

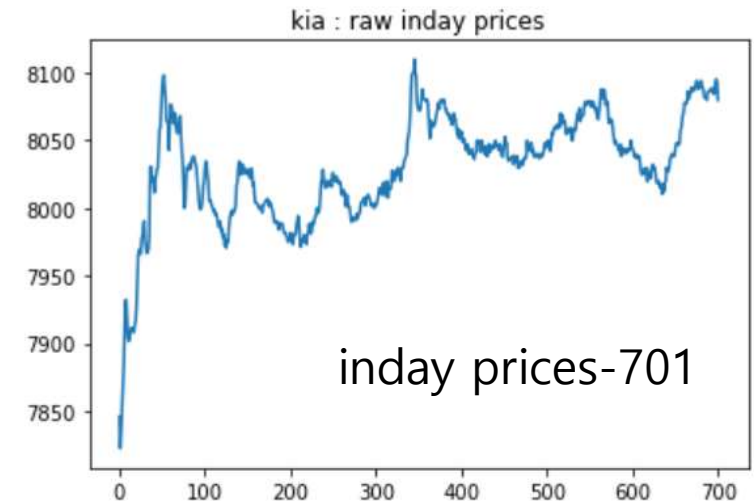
ML : inday prices-701

머신러닝 목표

- 하루의 주가 변화 시계열이 무엇을 예측할 수 있는가?
 - 'C1O1', 'C2O1', 'O2C1', 'C2C1', 'C2O2'
- 문제점
 - Normalization or rescaling of time series

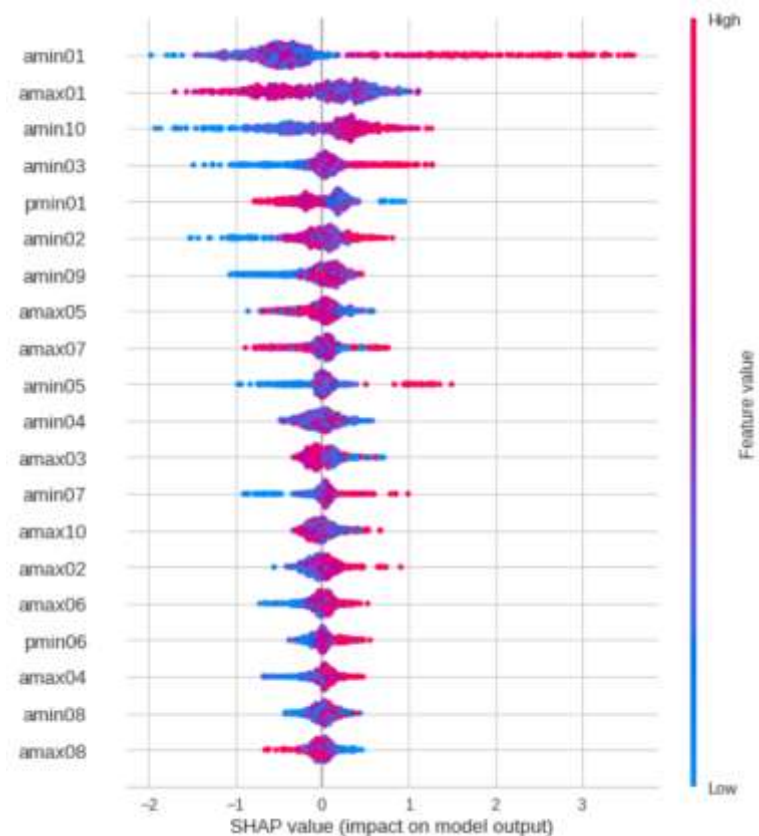
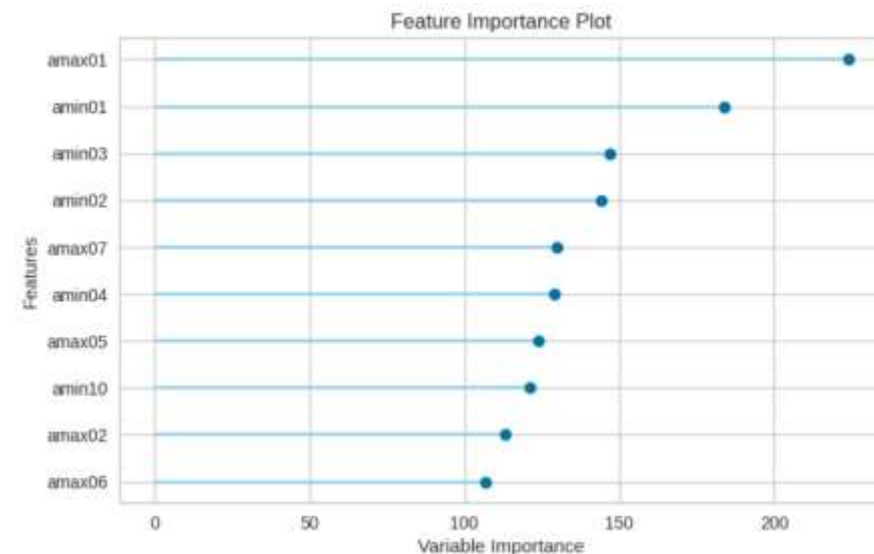
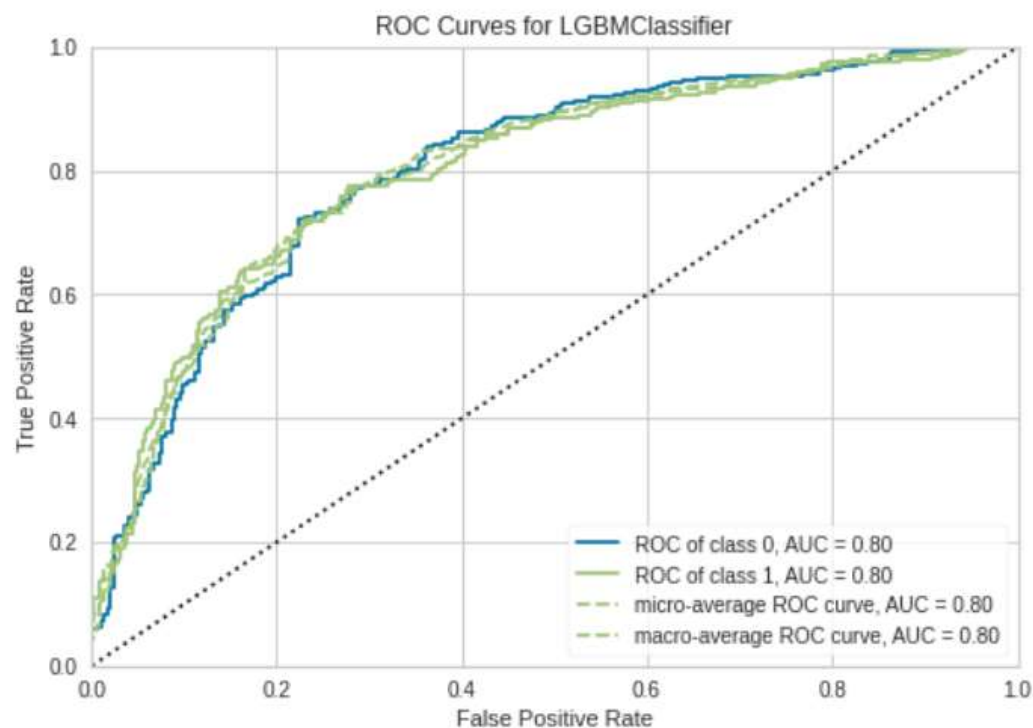
Stock 10 Y

- period
 - 2009-03-23 ~ 2018-05-30



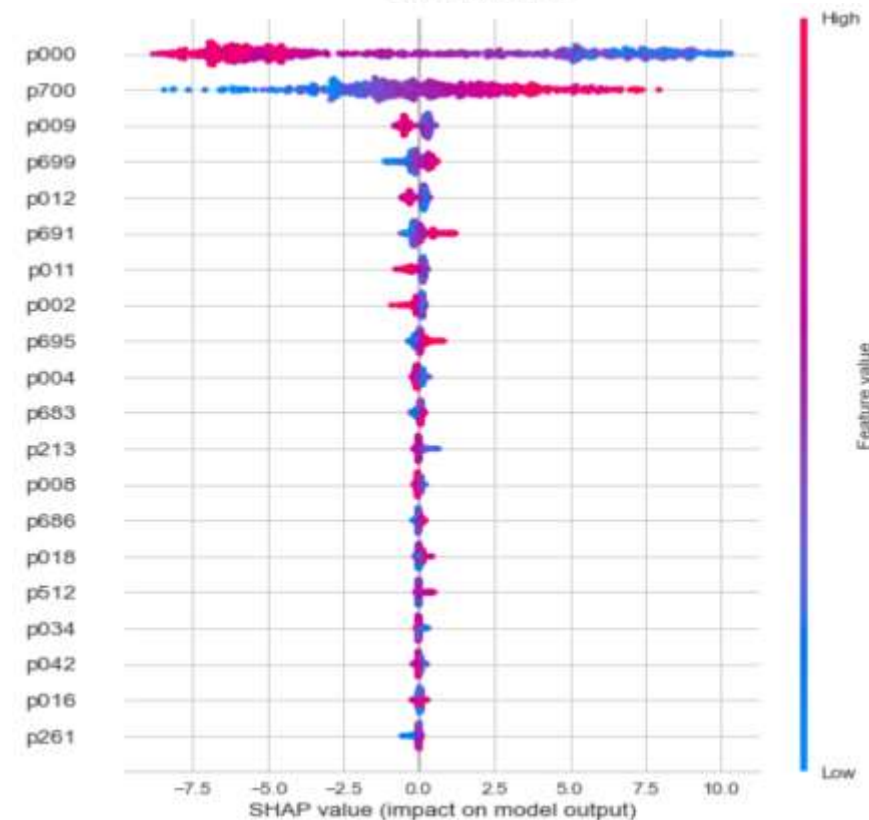
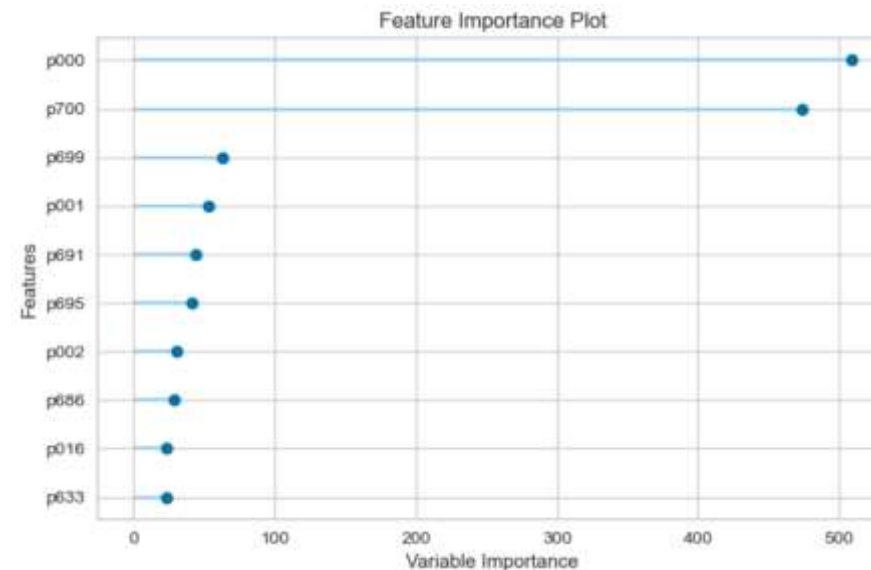
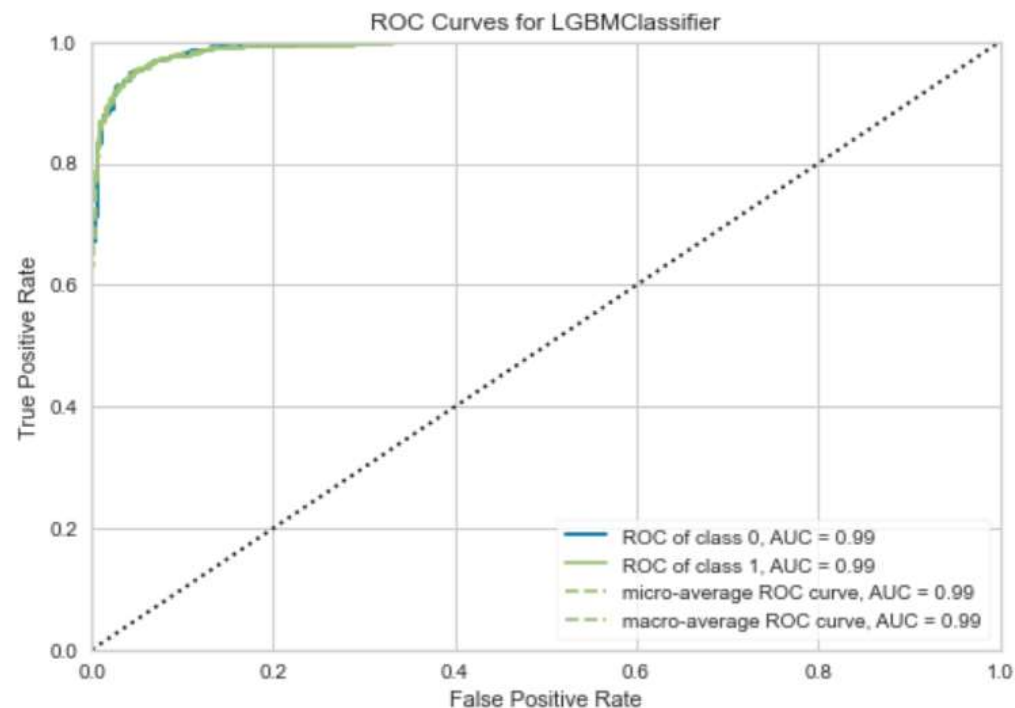
Kia-act-max-min

| | C101 | C201 | 02C1 | C2C1 | C202 |
|------------------|--------|--------|--------|--------|--------|
| model-ACC | rf | rf | nb | nb | gbc |
| acc | 0.7065 | 0.6226 | 0.5624 | 0.5314 | 0.5631 |
| model-AUC | lgbm | rf | nb | nb | lgbm |
| auc | 0.7806 | 0.6802 | 0.5851 | 0.54 | 0.5548 |



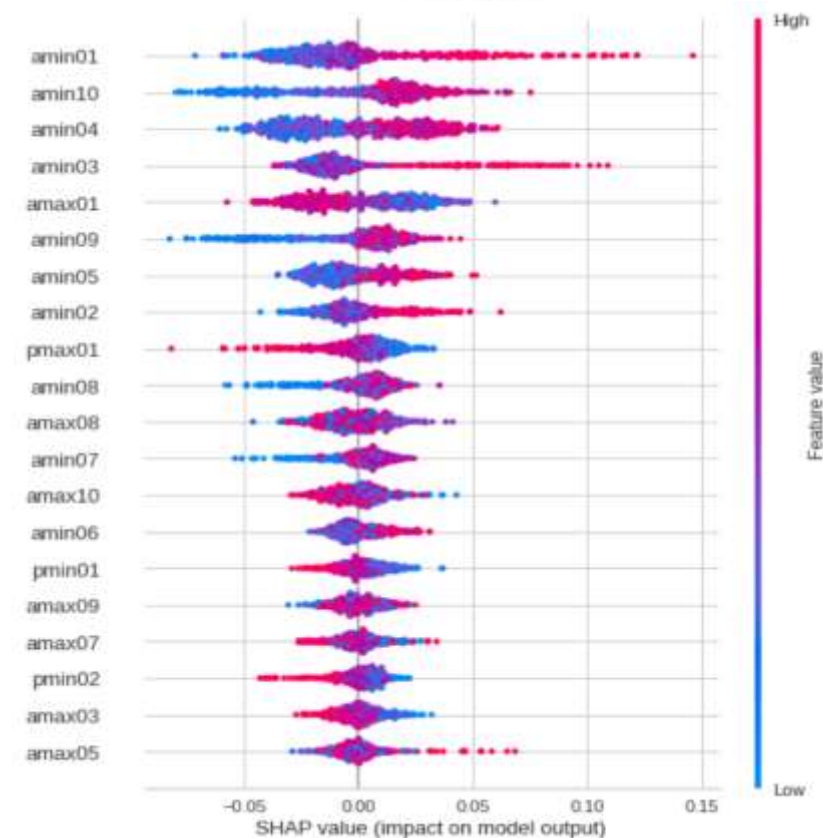
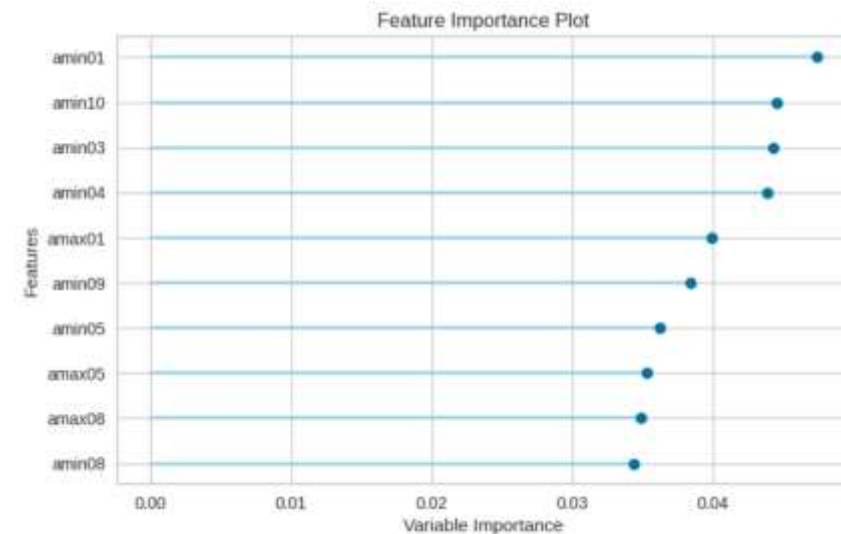
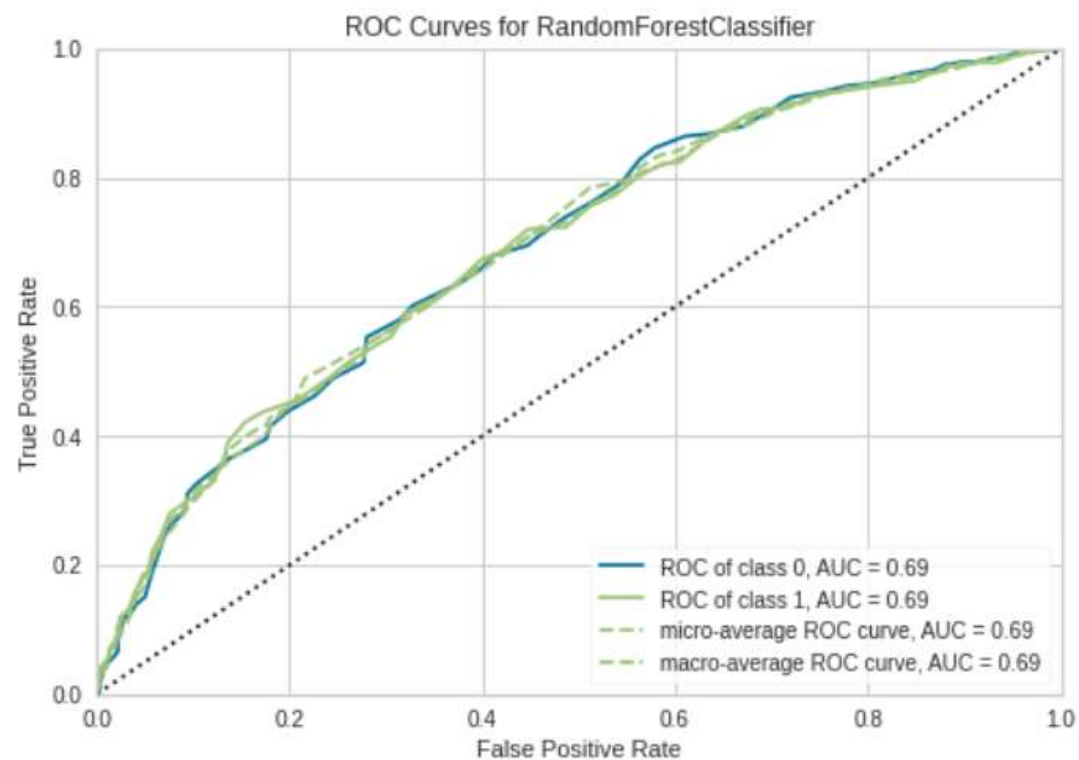
Kia-prices-701

| | C101 | C201 | O2C1 | C2C1 | C202 |
|-----------|--------|--------|--------|--------|--------|
| model-ACC | lgbm | rf | nb | ridge | qda |
| acc | 0.9524 | 0.727 | 0.5439 | 0.5472 | 0.5525 |
| model-AUC | lgbm | et | nb | lr | lr |
| auc | 0.9905 | 0.8037 | 0.5504 | 0.5572 | 0.5232 |



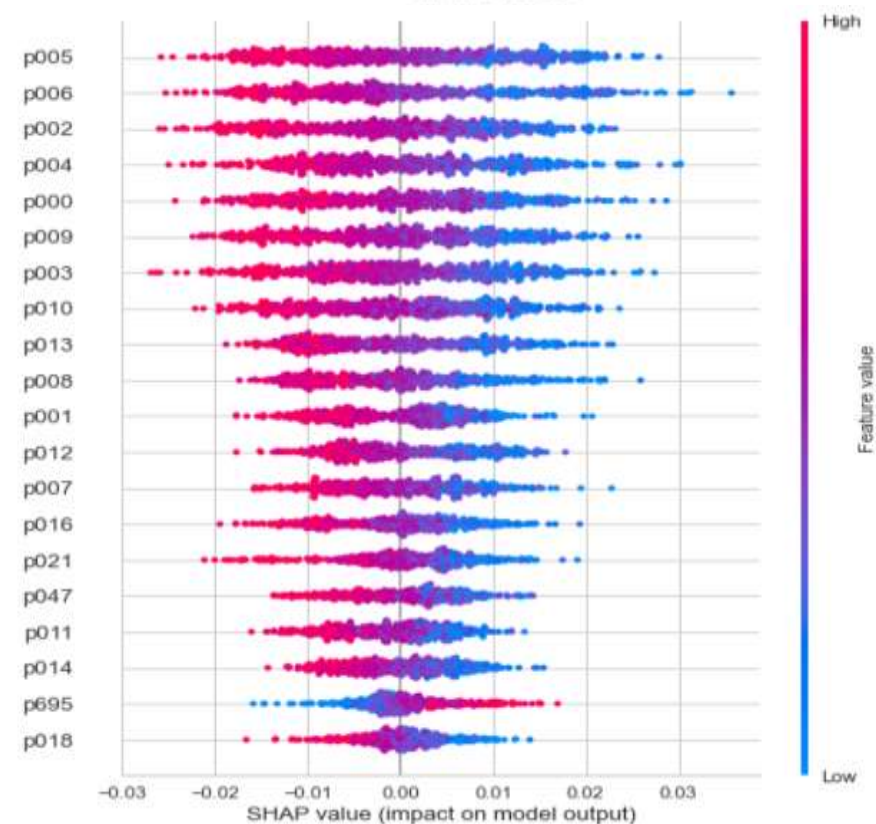
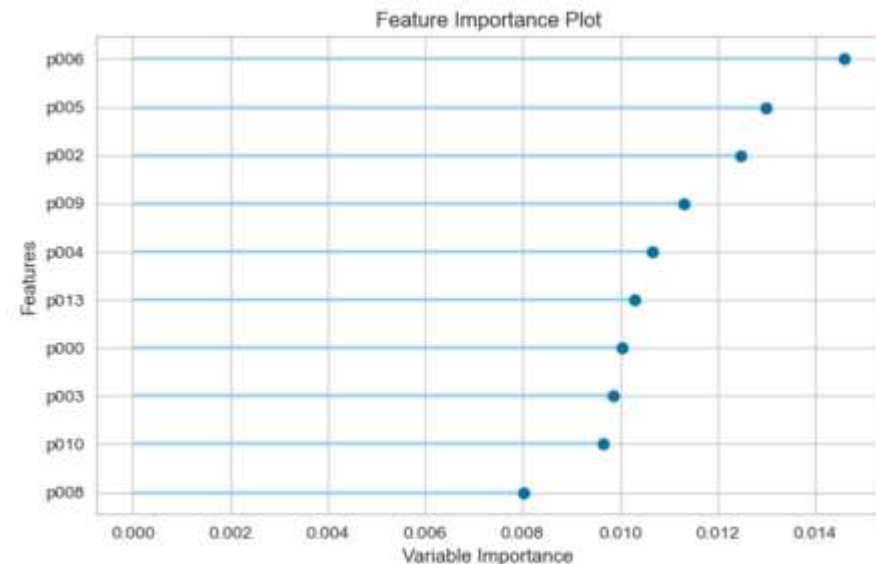
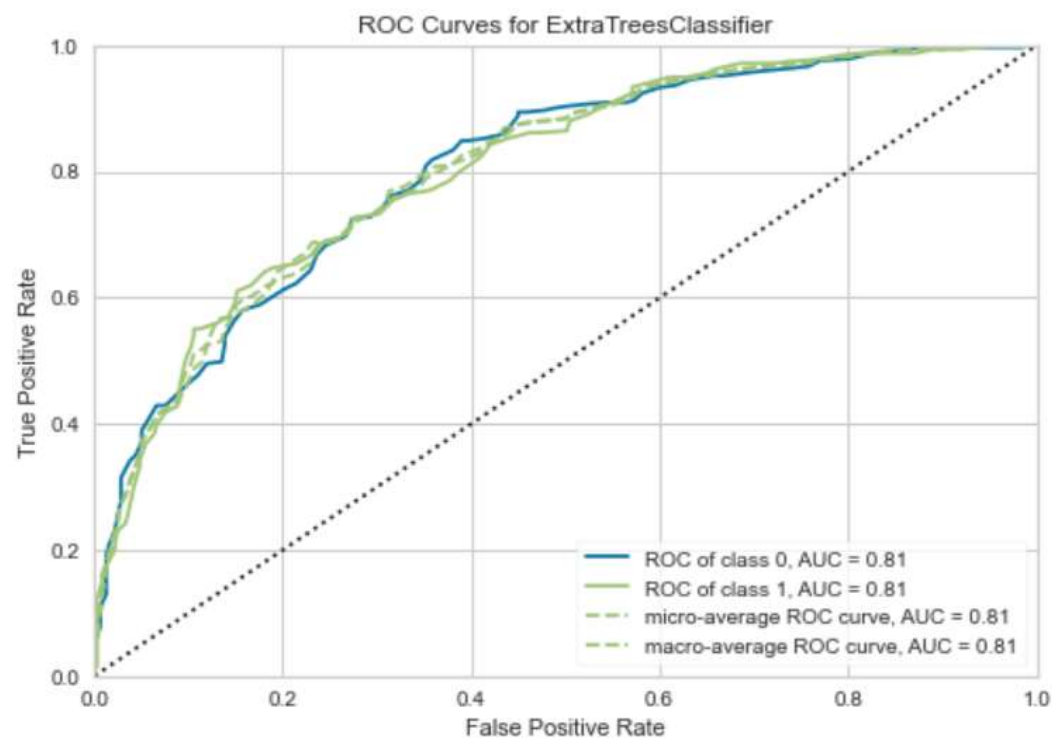
Kia-act-max-min

| | C101 | C201 | 02C1 | C2C1 | C202 |
|------------------|--------|--------|--------|--------|--------|
| model-ACC | rf | rf | nb | nb | gbc |
| acc | 0.7065 | 0.6226 | 0.5624 | 0.5314 | 0.5631 |
| model-AUC | lgbm | rf | nb | nb | lgbm |
| auc | 0.7806 | 0.6802 | 0.5851 | 0.54 | 0.5548 |



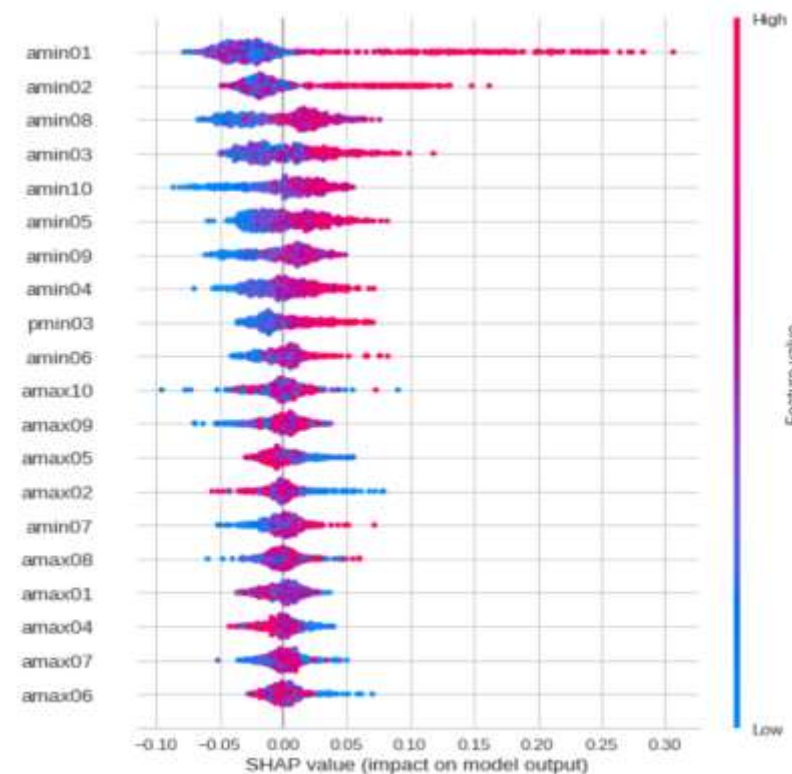
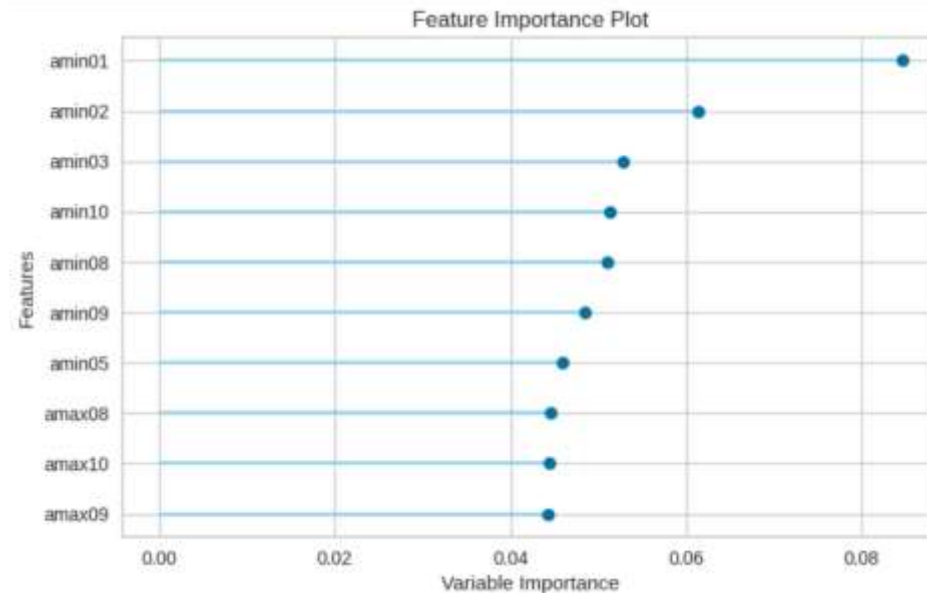
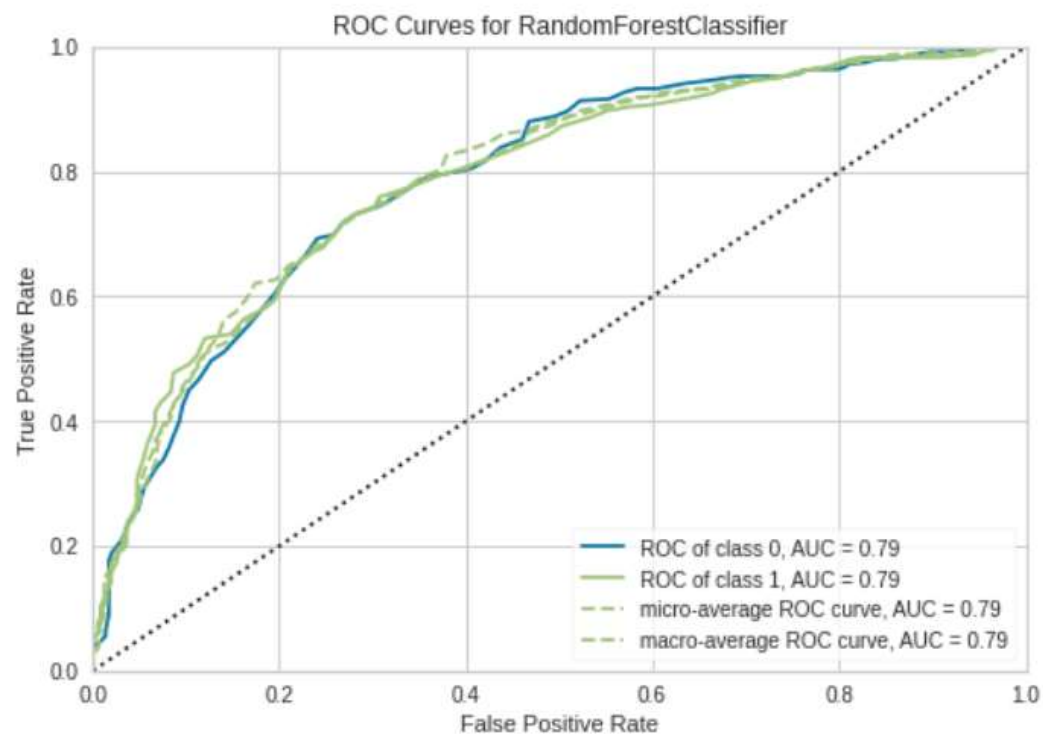
Kia-prices-701

| | C101 | C201 | O2C1 | C2C1 | C202 |
|-----------|--------|--------|--------|--------|--------|
| model-ACC | lgbm | rf | nb | ridge | qda |
| acc | 0.9524 | 0.727 | 0.5439 | 0.5472 | 0.5525 |
| model-AUC | lgbm | et | nb | lr | lr |
| auc | 0.9905 | 0.8037 | 0.5504 | 0.5572 | 0.5232 |



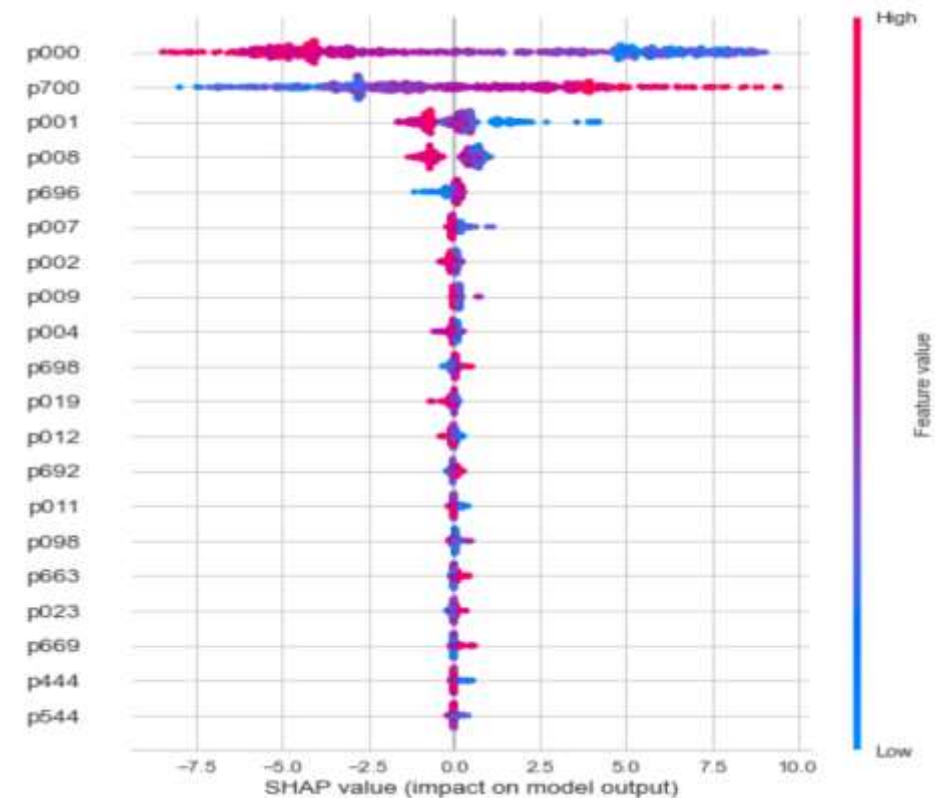
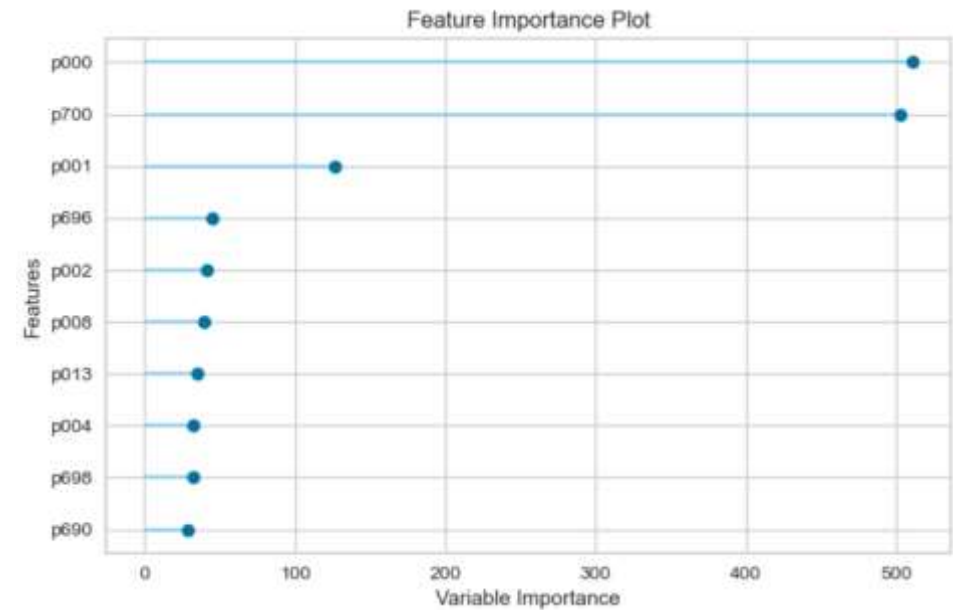
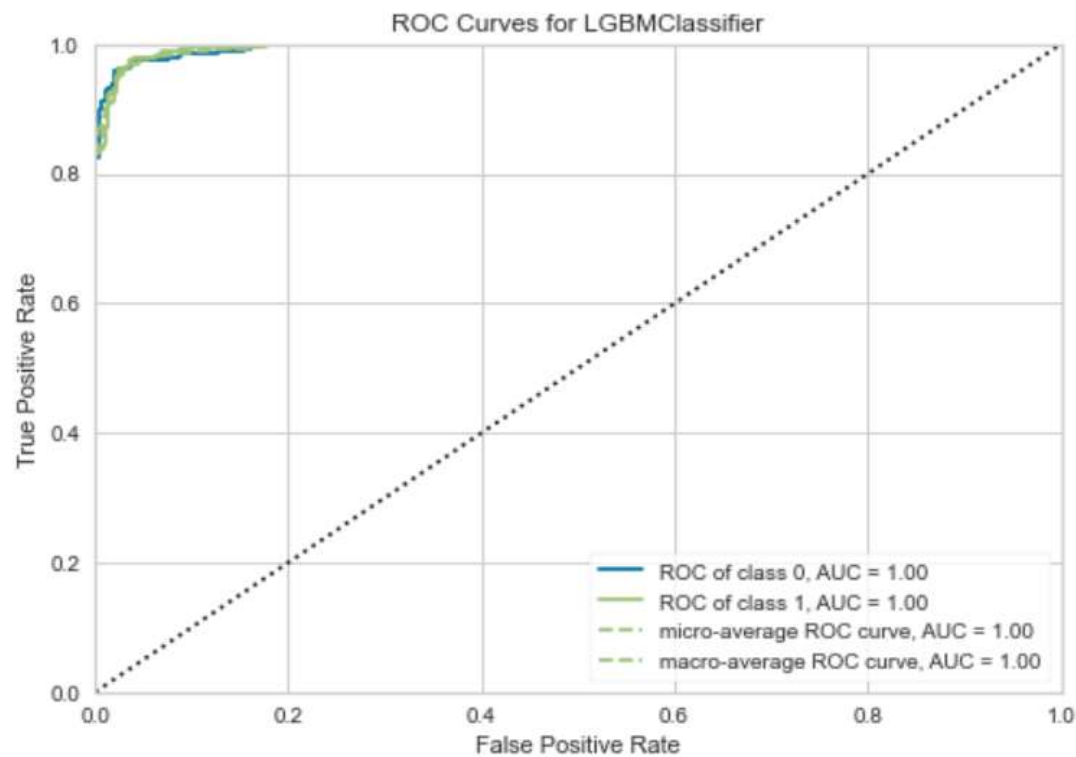
Hynix-act-max-min

| | C101 | C201 | 02C1 | C2C1 | C202 |
|------------------|--------|--------|--------|--------|--------|
| model-ACC | rf | qda | lr | knn | ada |
| acc | 0.7231 | 0.6167 | 0.5684 | 0.5221 | 0.538 |
| model-AUC | rf | rf | nb | gbc | ada |
| auc | 0.793 | 0.6531 | 0.5516 | 0.5214 | 0.5067 |



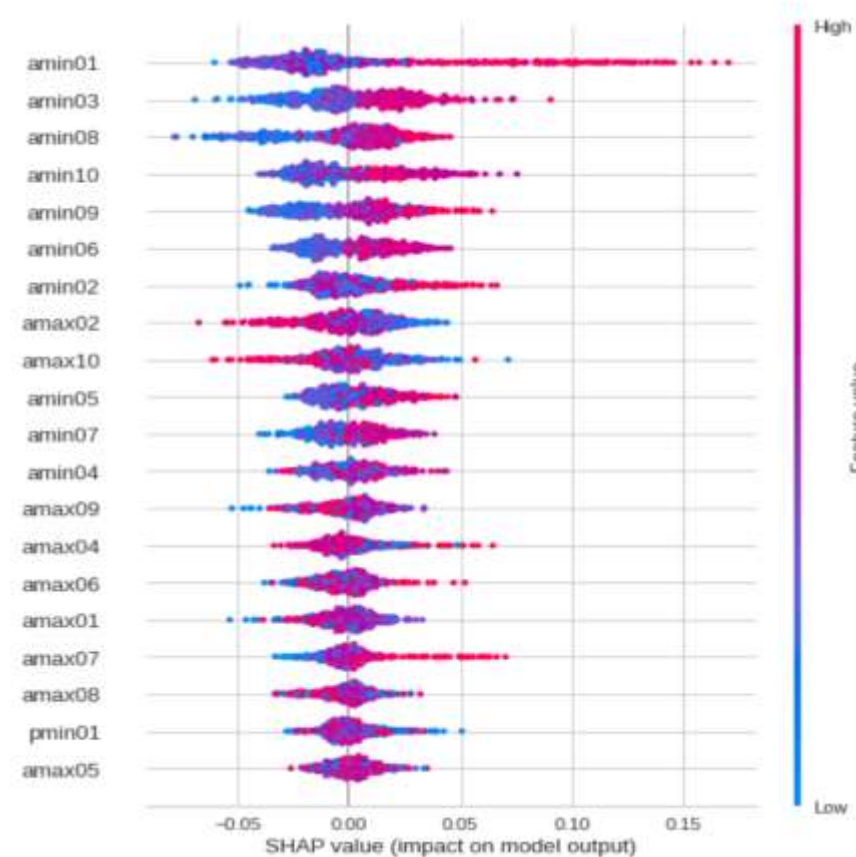
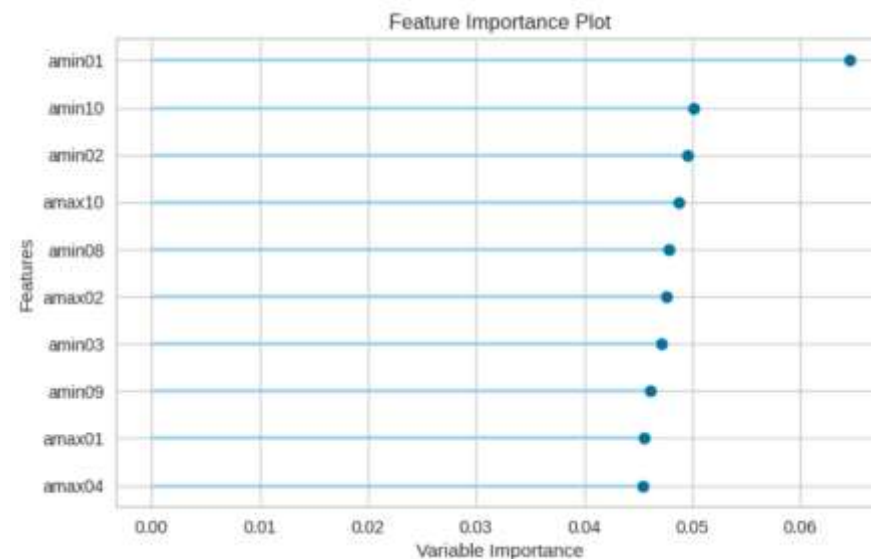
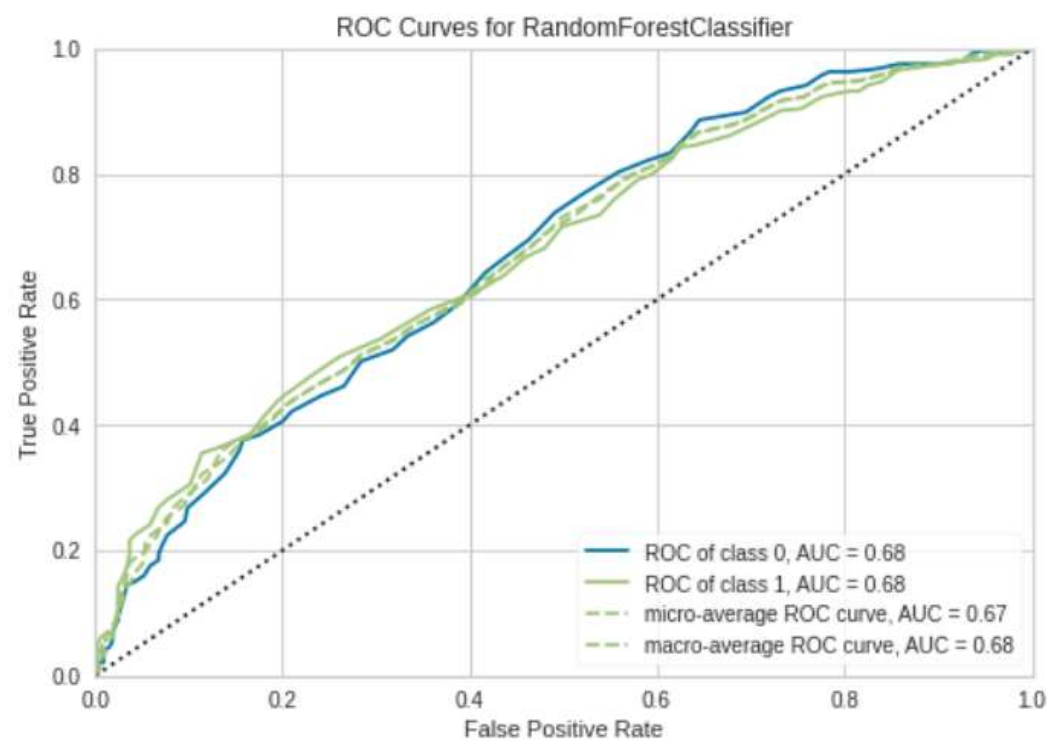
Hynix-prices-701

| | C101 | C201 | O2C1 | C2C1 | C202 |
|-----------|--------|--------|--------|--------|--------|
| model-ACC | gbc | lgbm | qda | lr | qda |
| acc | 0.9537 | 0.694 | 0.5671 | 0.5334 | 0.5598 |
| model-AUC | lgbm | gbc | lgbm | lr | dt |
| auc | 0.9922 | 0.7707 | 0.541 | 0.5227 | 0.512 |



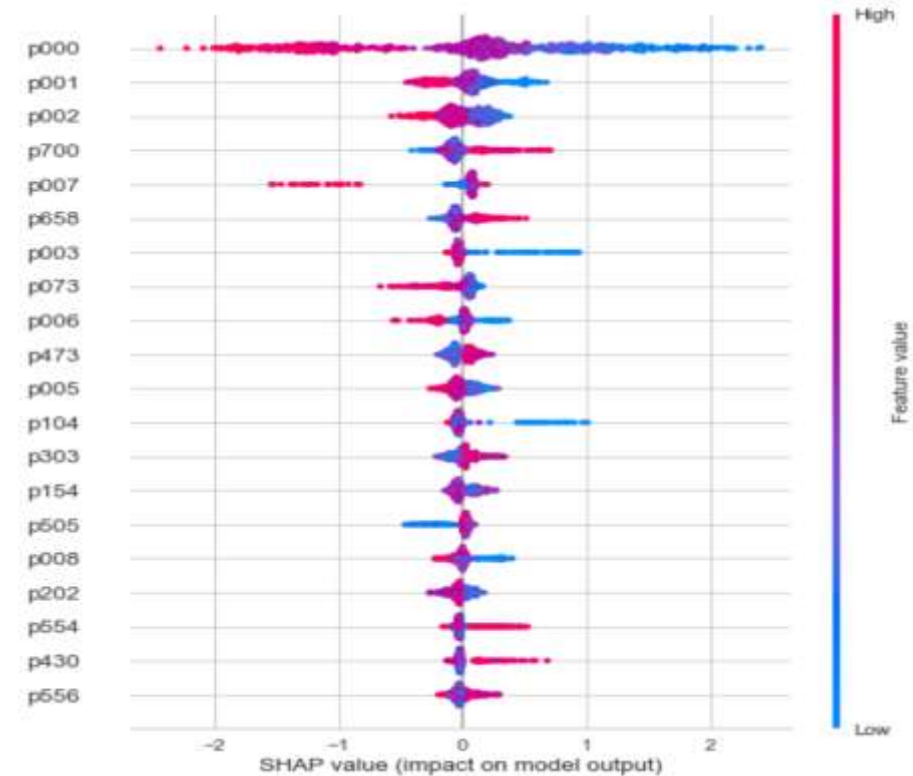
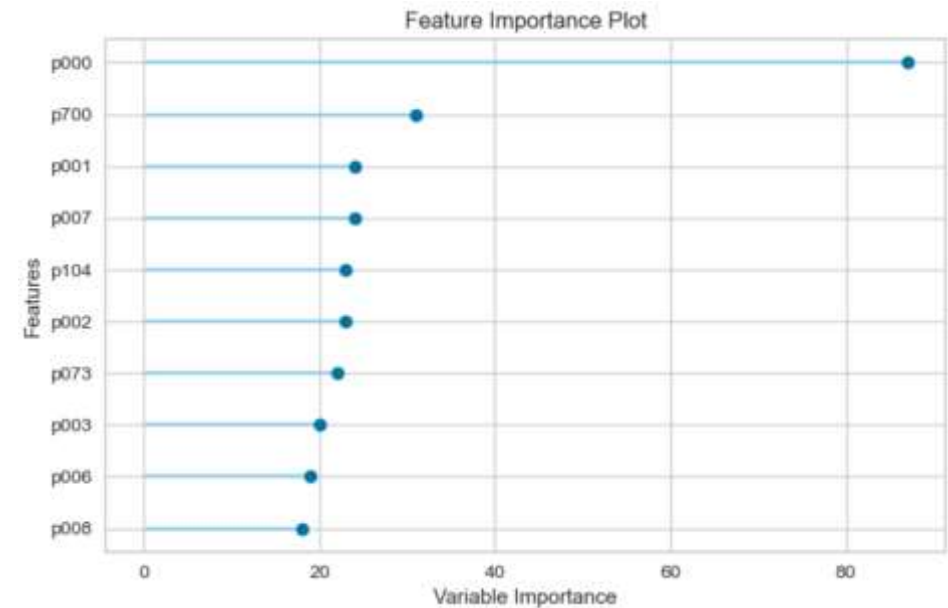
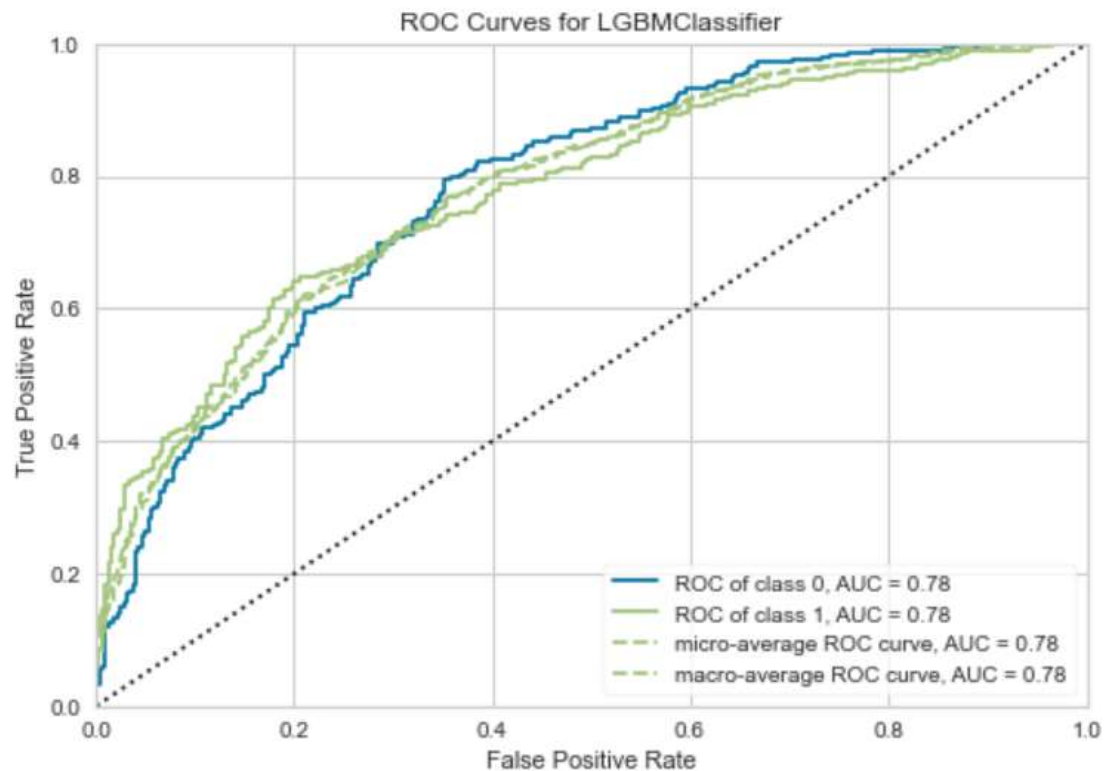
Hynix-act-max-min

| | C101 | C201 | 02C1 | C2C1 | C202 |
|------------------|--------|--------|--------|--------|--------|
| model-ACC | rf | qda | lr | knn | ada |
| acc | 0.7231 | 0.6167 | 0.5684 | 0.5221 | 0.538 |
| model-AUC | rf | rf | nb | gbc | ada |
| auc | 0.793 | 0.6531 | 0.5516 | 0.5214 | 0.5067 |



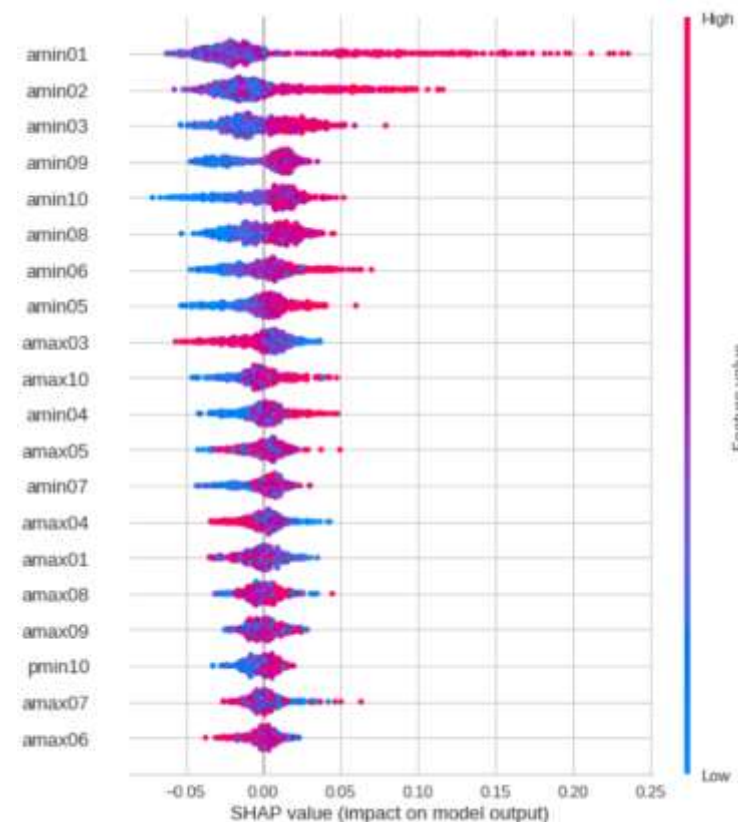
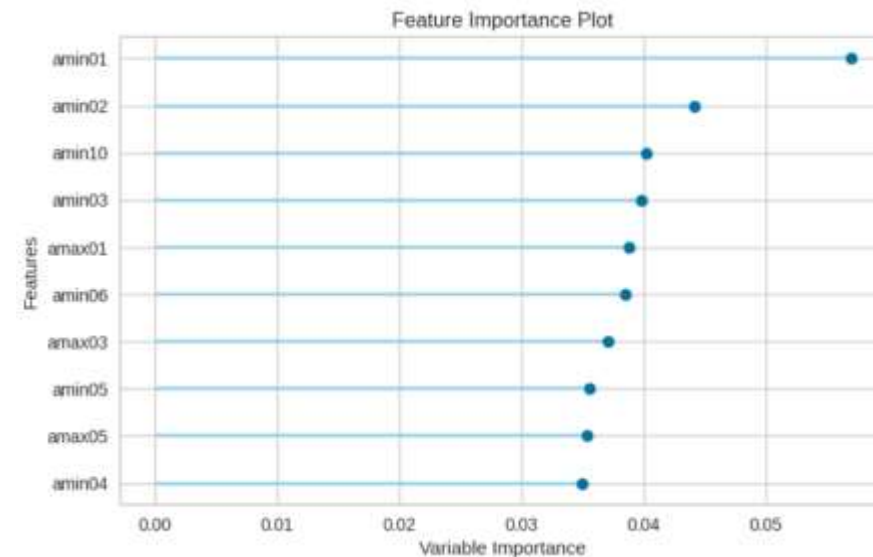
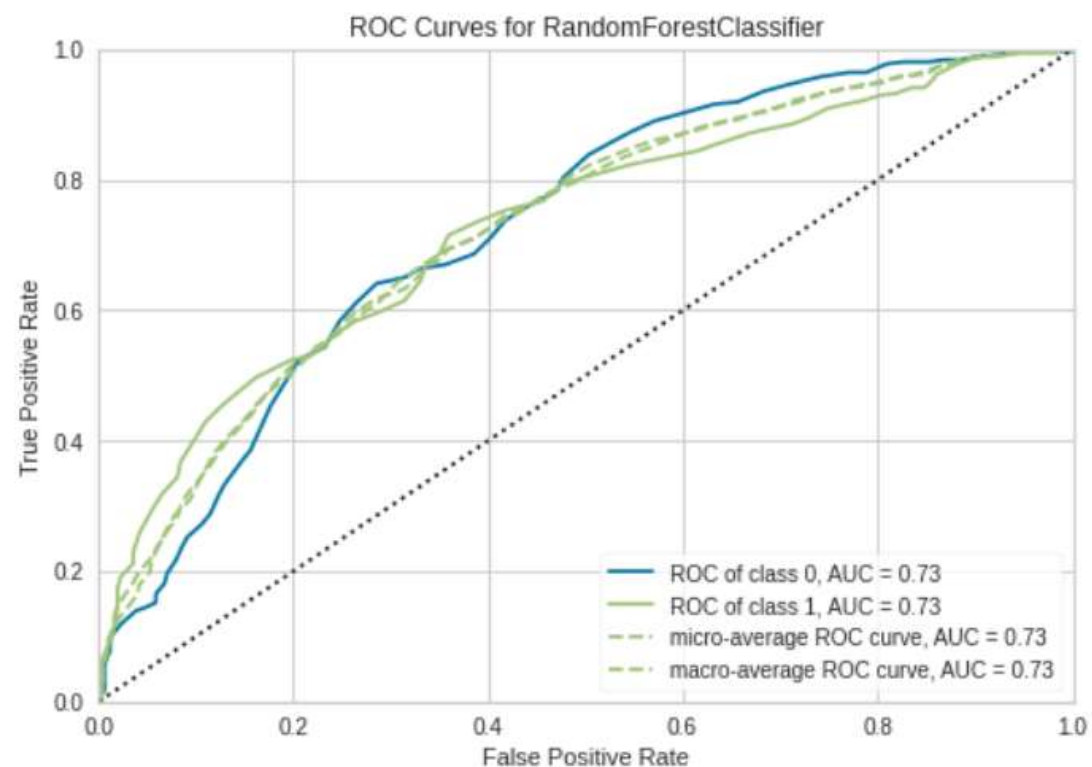
Hynix-prices-701

| | C101 | C201 | O2C1 | C2C1 | C202 |
|-----------|--------|--------|--------|--------|--------|
| model-ACC | gbc | lgbm | qda | lr | qda |
| acc | 0.9537 | 0.694 | 0.5671 | 0.5334 | 0.5598 |
| model-AUC | lgbm | gbc | lgbm | lr | dt |
| auc | 0.9922 | 0.7707 | 0.541 | 0.5227 | 0.512 |



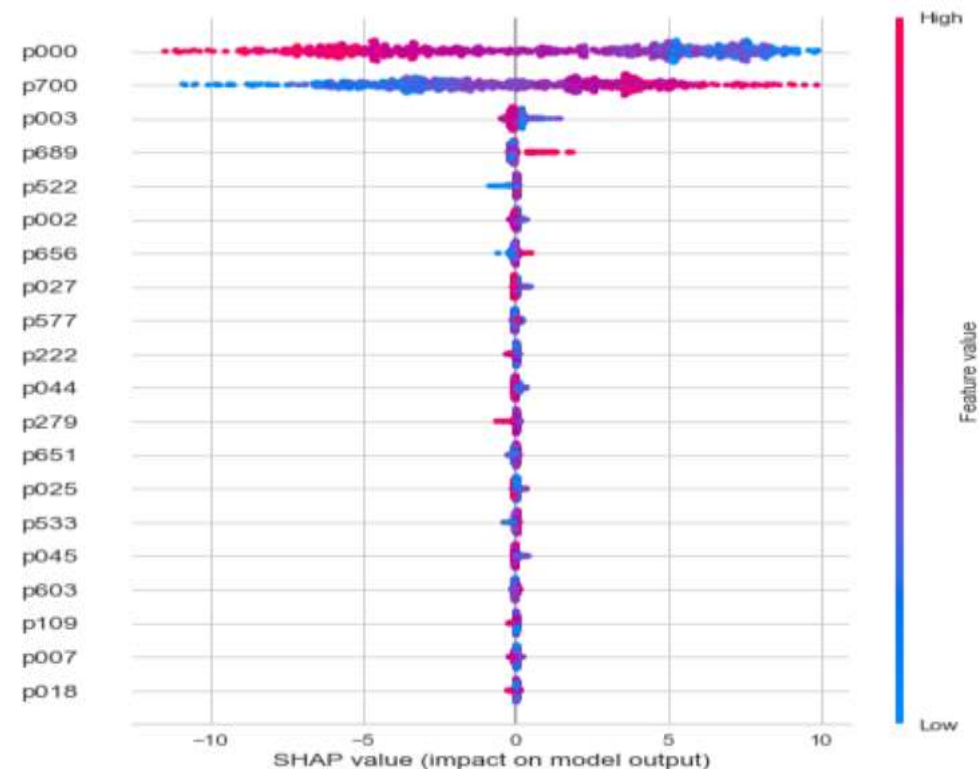
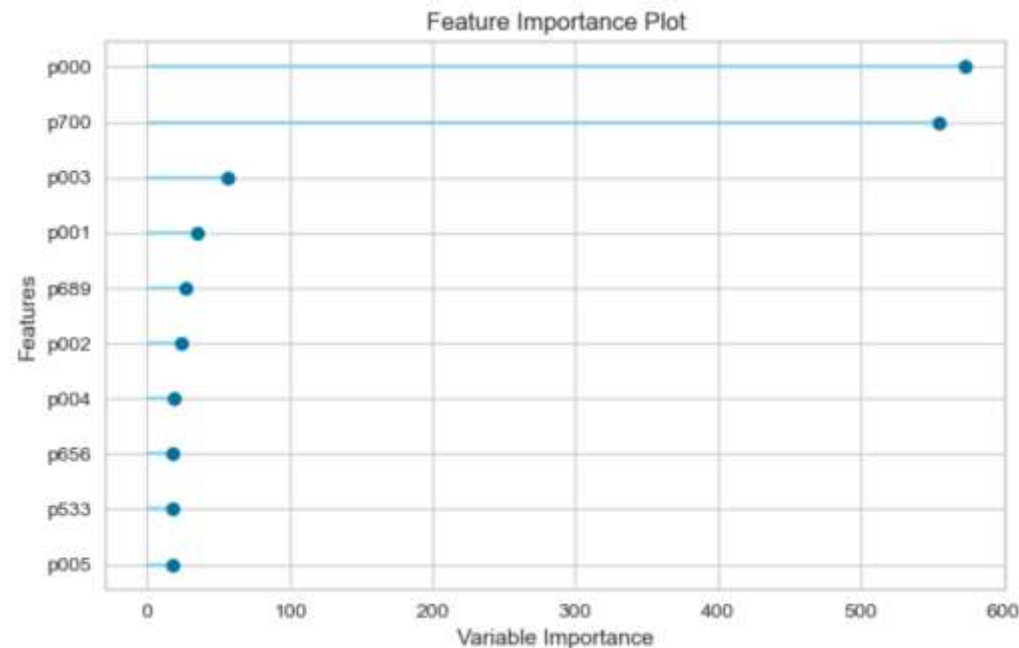
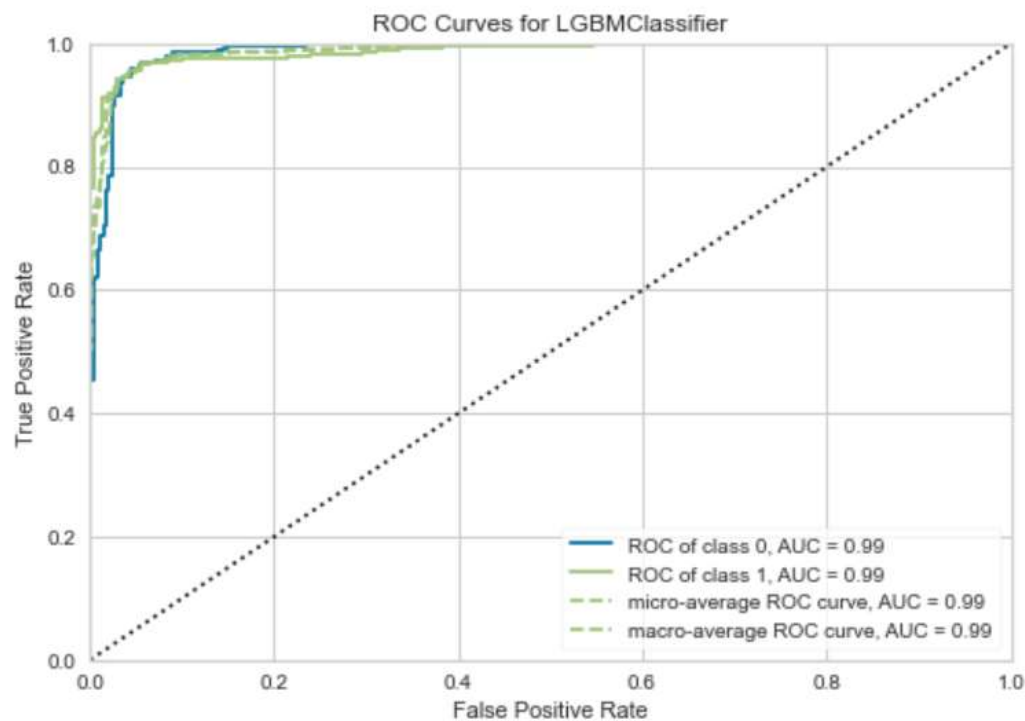
TKco-act-max-min

| | C101 | C201 | 02C1 | C2C1 | C202 |
|------------------|--------|--------|--------|--------|--------|
| model-ACC | rf | rf | et | et | dt |
| acc | 0.6518 | 0.6226 | 0.6252 | 0.5472 | 0.5314 |
| model-AUC | rf | et | nb | et | et |
| auc | 0.7024 | 0.6712 | 0.5361 | 0.5486 | 0.5406 |



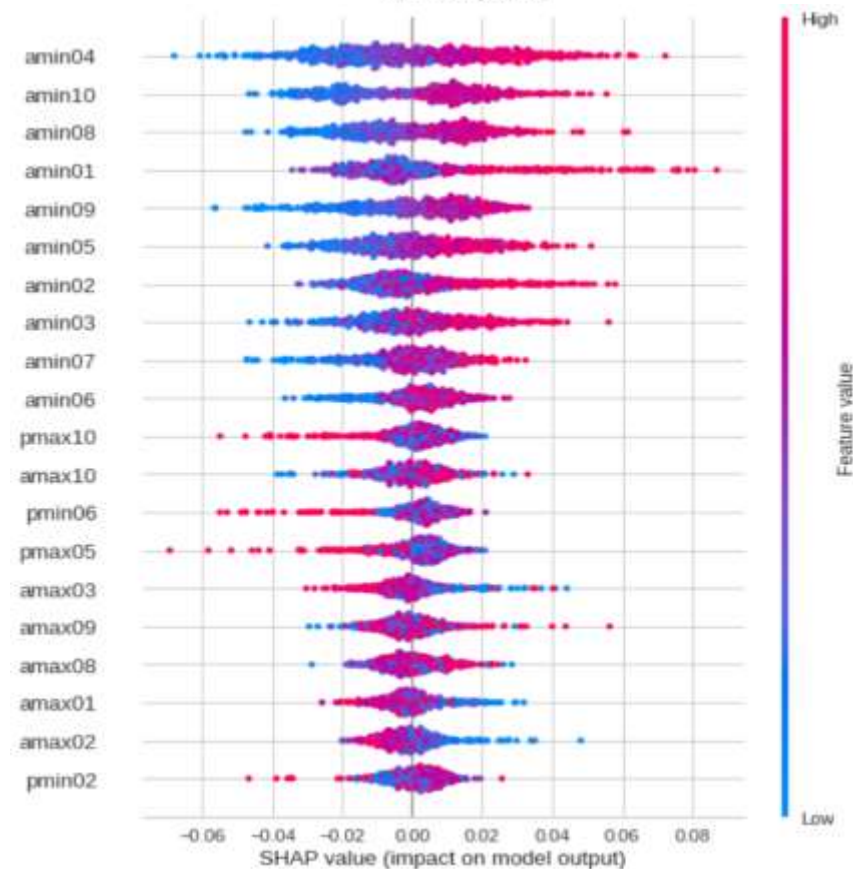
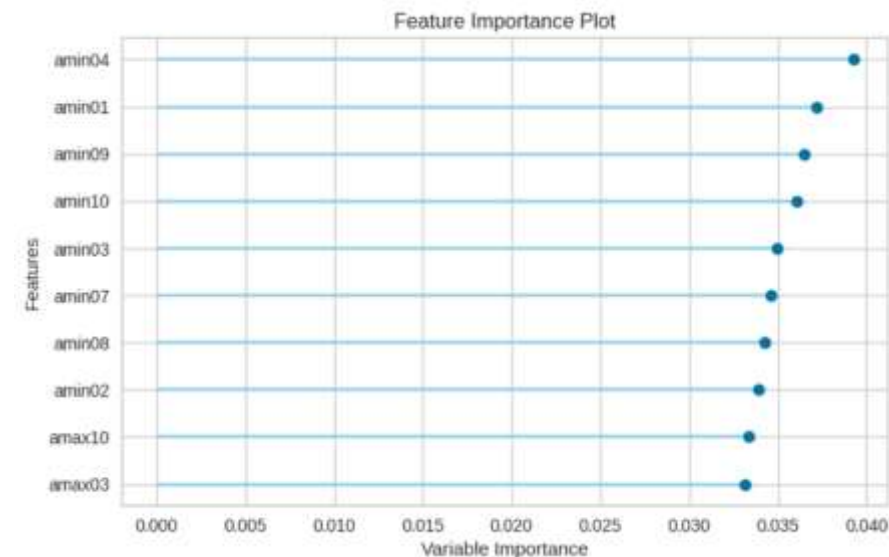
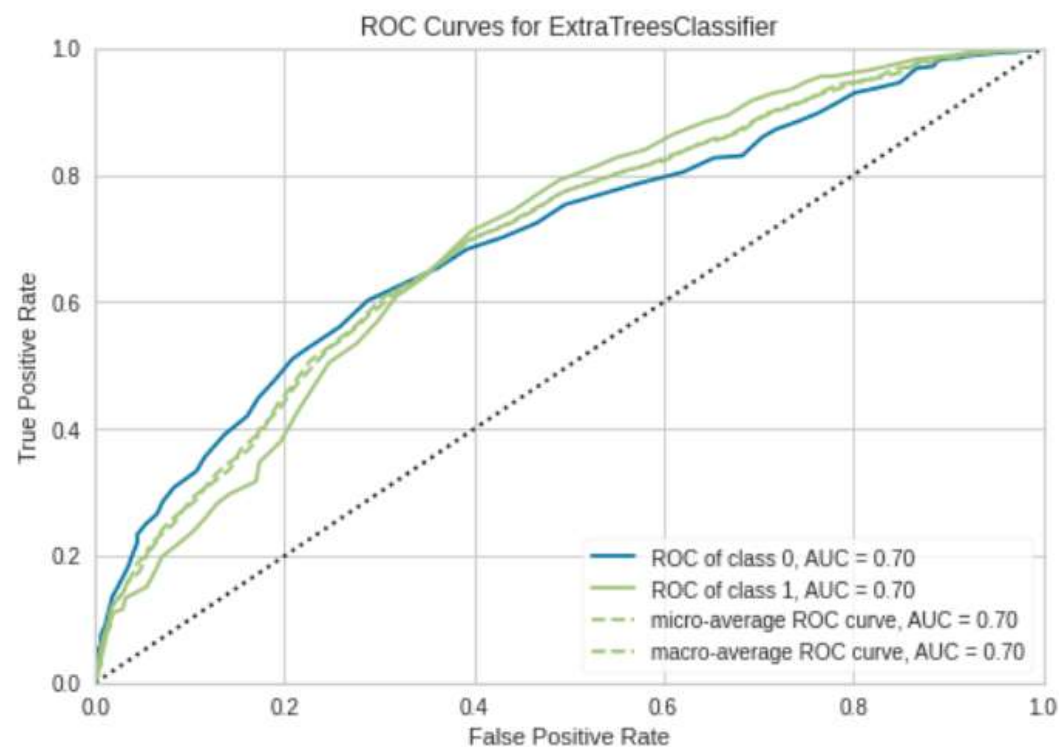
TKco-prices-701

| | C101 | C201 | O2C1 | C2C1 | C202 |
|-----------|--------|--------|--------|--------|--------|
| model-ACC | gbc | gbc | qda | nb | lda |
| acc | 0.9584 | 0.7417 | 0.6266 | 0.5347 | 0.5109 |
| model-AUC | lgbm | gbc | gbc | nb | nb |
| auc | 0.991 | 0.8137 | 0.5532 | 0.5239 | 0.5104 |



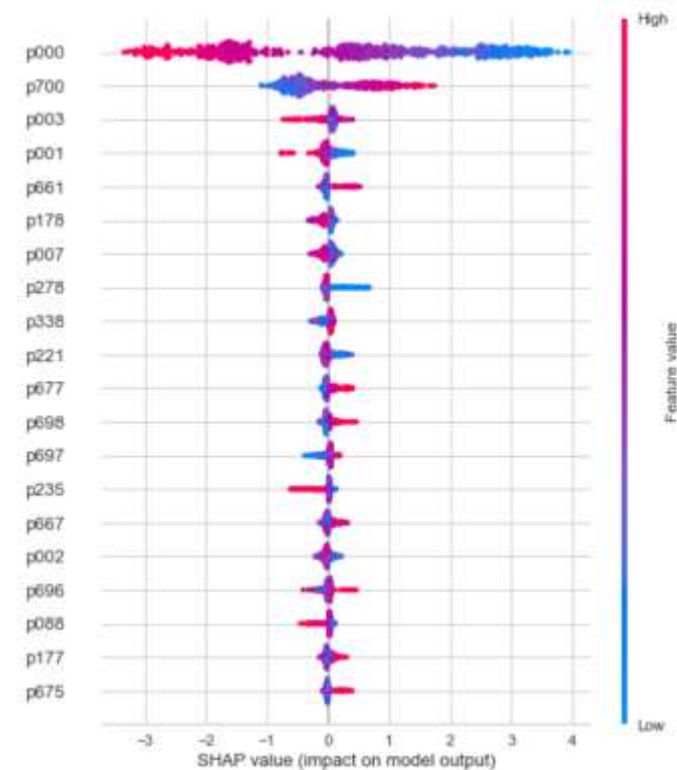
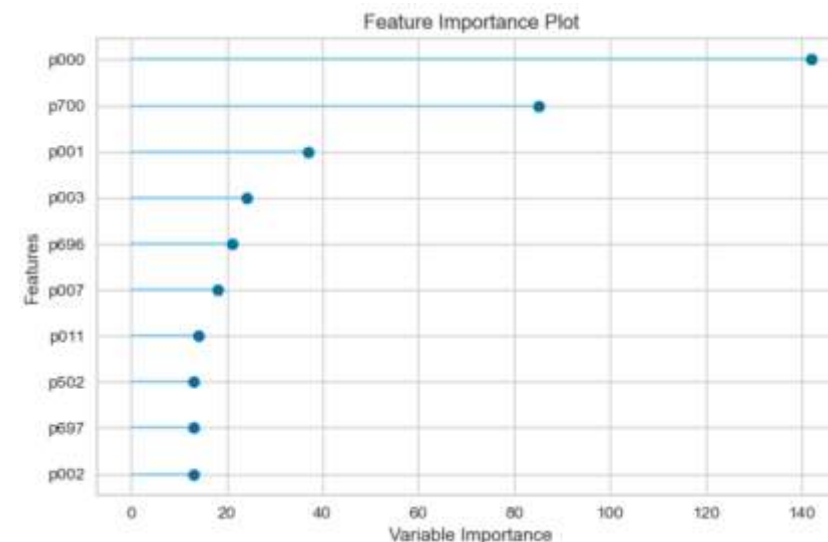
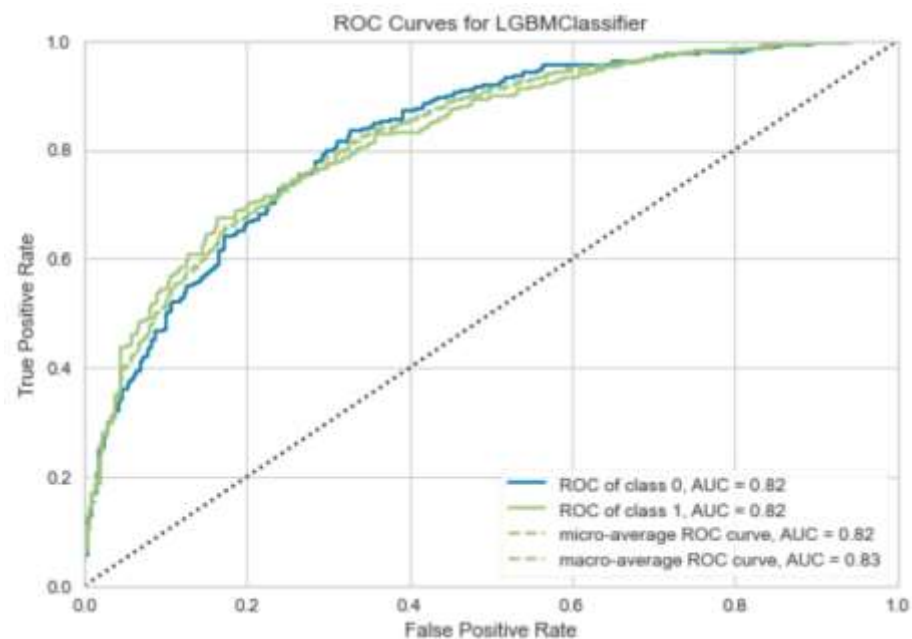
TKco-act-max-min

| | C101 | C201 | 02C1 | C2C1 | C202 |
|------------------|--------|--------|--------|--------|--------|
| model-ACC | rf | rf | et | et | dt |
| acc | 0.6518 | 0.6226 | 0.6252 | 0.5472 | 0.5314 |
| model-AUC | rf | et | nb | et | et |
| auc | 0.7024 | 0.6712 | 0.5361 | 0.5486 | 0.5406 |



TKco-prices-701

| | C101 | C201 | O2C1 | C2C1 | C202 |
|-----------|--------|--------|--------|--------|--------|
| model-ACC | gbc | gbc | qda | nb | lda |
| acc | 0.9584 | 0.7417 | 0.6266 | 0.5347 | 0.5109 |
| model-AUC | lgbm | gbc | gbc | nb | nb |
| auc | 0.991 | 0.8137 | 0.5532 | 0.5239 | 0.5104 |



ML : inday prices-OHLC

머신러닝 목표

- 하루 동안 주식을 대표하는 값들(OHLC)이 무엇을 예측할 수 있는가?
 - 'C1O1', 'C2O1', 'O2C1', 'C2C1', 'C2O2'
- 문제점
 - Normalization or rescaling of prices

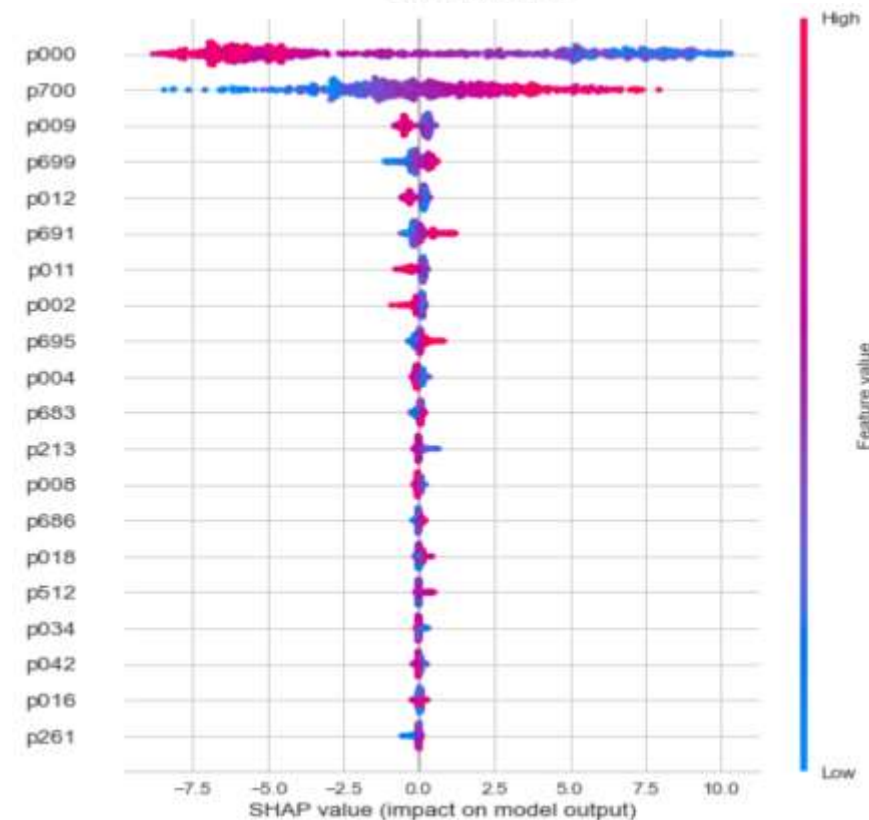
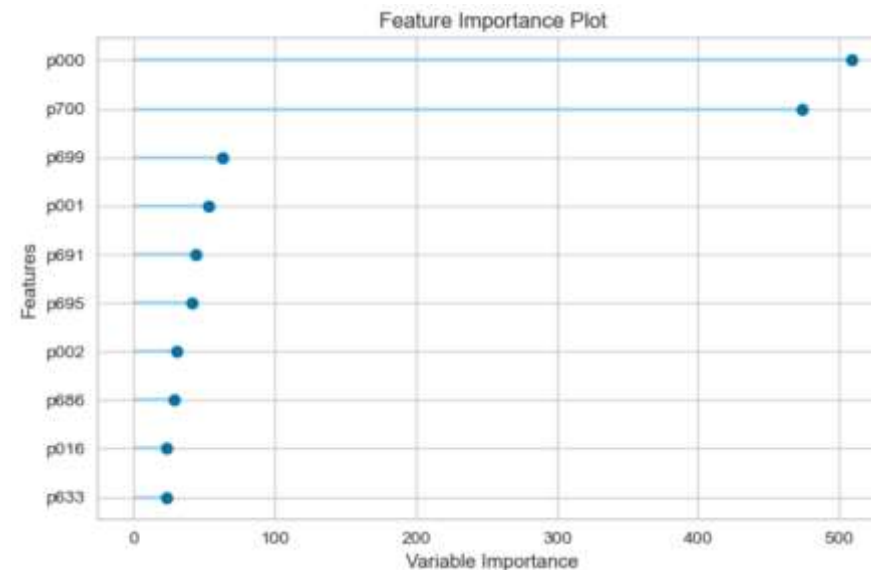
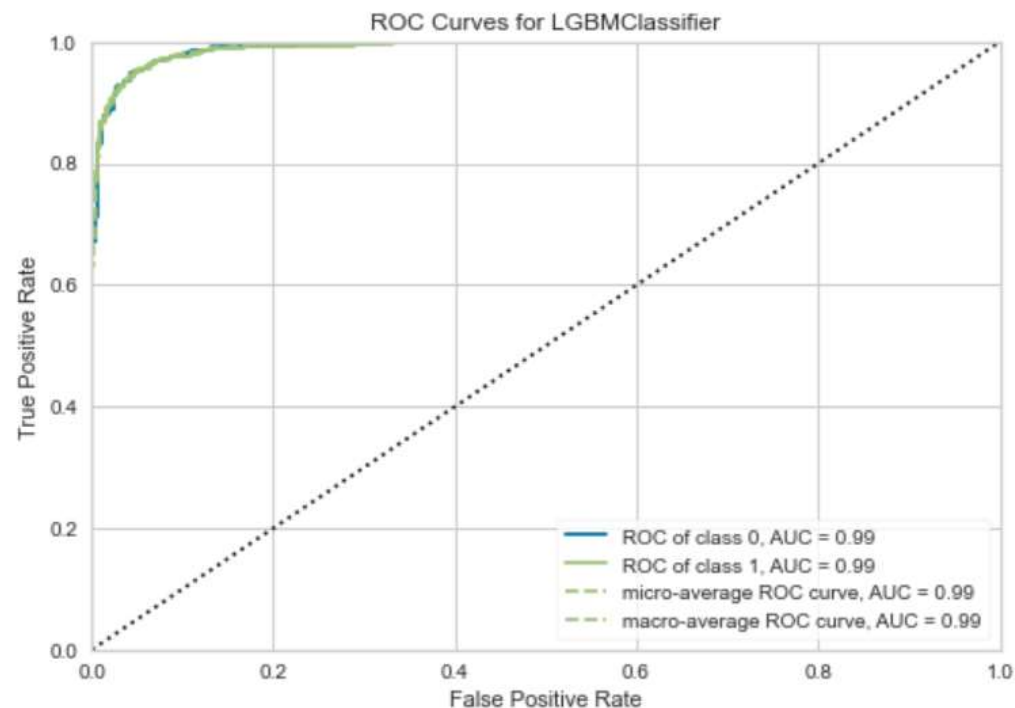
Stock 10 Y

- period
 - 2009-03-23 ~ 2018-05-30

| Date | Open | High | Low | Close | Volume | Change | C1O1 | C2O1 | O2C1 | C2C1 | C2O2 |
|------------|------|------|------|-------|----------|-----------|------|------|------|------|------|
| 2009-03-23 | 7850 | 8120 | 7800 | 8080 | 8344058 | 0.049351 | 1 | 1 | 1 | 1 | 0 |
| 2009-03-24 | 8240 | 8260 | 8010 | 8180 | 6652120 | 0.012376 | 0 | 0 | 0 | 0 | 0 |
| 2009-03-25 | 8120 | 8180 | 7970 | 8100 | 5107740 | -0.009780 | 0 | 1 | 1 | 1 | 1 |
| 2009-03-26 | 8170 | 8480 | 8110 | 8420 | 13682048 | 0.039506 | 1 | 1 | 1 | 1 | 0 |
| 2009-03-27 | 8570 | 9070 | 8470 | 8490 | 16489312 | 0.008314 | 0 | 0 | 1 | 0 | 0 |

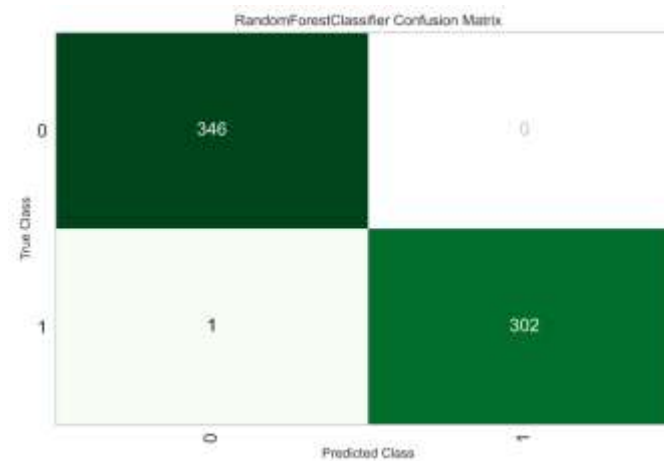
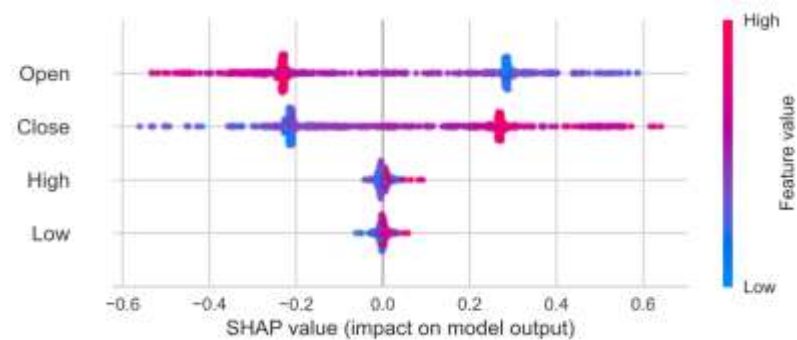
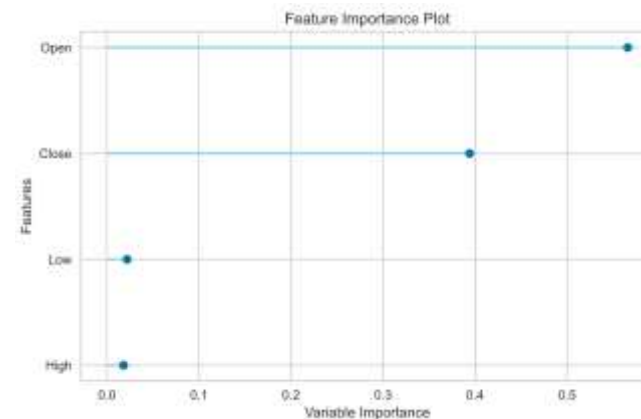
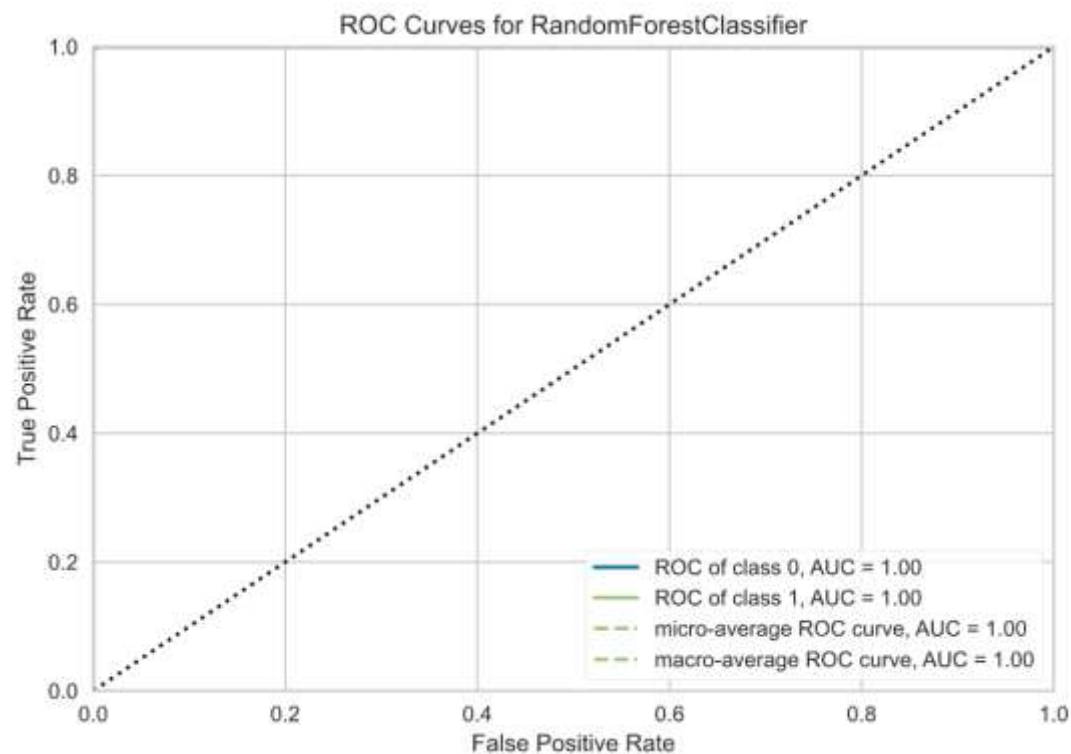
Kia-prices-701

| | C101 | C201 | O2C1 | C2C1 | C202 |
|-----------|--------|--------|--------|--------|--------|
| model-ACC | lgbm | rf | nb | ridge | qda |
| acc | 0.9524 | 0.727 | 0.5439 | 0.5472 | 0.5525 |
| model-AUC | lgbm | et | nb | lr | lr |
| auc | 0.9905 | 0.8037 | 0.5504 | 0.5572 | 0.5232 |



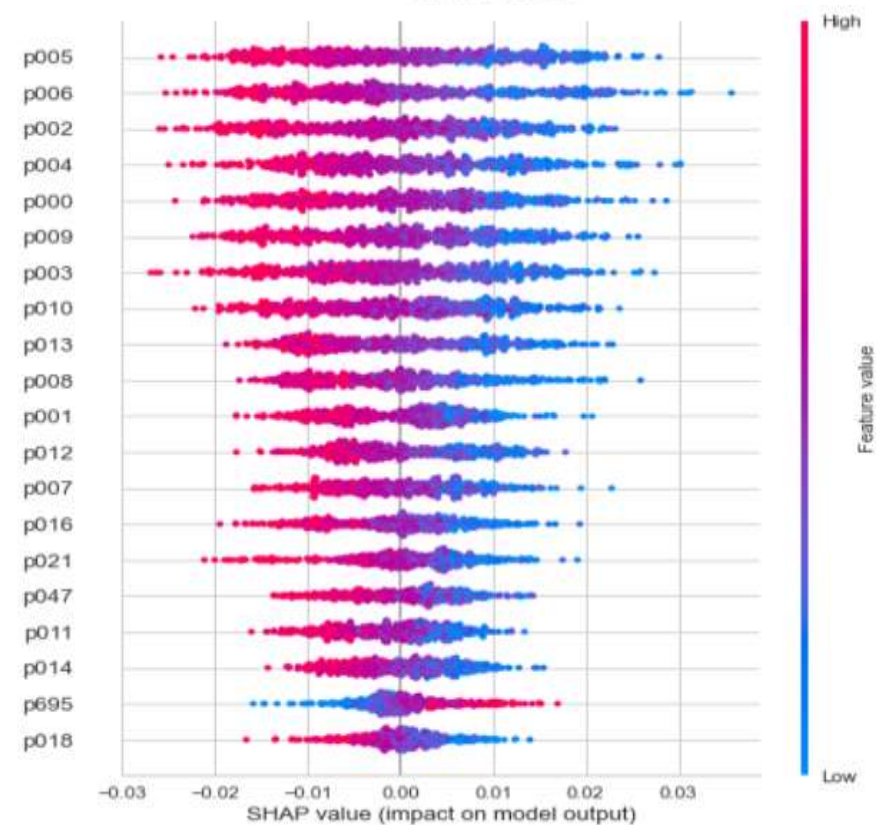
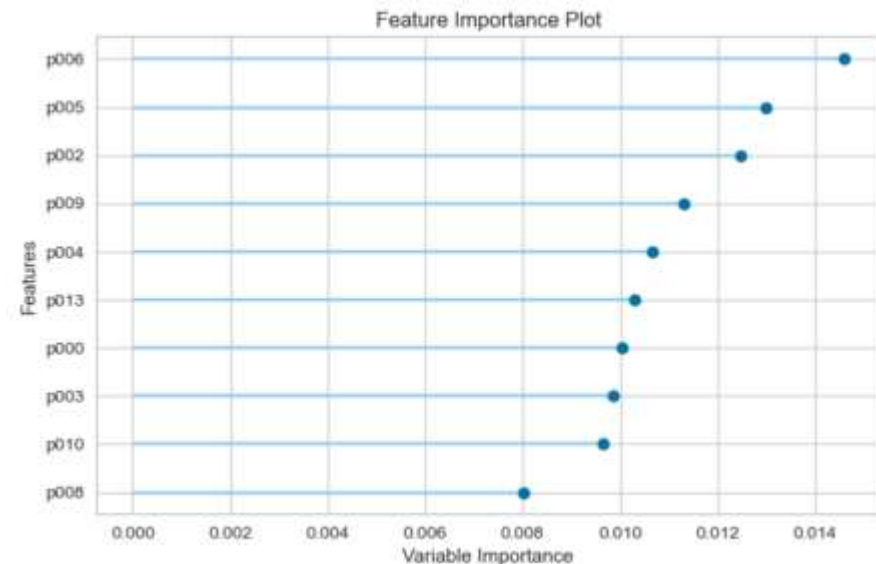
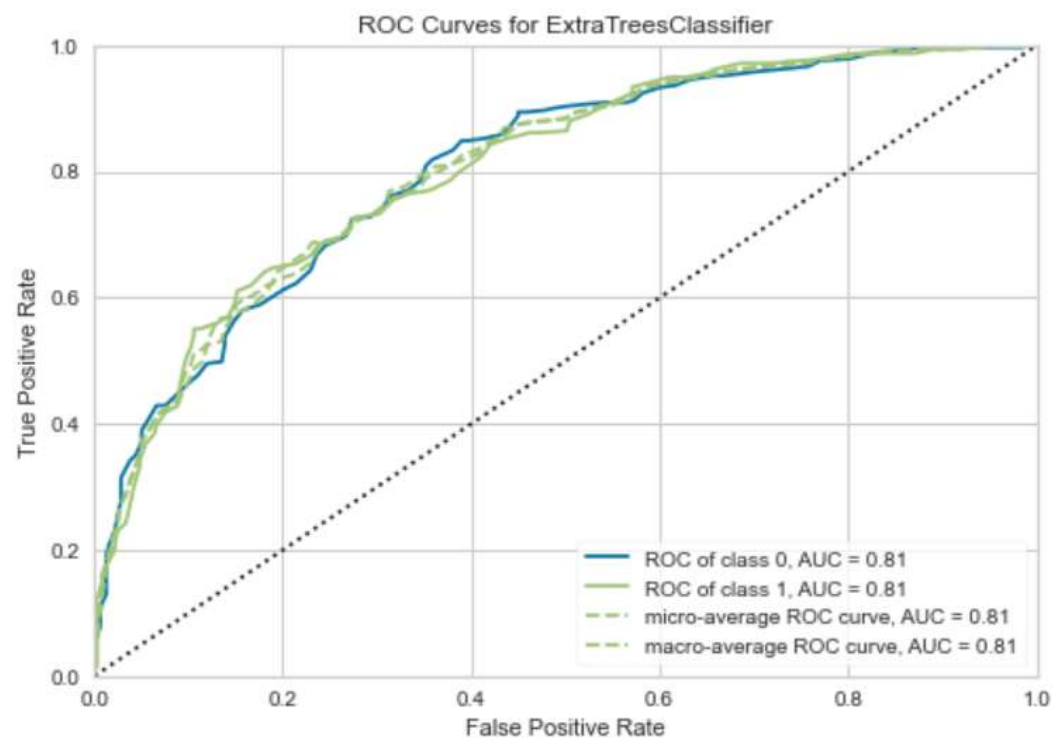
Kia-prices-OHLC

| | C101 | C201 | O2C1 | C2C1 | C202 |
|-----------|--------|--------|--------|--------|--------|
| model-ACC | et/lr | ridge | ridge | lr | lr |
| acc | 0.9993 | 0.7436 | 0.5631 | 0.5334 | 0.5585 |
| model-AUC | et/lr | nb | lr | lr | nb |
| auc | 1.0 | 0.8155 | 0.5824 | 0.5431 | 0.5394 |



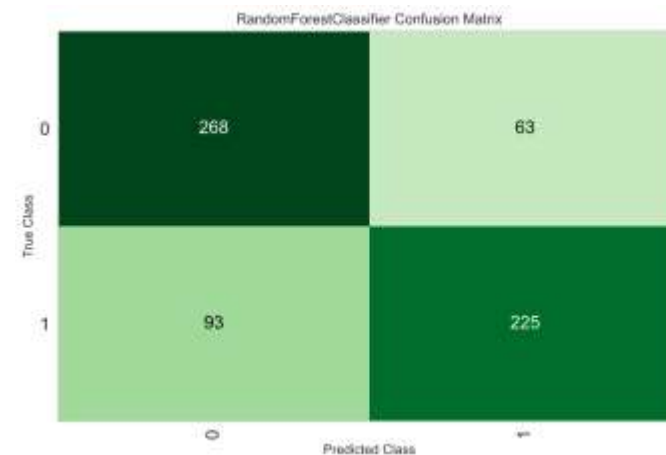
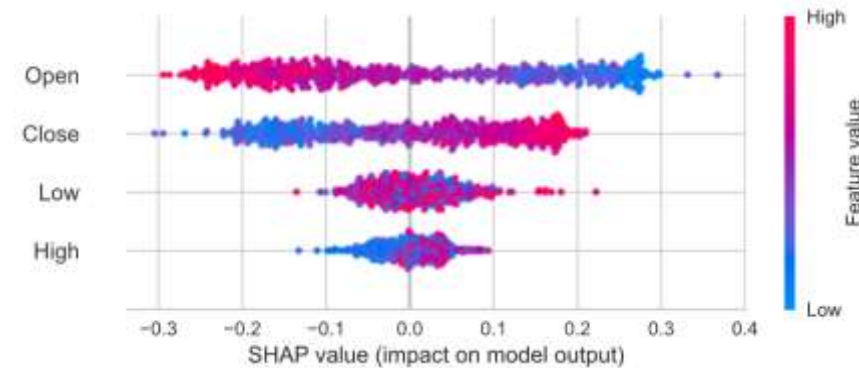
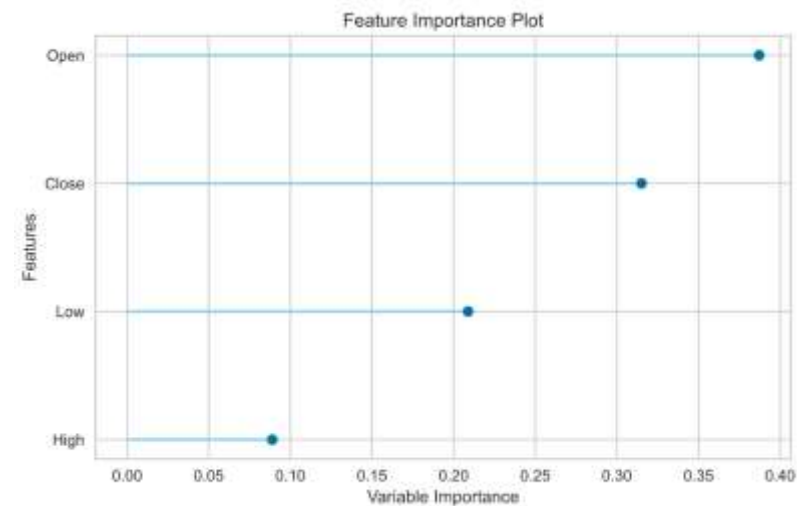
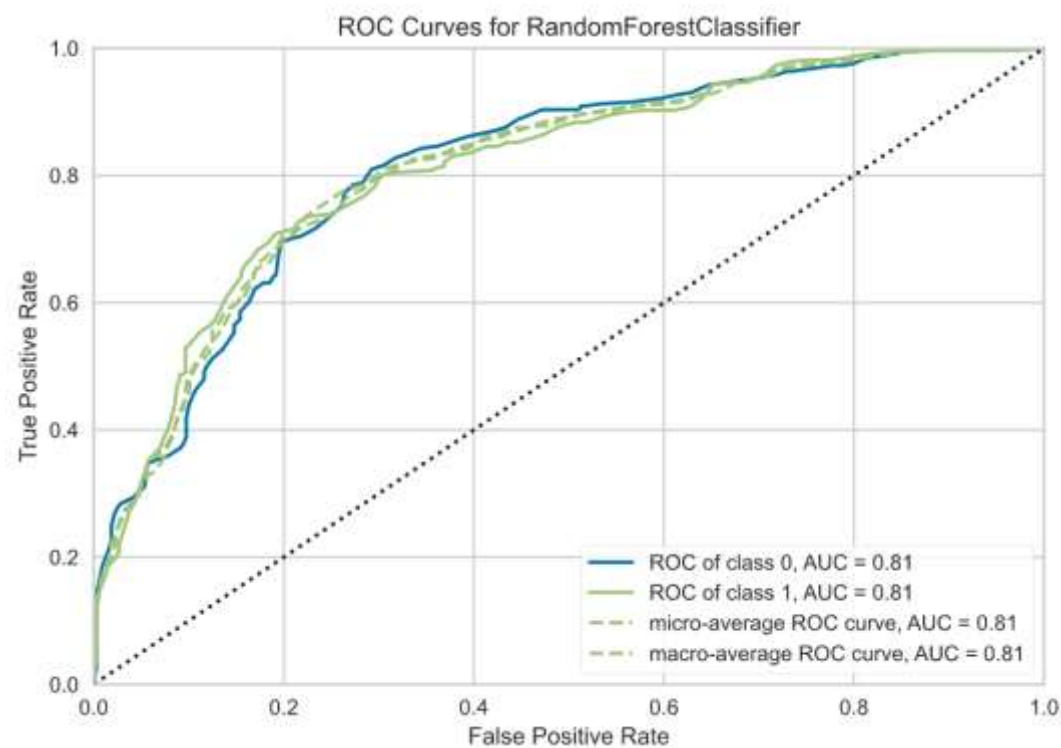
Kia-prices-701

| | C101 | C201 | O2C1 | C2C1 | C202 |
|-----------|--------|--------|--------|--------|--------|
| model-ACC | lgbm | rf | nb | ridge | qda |
| acc | 0.9524 | 0.727 | 0.5439 | 0.5472 | 0.5525 |
| model-AUC | lgbm | et | nb | lr | lr |
| auc | 0.9905 | 0.8037 | 0.5504 | 0.5572 | 0.5232 |



Kia-prices-OHLC

| | C101 | C201 | O2C1 | C2C1 | C202 |
|-----------|--------|--------|--------|--------|--------|
| model-ACC | et/lr | ridge | ridge | lr | lr |
| acc | 0.9993 | 0.7436 | 0.5631 | 0.5334 | 0.5585 |
| model-AUC | et/lr | nb | lr | lr | nb |
| auc | 1.0 | 0.8155 | 0.5824 | 0.5431 | 0.5394 |



ML : inday prices-OHLC-T6

KRX Stock

- period
 - 2010-01-02 ~ today
- data in a day
 - Open
 - High
 - Low
 - Close (Adjusted)
- targets
 - 'C1O1', 'C2O1', 'O2O1', 'O2C1', 'C2C1', 'C2O2'

| | Open | High | Low | Close | Volume | Change | C1O1 | O2O1 | C2O1 | O2C1 | C2C1 | C2O2 |
|------------|-------|-------|-------|-------|----------|-----------|------|------|------|------|------|------|
| Date | | | | | | | | | | | | |
| 2010-01-04 | 20100 | 20900 | 20000 | 20800 | 4286586 | 0.037406 | 1 | 1 | 0 | 1 | 0 | 0 |
| 2010-01-05 | 20850 | 21100 | 19650 | 19650 | 11881641 | -0.055288 | 0 | 0 | 0 | 1 | 1 | 1 |
| 2010-01-06 | 19750 | 20150 | 19300 | 19850 | 6922929 | 0.010178 | 1 | 1 | 0 | 0 | 0 | 0 |
| 2010-01-07 | 19800 | 19850 | 18900 | 18950 | 5891529 | -0.045340 | 0 | 0 | 0 | 0 | 1 | 1 |
| 2010-01-08 | 18750 | 19350 | 18450 | 19350 | 7175395 | 0.021108 | 1 | 1 | 0 | 0 | 0 | 0 |

| | | | | | | | |
|----------------------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|
| Kia-prices-OHLC-T6 | | C1O1 | O2O1 | C2O1 | O2C1 | C2C1 | C2O2 |
| | model-ACC | lr | lr | ridge | lr | lr | lr |
| | acc | 0.999 | 0.8621 | 0.7593 | 0.5558 | 0.5354 | 0.5606 |
| | model-AUC | lr/rf | nb | nb | lr | lr | lr |
| | auc | 1.0 | 0.9345 | 0.8295 | 0.5746 | 0.5343 | 0.5318 |
| Hynix-prices-OHLC-T6 | | C1O1 | O2O1 | C2O1 | O2C1 | C2C1 | C2O2 |
| | model-ACC | et | lr | lr | lda | lr | lr |
| | acc | 0.999 | 0.8311 | 0.7095 | 0.5527 | 0.5475 | 0.5669 |
| | model-AUC | lr/et | lr | lda | lr | lr | lr |
| | auc | 1.0 | 0.9152 | 0.7771 | 0.5566 | 0.5646 | 0.5675 |
| TKco-prices-OHLC-T6 | | C1O1 | O2O1 | C2O1 | O2C1 | C2C1 | C2O2 |
| | model-ACC | lr | lda | ada | lr | ada | ada |
| | acc | 0.9061 | 0.8244 | 0.7515 | 0.624 | 0.5328 | 0.5181 |
| | model-AUC | lr | lda | lr | ada | ada | lr |
| | auc | 0.9682 | 0.9034 | 0.8263 | 0.5316 | 0.5345 | 0.5271 |