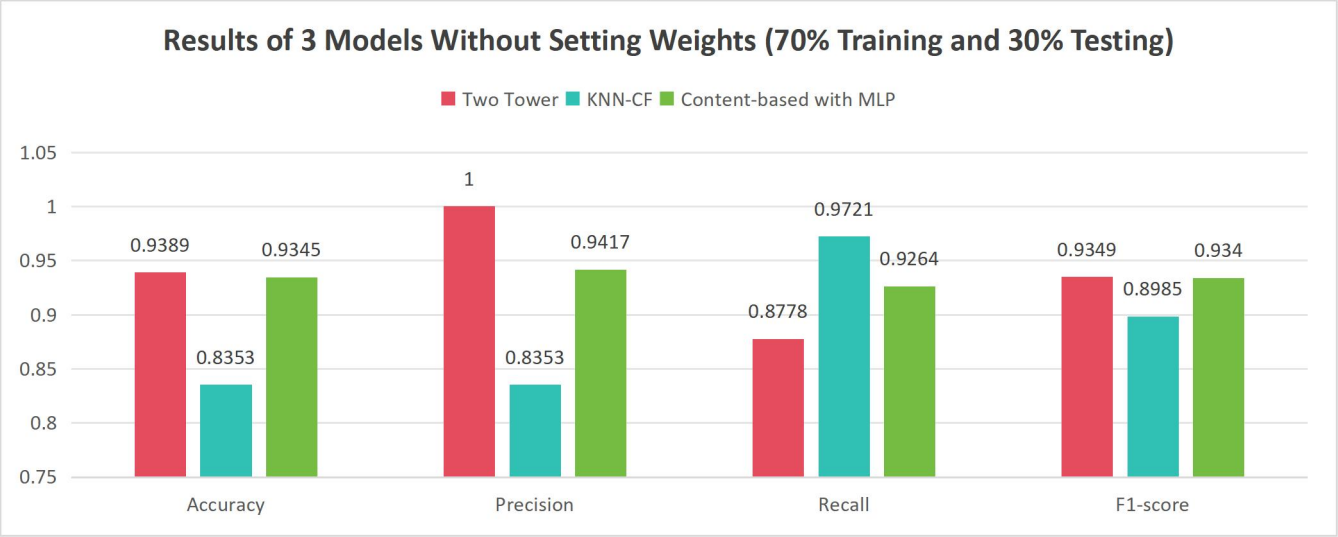
The results of three models (Two Tower, KNN-CF, Content-based with MLP)

1. The results of 3 models without setting weights

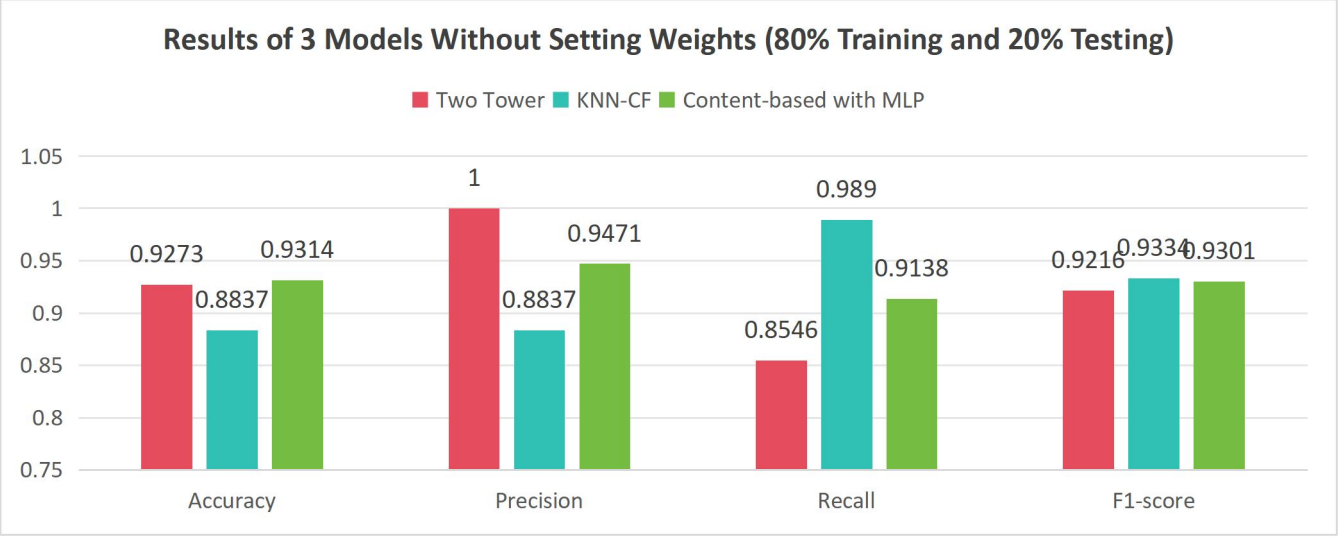
Training 70%, testing 30%

Metrics \ Models	Two Tower	KNN-CF	Content-based with MLP
Accuracy	0.9389	0.8353	0.9345
Precision	1.0000	0.8353	0.9417
Recall	0.8778	0.9721	0.9264
F1-score	0.9349	0.8985	0.9340



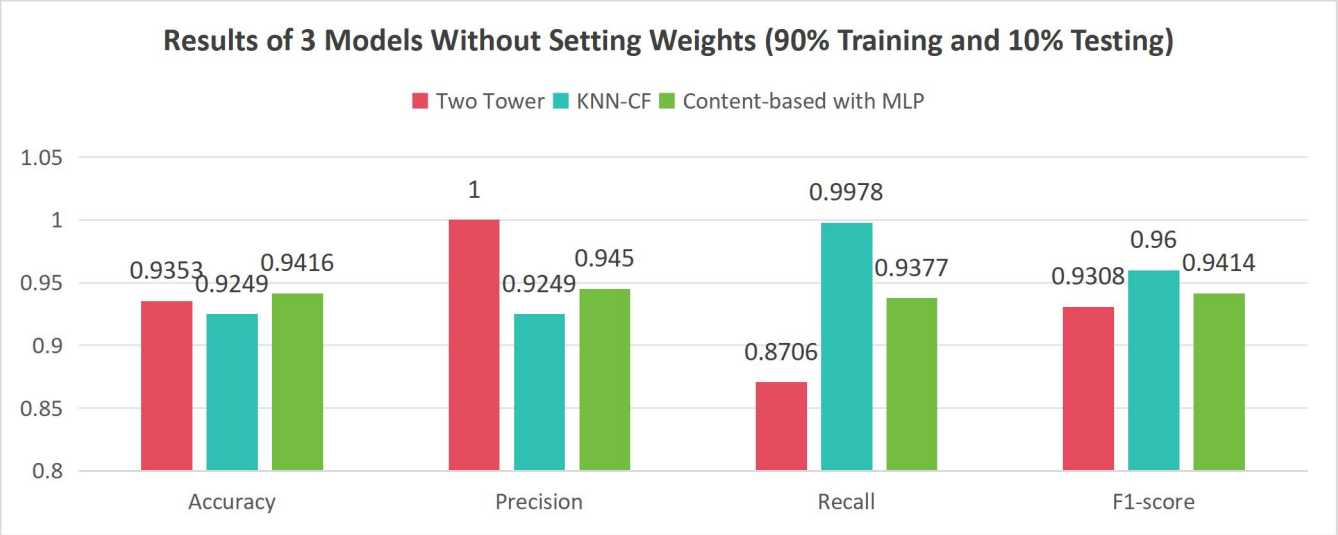
Training 80%, testing 20%

Metrics \ Models	Two Tower	KNN-CF	Content-based with MLP
Accuracy	0.9273	0.8837	0.9314
Precision	1.0000	0.8837	0.9471
Recall	0.8546	0.9890	0.9138
F1-score	0.9216	0.9334	0.9301



Training 90%, testing 10%

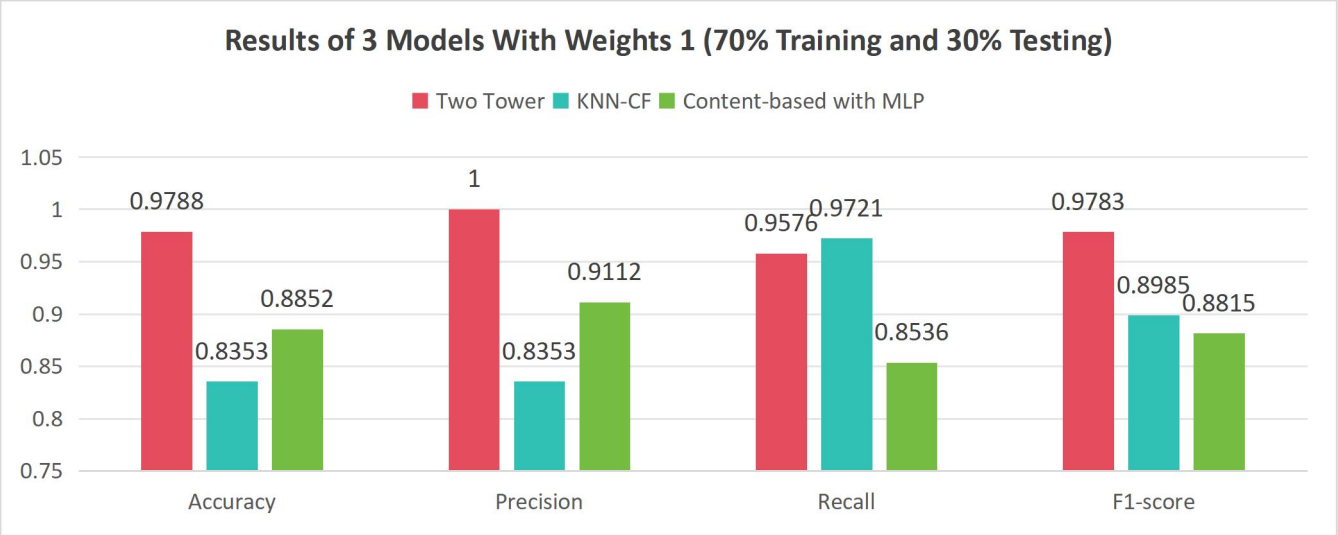
Metrics \ Models	Two Tower	KNN-CF	Content-based with MLP
Accuracy	0.9353	0.9249	0.9416
Precision	1.0000	0.9249	0.9450
Recall	0.8706	0.9978	0.9377
F1-score	0.9308	0.9600	0.9414



2. The weight 1 results for 3 models

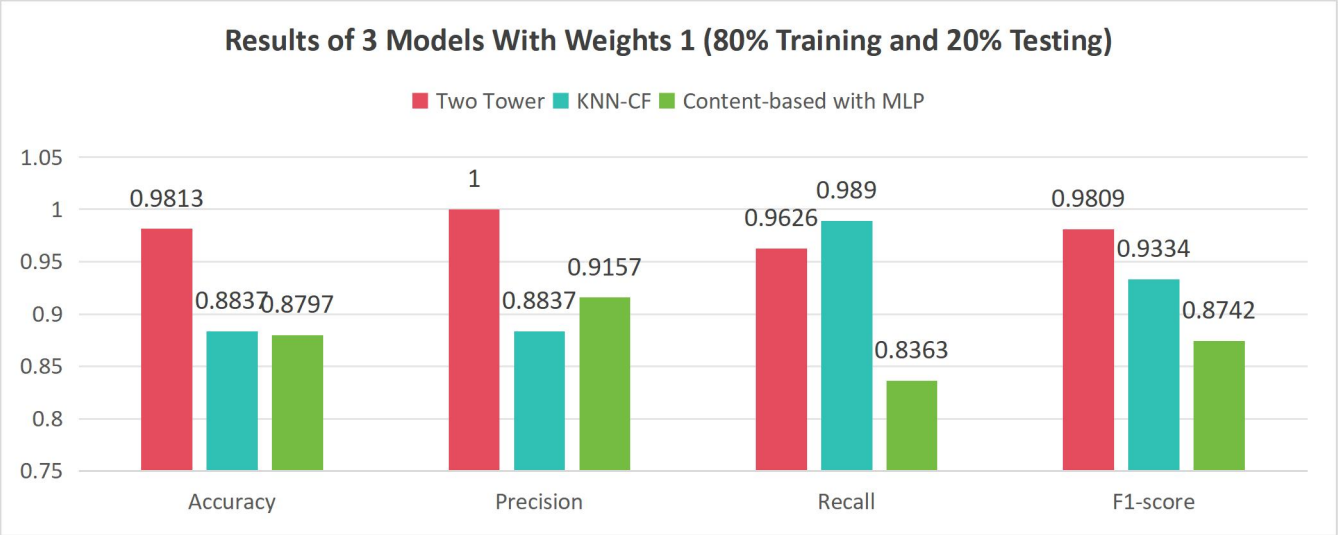
Training 70%, testing 30%

Metrics \ Models	Two Tower	KNN-CF	Content-based with MLP
Accuracy	0.9788	0.8353	0.8852
Precision	1.0000	0.8353	0.9112
Recall	0.9576	0.9721	0.8536
F1-score	0.9783	0.8985	0.8815



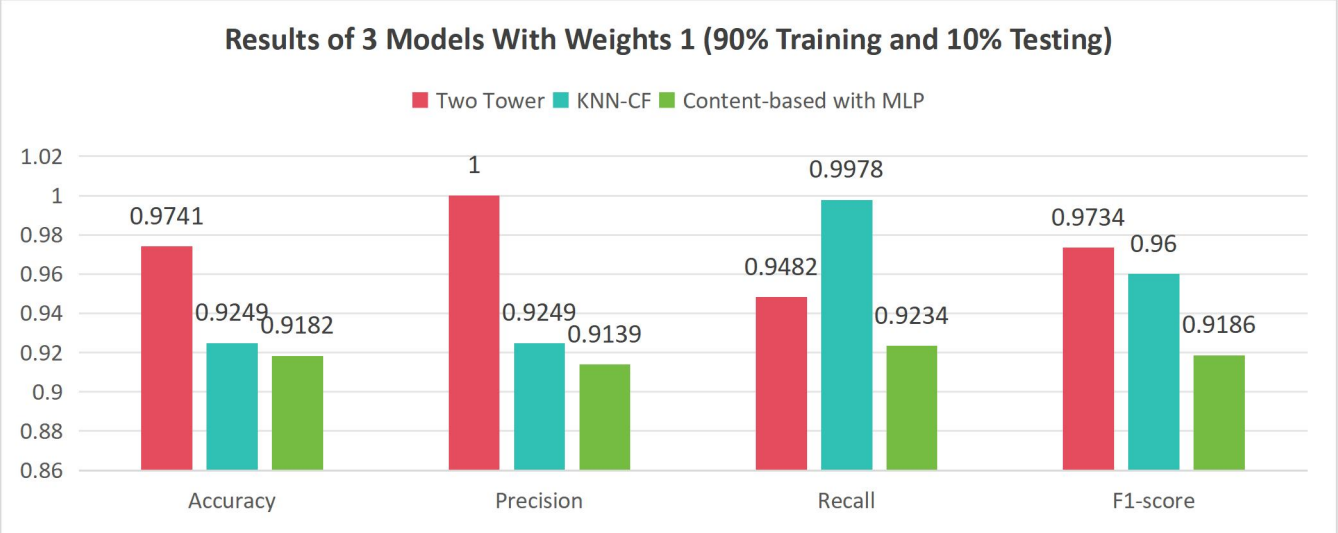
Training 80%, testing 20%

Metrics \ Models	Two Tower	KNN-CF	Content-based with MLP
Accuracy	0.9813	0.8837	0.8797
Precision	1.0000	0.8837	0.9157
Recall	0.9626	0.9890	0.8363
F1-score	0.9809	0.9334	0.8742



Training 90%, testing 10%

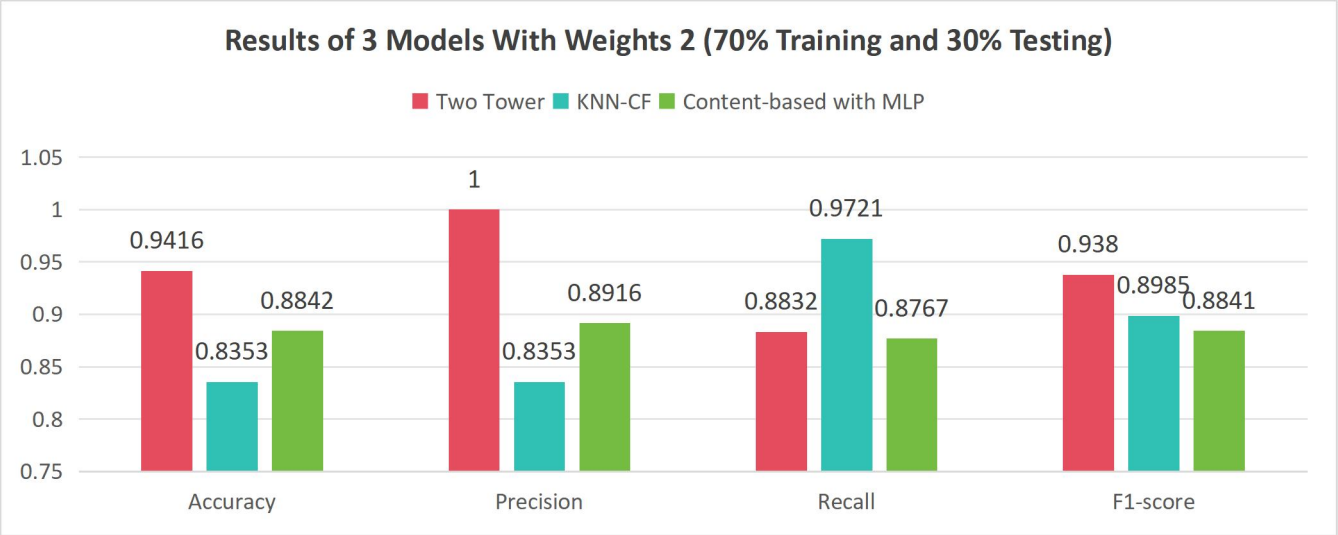
Metrics \ Models	Two Tower	KNN-CF	Content-based with MLP
Accuracy	0.9741	0.9249	0.9182
Precision	1.0000	0.9249	0.9139
Recall	0.9482	0.9978	0.9234
F1-score	0.9734	0.9600	0.9186



3. The weight 2 results for 3 models

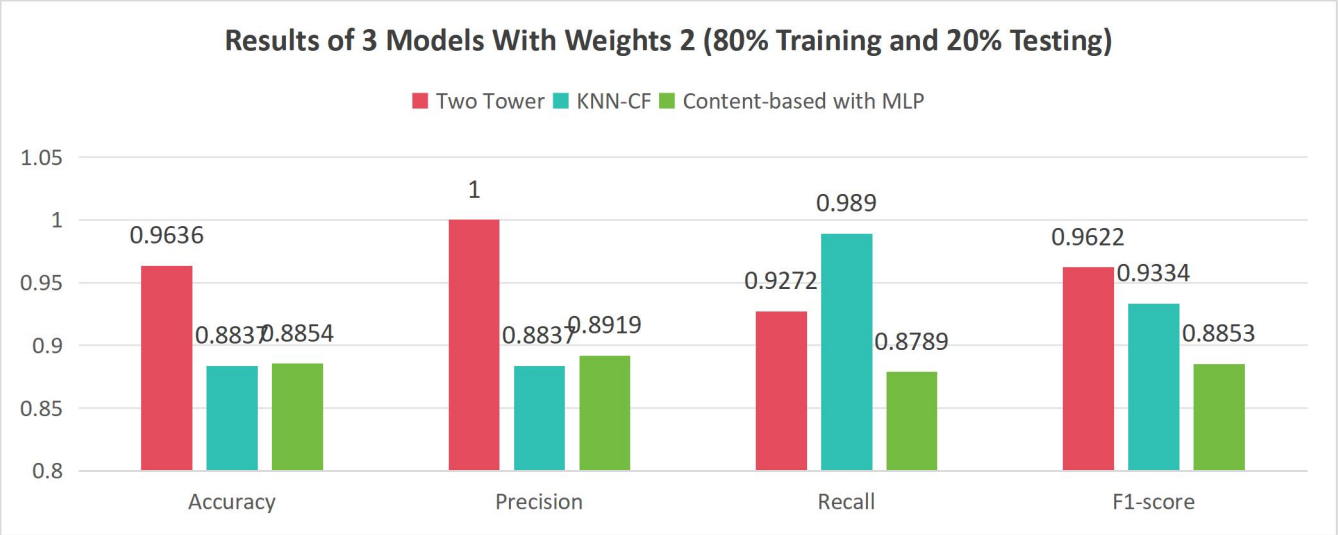
Training 70%, testing 30%

Metrics \ Models	Two Tower	KNN-CF	Content-based with MLP
Accuracy	0.9416	0.8353	0.8842
Precision	1.0000	0.8353	0.8916
Recall	0.8832	0.9721	0.8767
F1-score	0.9380	0.8985	0.8841



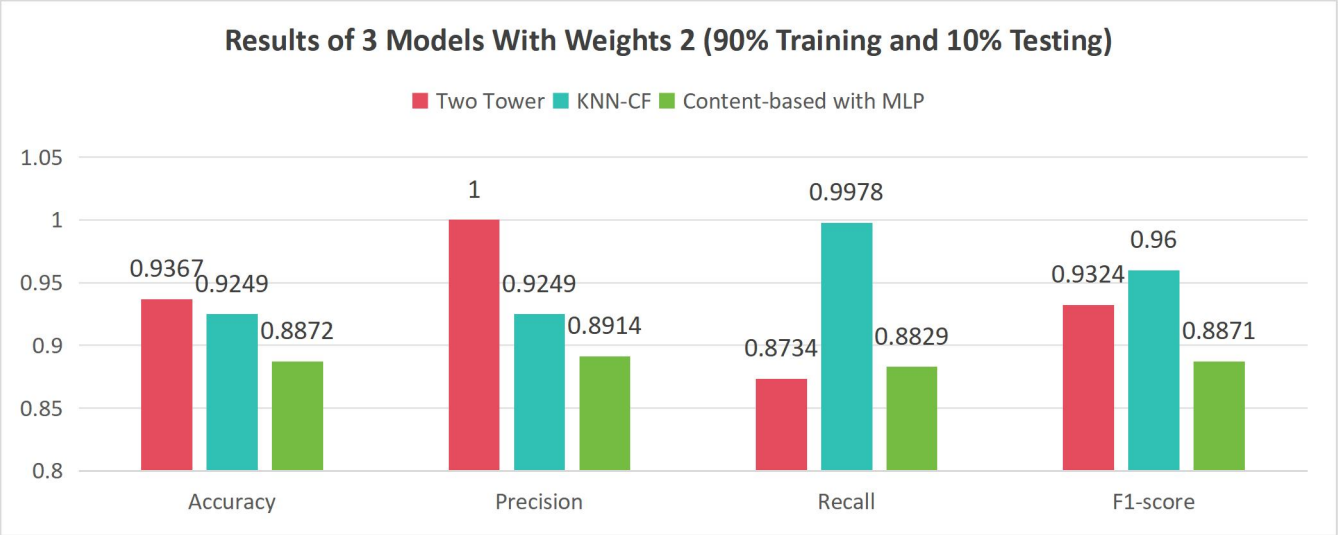
Training 80%, testing 20%

Metrics \ Models	Two Tower	KNN-CF	Content-based with MLP
Accuracy	0.9636	0.8837	0.8854
Precision	1.0000	0.8837	0.8919
Recall	0.9272	0.9890	0.8789
F1-score	0.9622	0.9334	0.8853



Training 90%, testing 10%

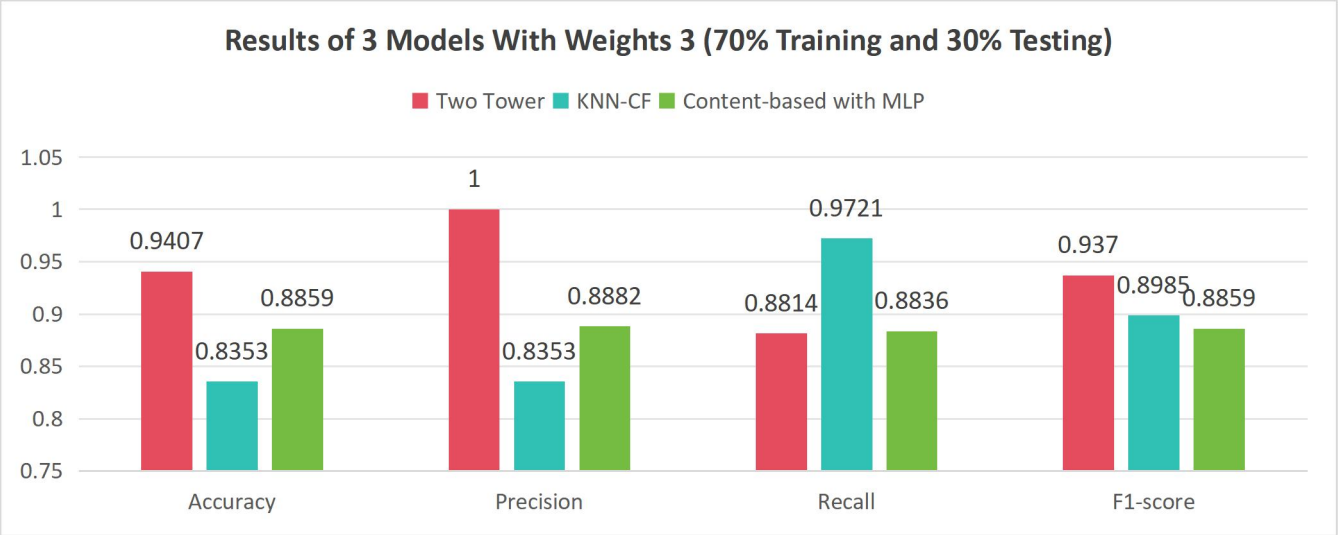
Metrics \ Models	Two Tower	KNN-CF	Content-based with MLP
Accuracy	0.9367	0.9249	0.8872
Precision	1.0000	0.9249	0.8914
Recall	0.8734	0.9978	0.8829
F1-score	0.9324	0.9600	0.8871



4. The weight 3 results for 3 models

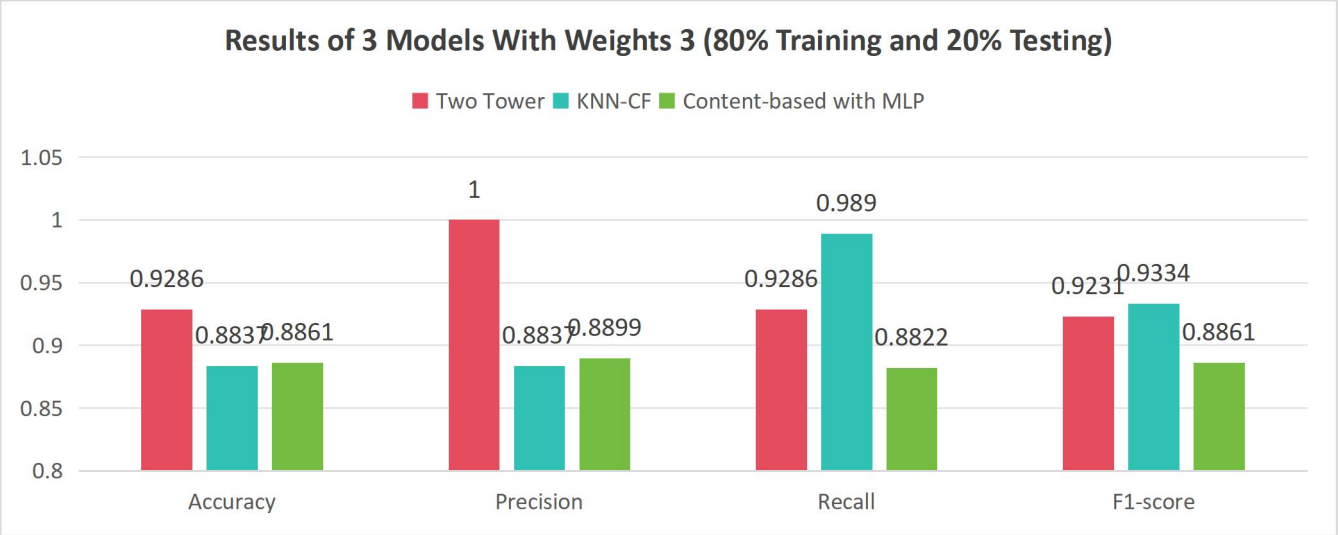
Training 70%, testing 30%

Metrics \ Models	Two Tower	KNN-CF	Content-based with MLP
Accuracy	0.9407	0.8353	0.8859
Precision	1.0000	0.8353	0.8882
Recall	0.8814	0.9721	0.8836
F1-score	0.9370	0.8985	0.8859



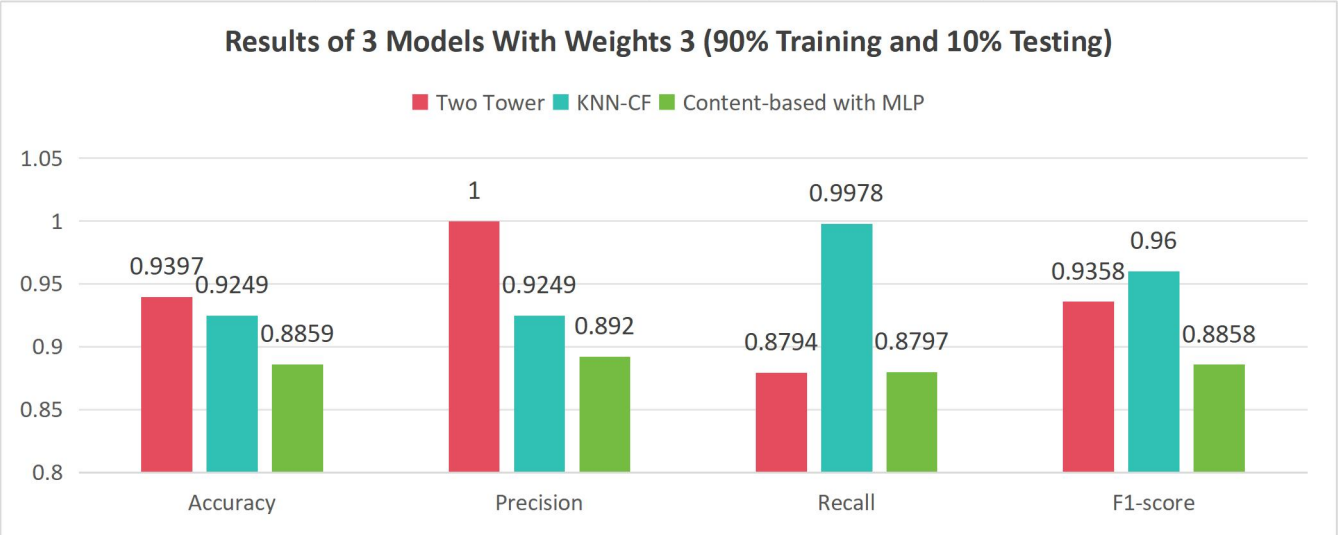
Training 80%, testing 20%

Metrics \ Models	Two Tower	KNN-CF	Content-based with MLP
Accuracy	0.9286	0.8837	0.8861
Precision	1.0000	0.8837	0.8899
Recall	0.9286	0.9890	0.8822
F1-score	0.9231	0.9334	0.8861



Training 90%, testing 10%

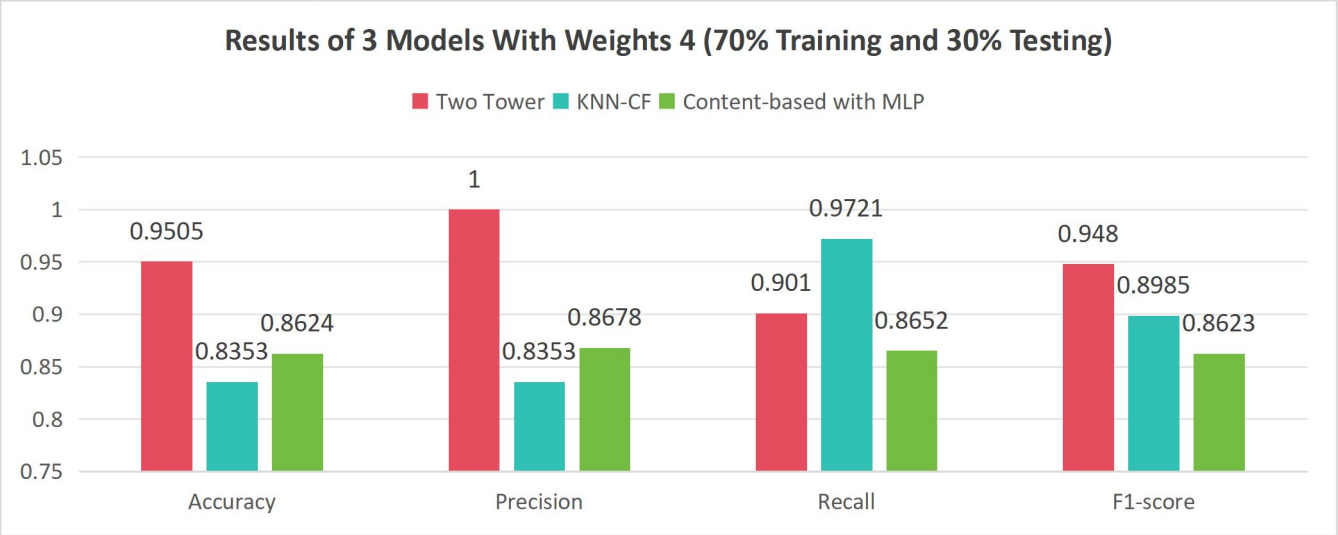
Metrics \ Models	Two Tower	KNN-CF	Content-based with MLP
Accuracy	0.9397	0.9249	0.8859
Precision	1.0000	0.9249	0.892
Recall	0.8794	0.9978	0.8797
F1-score	0.9358	0.9600	0.8858



5. The weight 4 results for 3 models

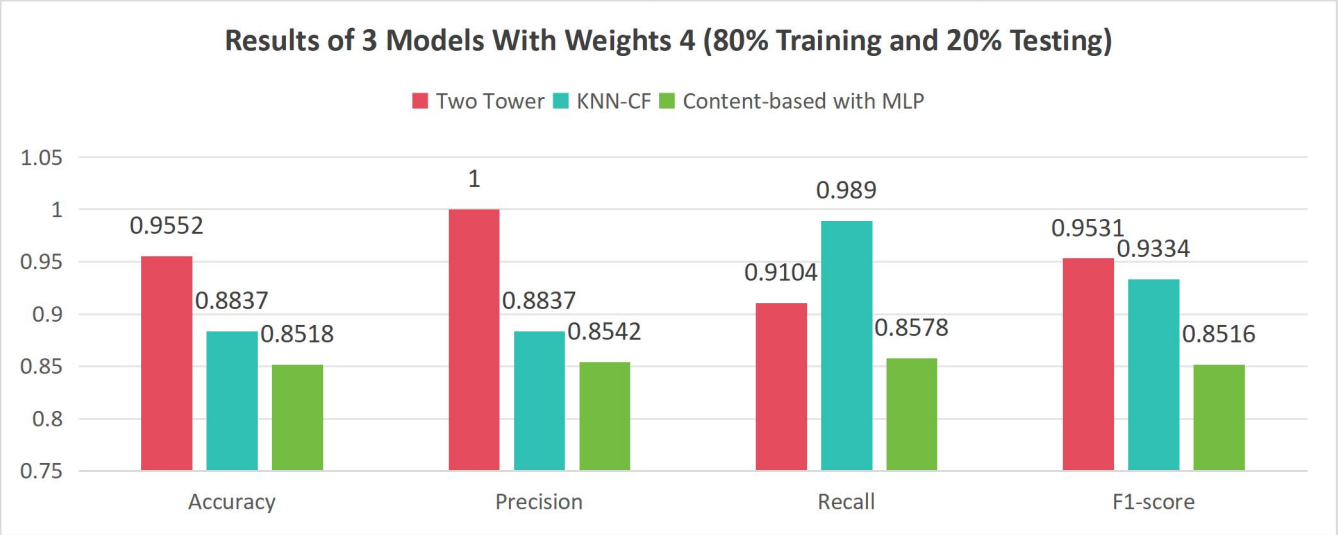
Training 70%, testing 30%

Metrics \ Models	Two Tower	KNN-CF	Content-based with MLP
Accuracy	0.9505	0.8353	0.8624
Precision	1.0000	0.8353	0.8678
Recall	0.9010	0.9721	0.8652
F1-score	0.9480	0.8985	0.8623



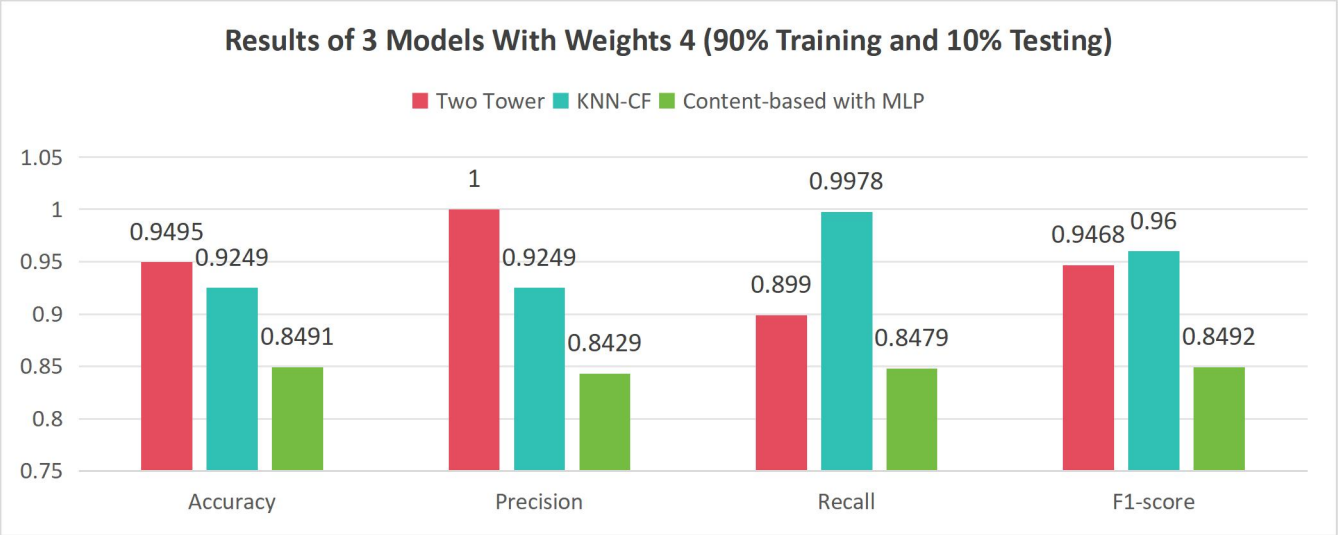
Training 80%, testing 20%

Metrics \ Models	Two Tower	KNN-CF	Content-based with MLP
Accuracy	0.9552	0.8837	0.8518
Precision	1.0000	0.8837	0.8542
Recall	0.9104	0.9890	0.8578
F1-score	0.9531	0.9334	0.8516



Training 90%, testing 10%

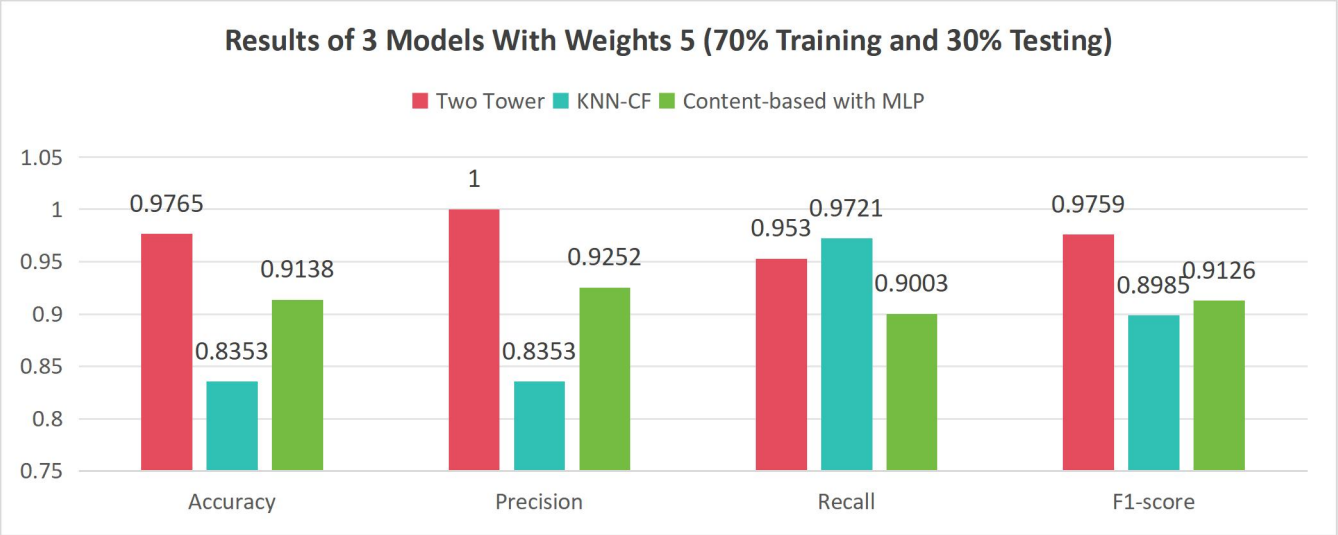
Metrics \ Models	Two Tower	KNN-CF	Content-based with MLP
Accuracy	0.9495	0.9249	0.8491
Precision	1.0000	0.9249	0.8429
Recall	0.8990	0.9978	0.8479
F1-score	0.9468	0.9600	0.8492



6. The weight 5 results for 3 models

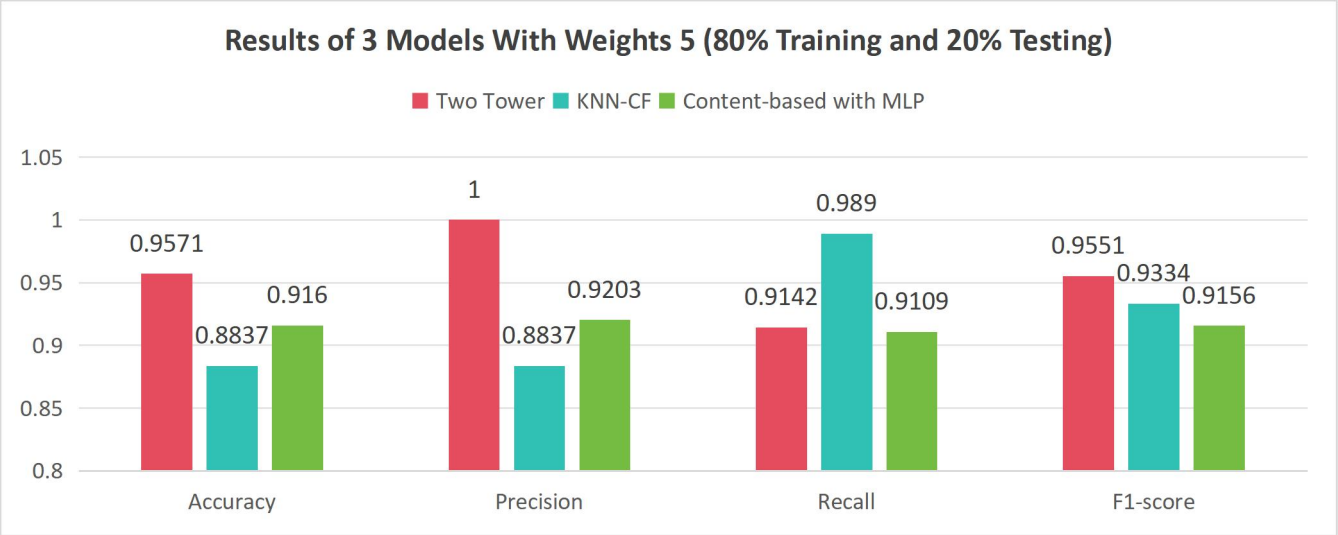
Training 70%, testing 30%

Metrics \ Models	Two Tower	KNN-CF	Content-based with MLP
Accuracy	0.9765	0.8353	0.9138
Precision	1.0000	0.8353	0.9252
Recall	0.9530	0.9721	0.9003
F1-score	0.9759	0.8985	0.9126



Training 80%, testing 20%

Metrics \ Models	Two Tower	KNN-CF	Content-based with MLP
Accuracy	0.9571	0.8837	0.916
Precision	1.0000	0.8837	0.9203
Recall	0.9142	0.9890	0.9109
F1-score	0.9551	0.9334	0.9156



Training 90%, testing 10%

Metrics \ Models	Two Tower	KNN-CF	Content-based with MLP
Accuracy	0.9589	0.9249	0.9259
Precision	1.0000	0.9249	0.9285
Recall	0.9178	0.9978	0.9228
F1-score	0.9571	0.9600	0.9256