# Table 17: Performance Metrics of the LightGBM Model

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| param\_num\_leaves | param\_learning\_rate | param\_n\_estimators | param\_max\_depth | param\_min\_child\_samples | mean\_test\_accuracy | mean\_test\_precision | mean\_test\_recall | mean\_test\_f1 | rank\_test\_accuracy |
| 10.0 | 0.1 | 50.0 | -1.0 | 10.0 | 0.949049 | 0.922337 | 0.981036 | 0.950705 | 1.0 |
| 31.0 | 0.1 | 50.0 | 5.0 | 20.0 | 0.949042 | 0.924254 | 0.978683 | 0.950586 | 2.0 |
| 31.0 | 0.1 | 100.0 | 3.0 | 10.0 | 0.949042 | 0.920584 | 0.983389 | 0.950805 | 2.0 |
| 10.0 | 0.1 | 50.0 | 5.0 | 10.0 | 0.949042 | 0.922529 | 0.981064 | 0.950757 | 2.0 |
| 10.0 | 0.1 | 100.0 | 3.0 | 10.0 | 0.949042 | 0.920584 | 0.983389 | 0.950805 | 2.0 |
| 20.0 | 0.1 | 100.0 | 3.0 | 10.0 | 0.949042 | 0.920584 | 0.983389 | 0.950805 | 2.0 |
| 20.0 | 0.1 | 50.0 | 5.0 | 20.0 | 0.949042 | 0.924254 | 0.978683 | 0.950586 | 2.0 |
| 10.0 | 0.1 | 50.0 | -1.0 | 20.0 | 0.947866 | 0.924059 | 0.976331 | 0.949377 | 8.0 |
| 10.0 | 0.1 | 50.0 | 5.0 | 20.0 | 0.947866 | 0.924024 | 0.976359 | 0.949394 | 8.0 |
| 20.0 | 0.1 | 50.0 | 5.0 | 10.0 | 0.947852 | 0.922095 | 0.978655 | 0.949483 | 10.0 |