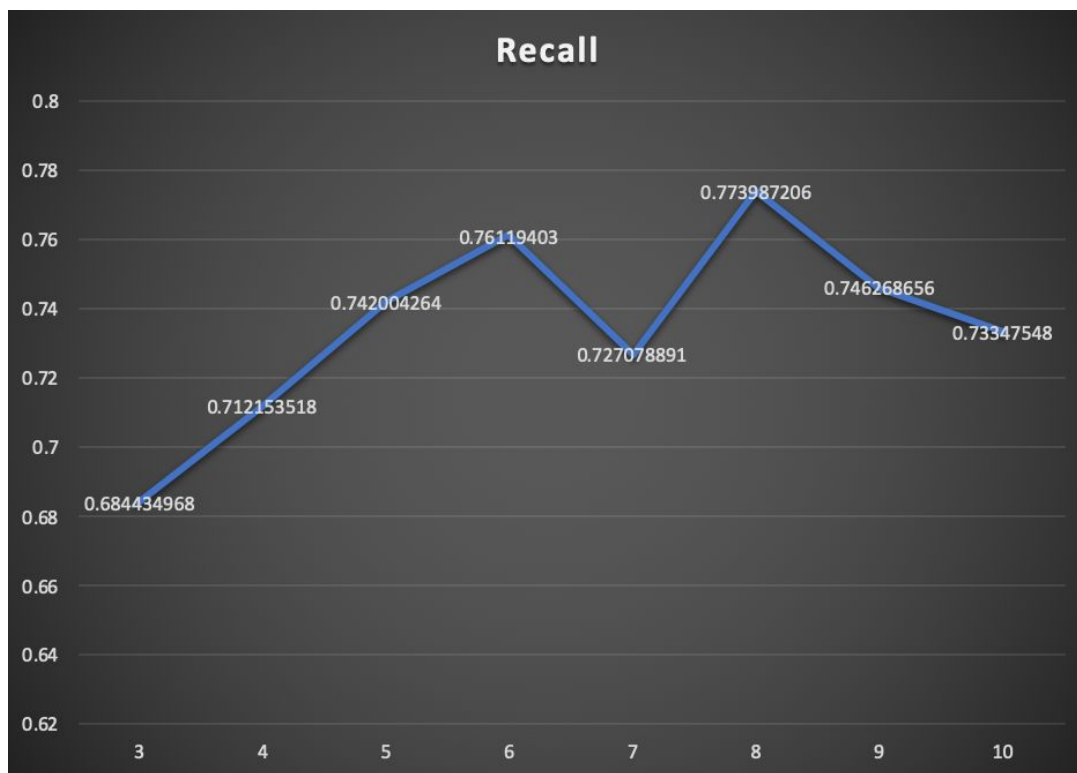
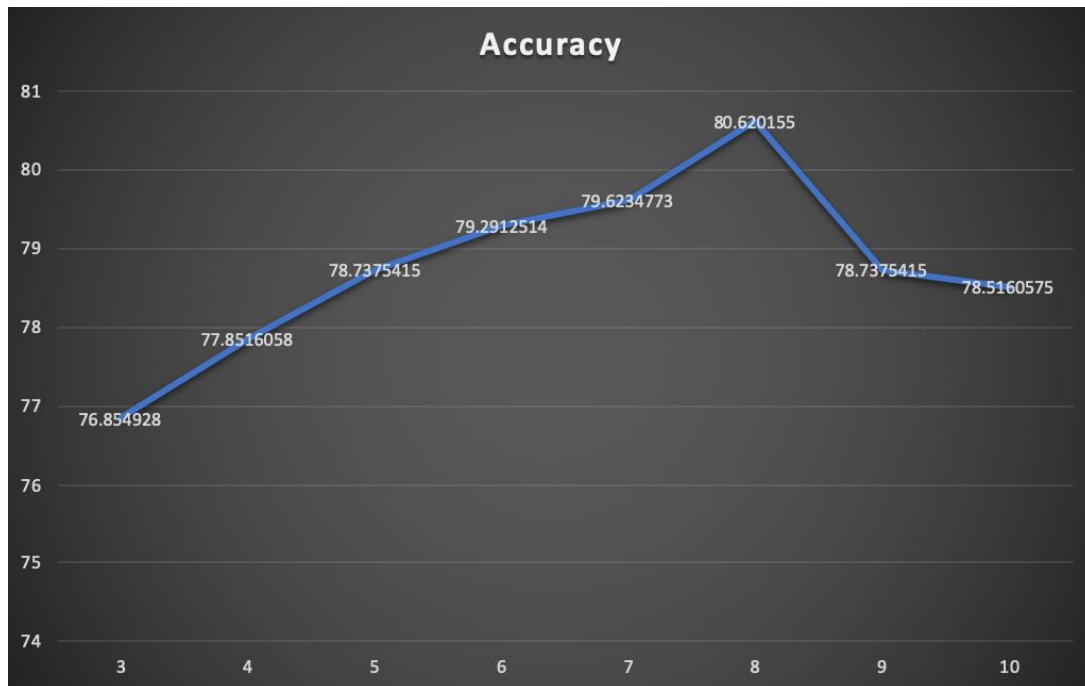
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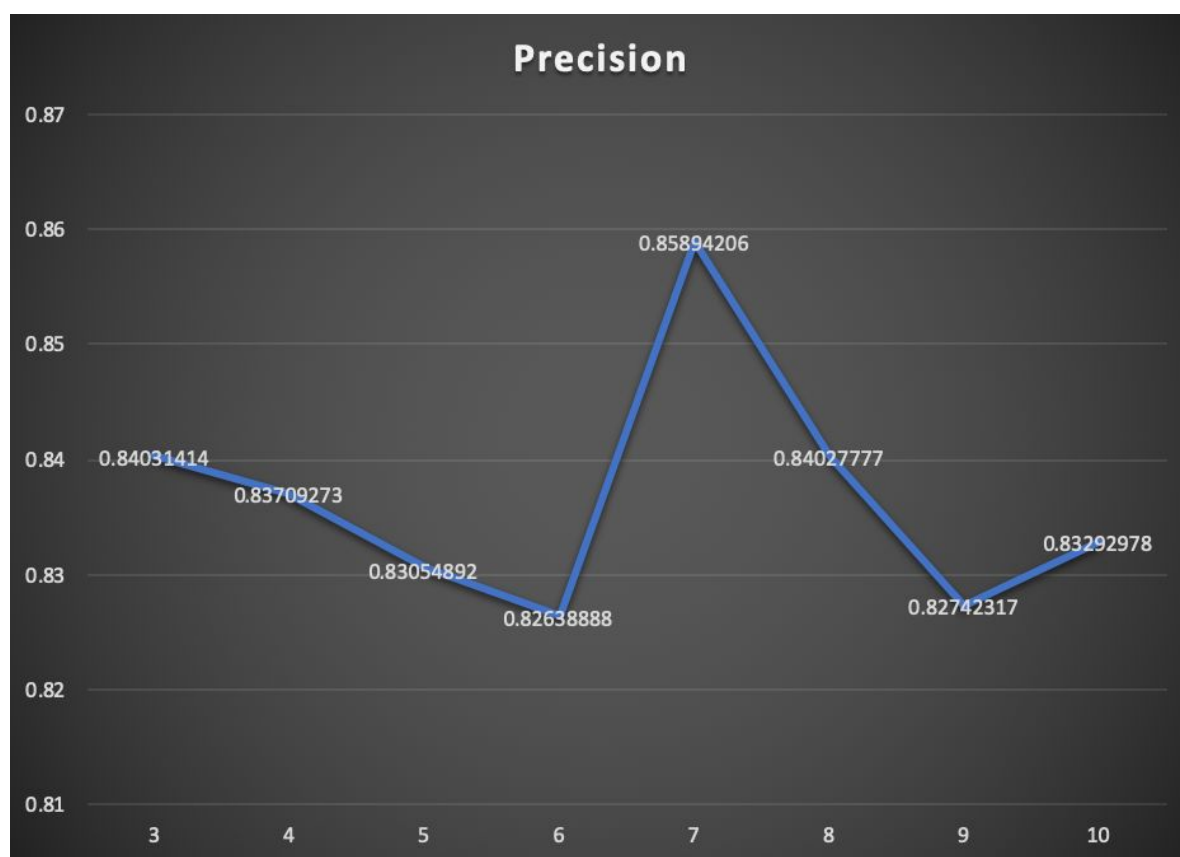
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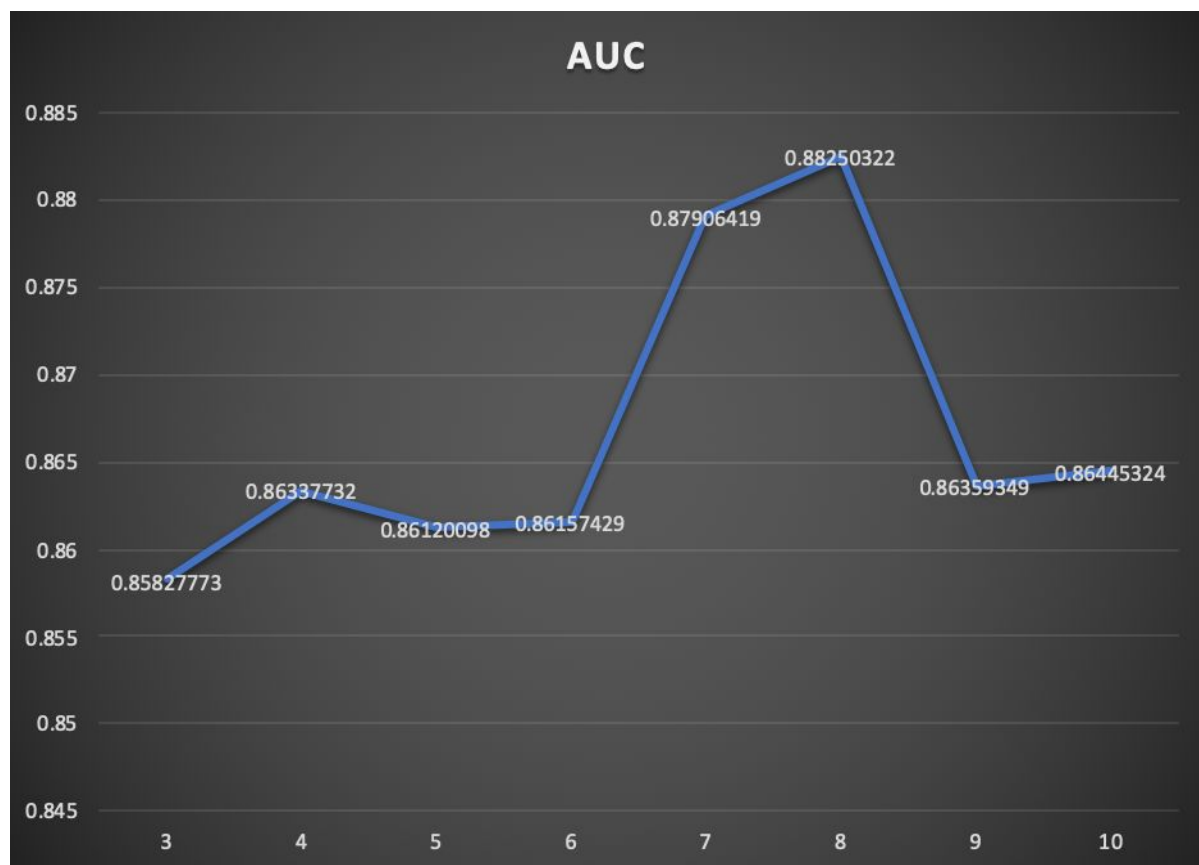
TN:360

FN:106

## Validation Graphs







### Validation Classification Report

Epoch 3

precision recall f1-score support

class 0	0.72	0.86	0.78	434
class 1	0.84	0.68	0.75	469

accuracy			0.77	903
macro avg	0.78	0.77	0.77	903
weighted avg	0.78	0.77	0.77	903

Epoch 4

precision recall f1-score support

class 0	0.73	0.85	0.79	434
class 1	0.84	0.71	0.77	469

accuracy			0.78	903
macro avg	0.78	0.78	0.78	903
weighted avg	0.79	0.78	0.78	903

Epoch 5

precision	recall	f1-score	support
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class 0	0.75	0.84	0.79	434
class 1	0.83	0.74	0.78	469

accuracy			0.79	903
macro avg	0.79	0.79	0.79	903
weighted avg	0.79	0.79	0.79	903

Epoch 6

precision	recall	f1-score	support
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class 0	0.76	0.83	0.79	434
class 1	0.83	0.76	0.79	469

accuracy			0.79	903
macro avg	0.79	0.79	0.79	903
weighted avg	0.80	0.79	0.79	903

Epoch 7

precision	recall	f1-score	support
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class 0	0.75	0.87	0.80	434
class 1	0.86	0.73	0.79	469

accuracy			0.80	903
macro avg	0.80	0.80	0.80	903
weighted avg	0.81	0.80	0.80	903

Epoch 8

precision	recall	f1-score	support
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class 0	0.77	0.84	0.81	434
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class 1	0.84	0.77	0.81	469
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accuracy			0.81	903
macro avg	0.81	0.81	0.81	903
weighted avg	0.81	0.81	0.81	903

Epoch 9

precision	recall	f1-score	support
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class 0	0.75	0.83	0.79	434
class 1	0.83	0.75	0.78	469

accuracy			0.79	903
macro avg	0.79	0.79	0.79	903
weighted avg	0.79	0.79	0.79	903

Epoch 10

precision	recall	f1-score	support
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class 0	0.74	0.84	0.79	434
class 1	0.83	0.73	0.78	469

accuracy			0.79	903
macro avg	0.79	0.79	0.79	903
weighted avg	0.79	0.79	0.78	903