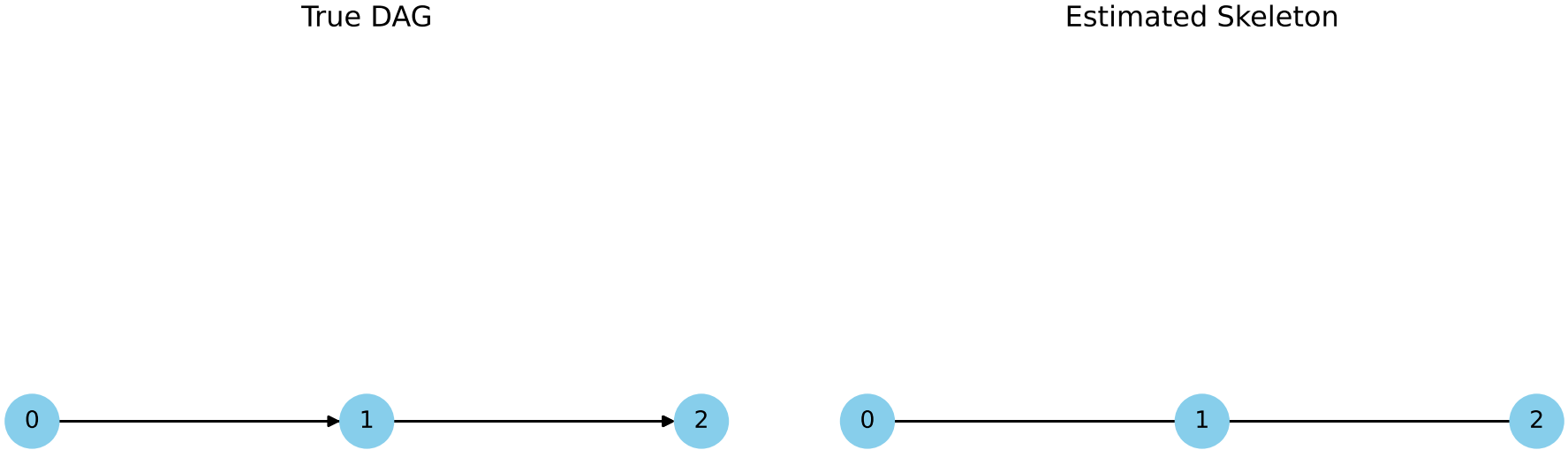
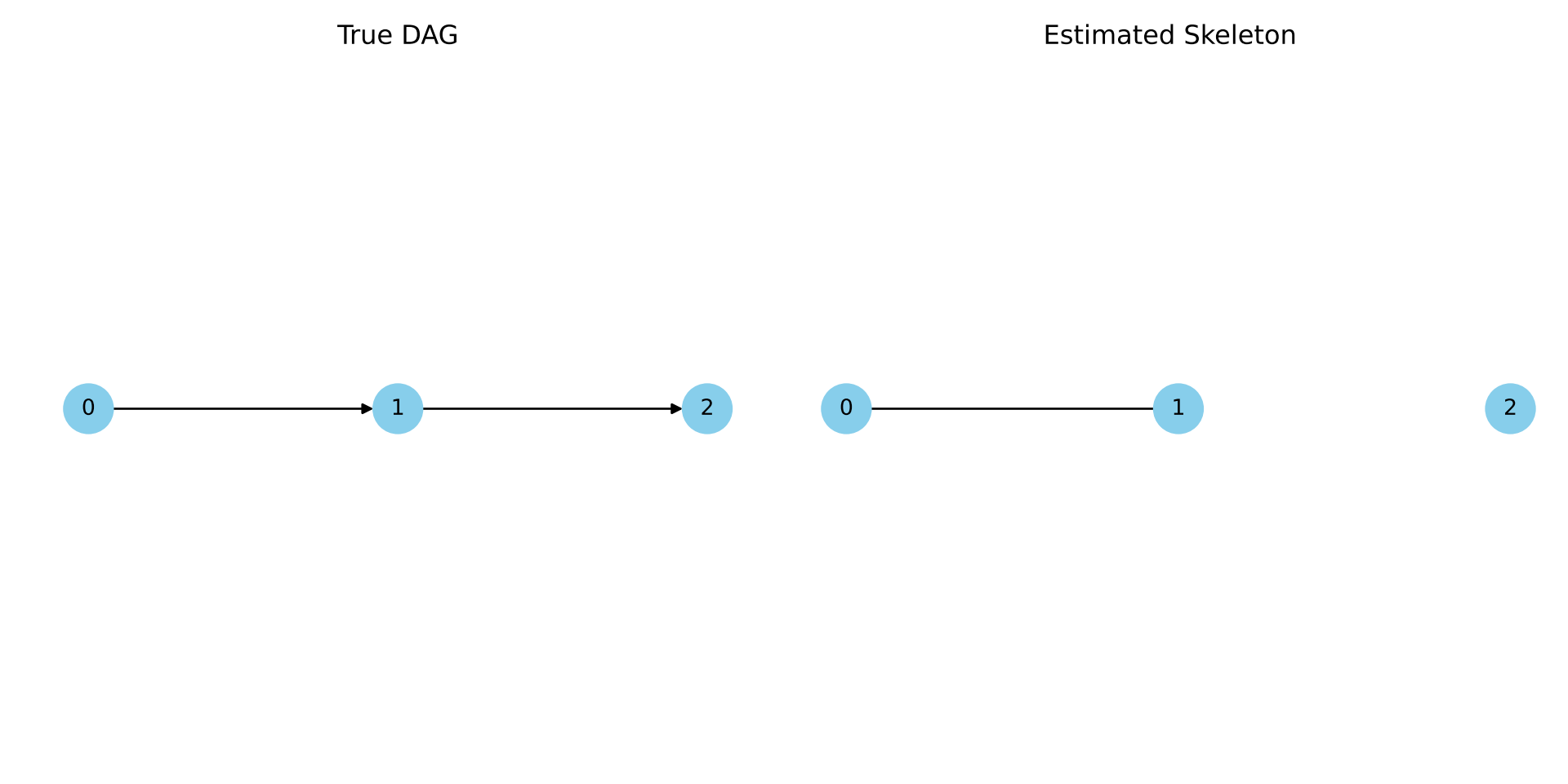
Models with faithfulness violations


True DAG
0
1
2
Estimated Skeleton
0
1
2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Estimated Skeleton
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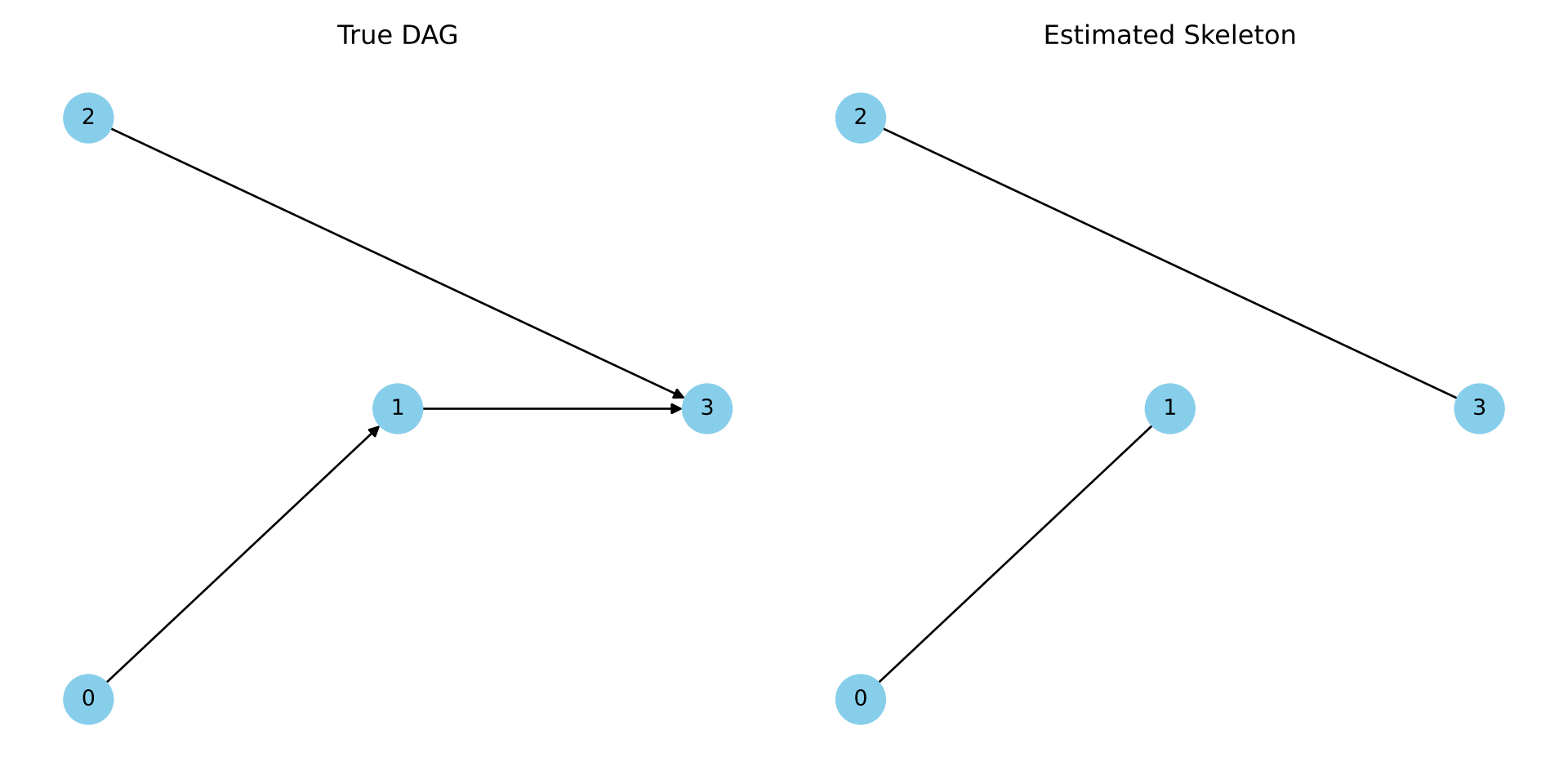
True DAG
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3
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Estimated Skeleton
2
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3
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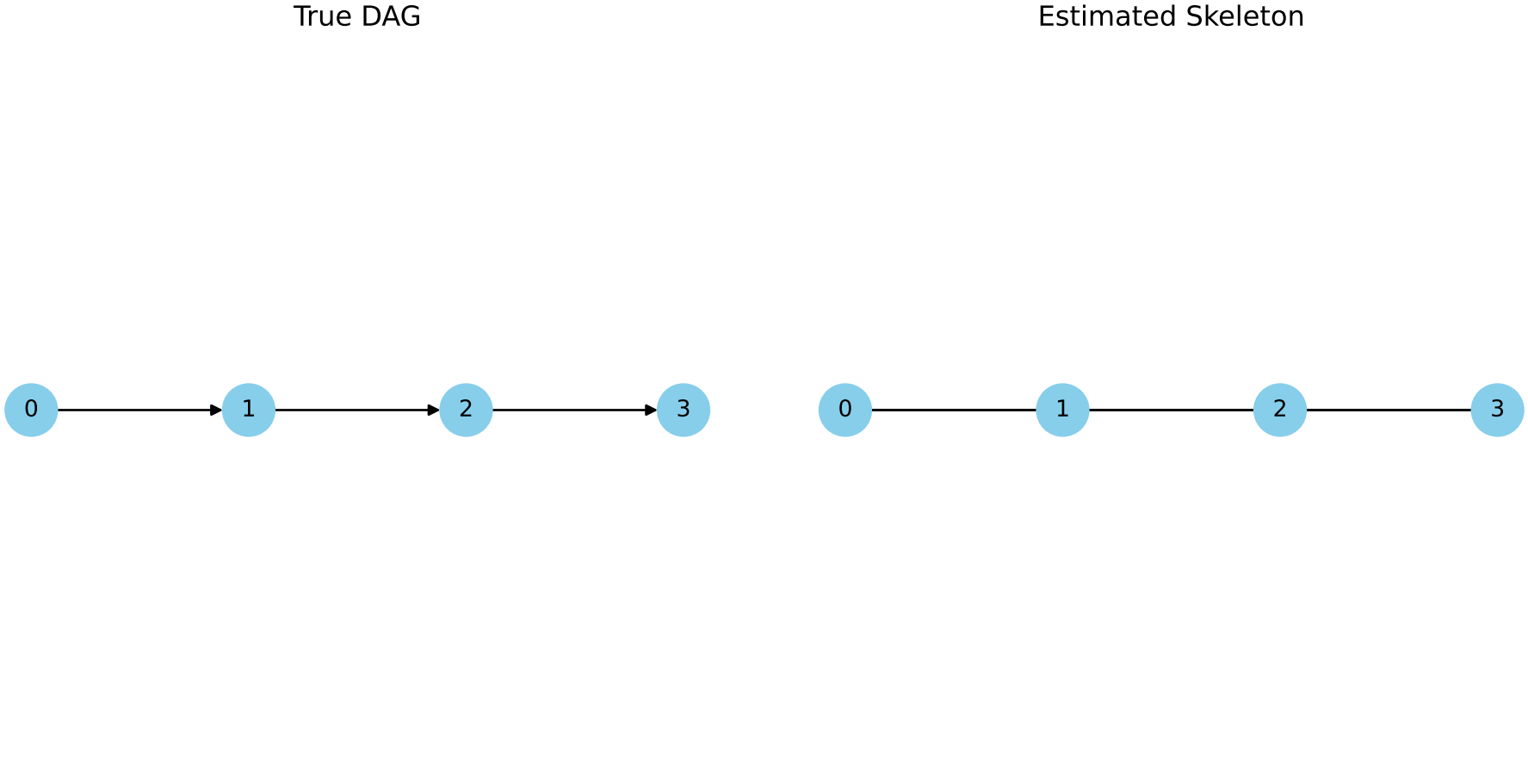
True DAG
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2
3
Estimated Skeleton
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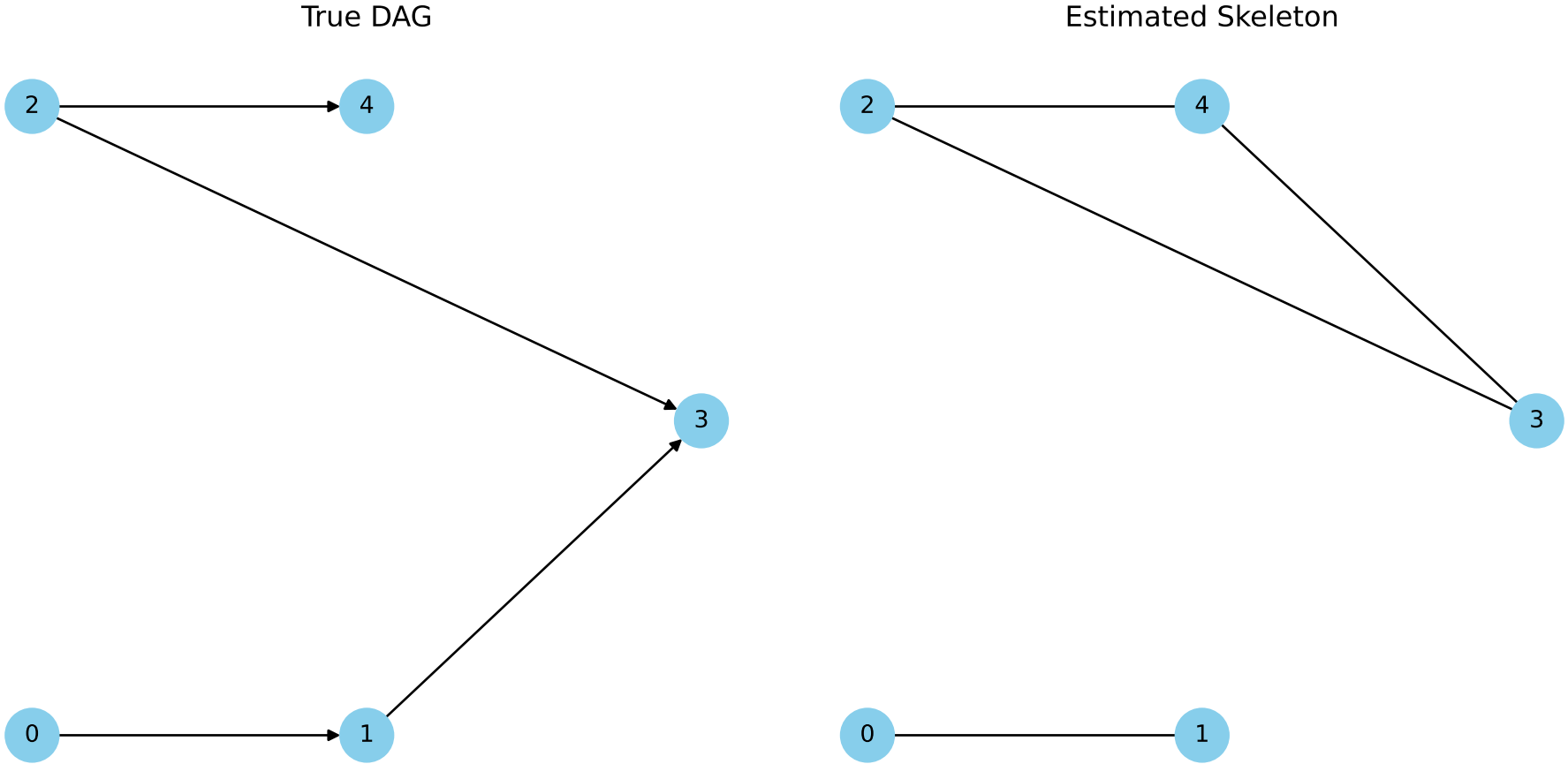
1
2
3


True DAG
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1
Estimated Skeleton
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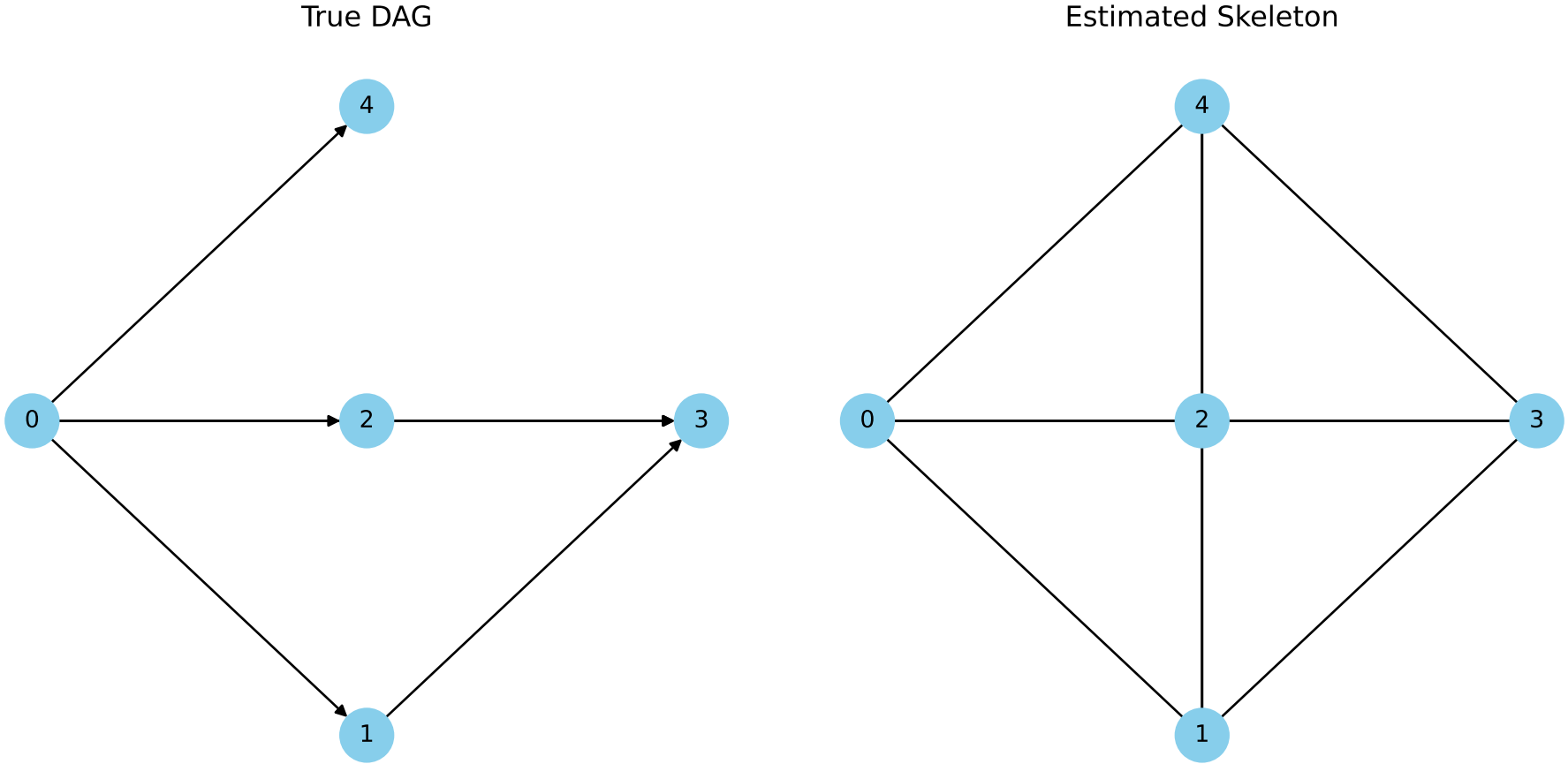
4
3
0
1


True DAG
4
0
2
3
1
Estimated Skeleton
4
0
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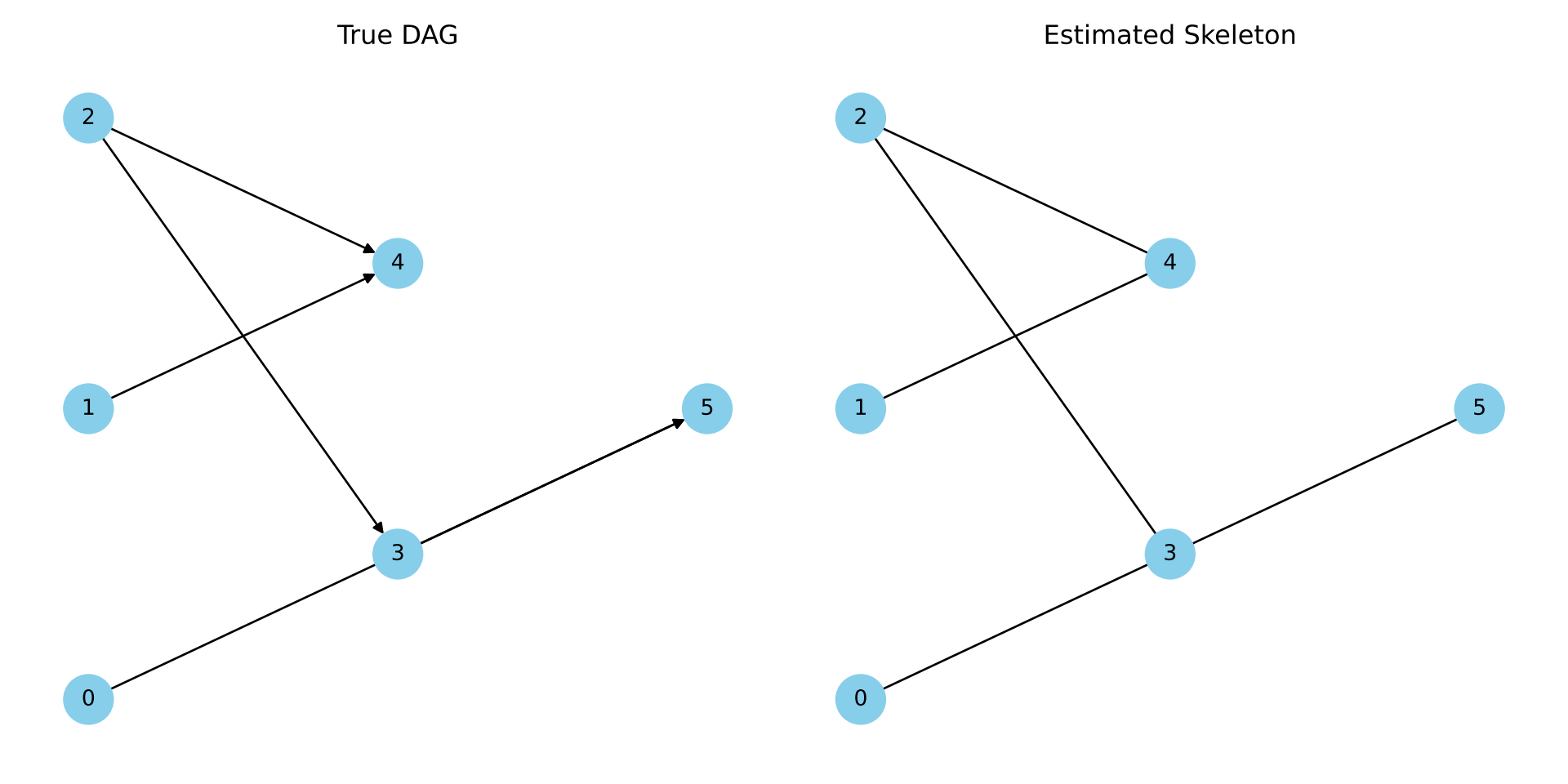
3
1


True DAG
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Estimated Skeleton
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1
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3
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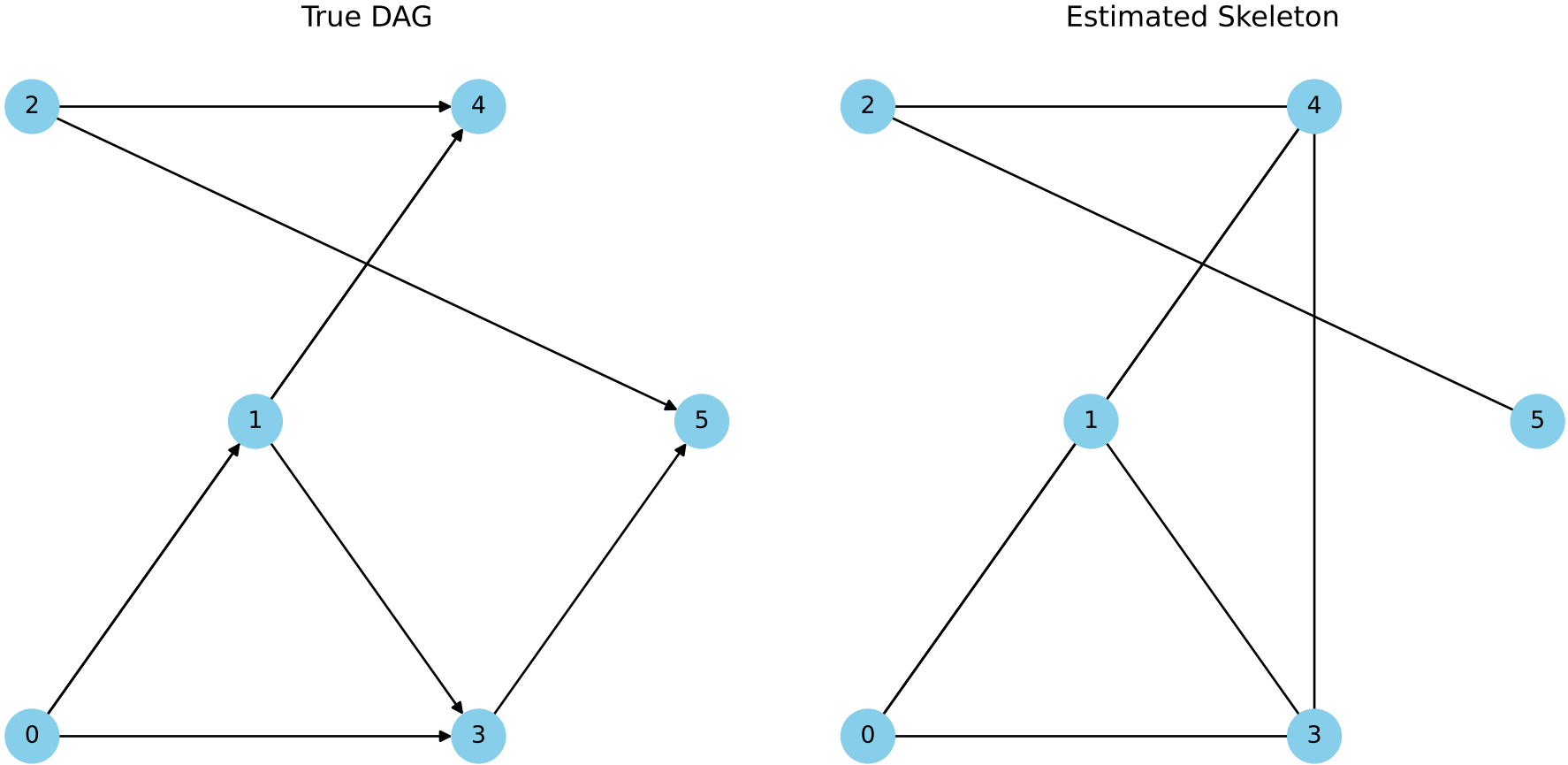
True DAG
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0
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Estimated Skeleton
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1
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0
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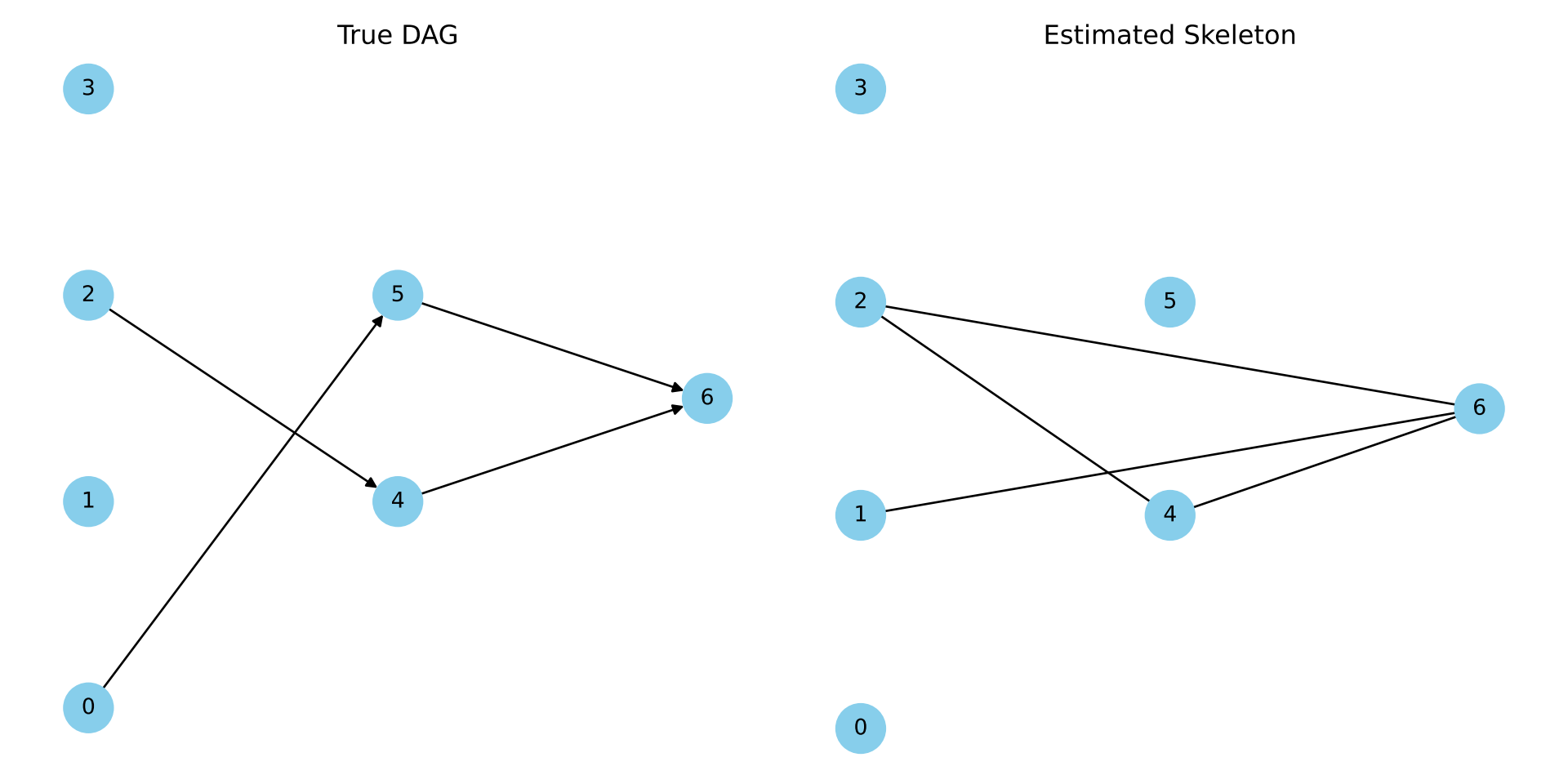
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2
5
6
1
4
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Estimated Skeleton
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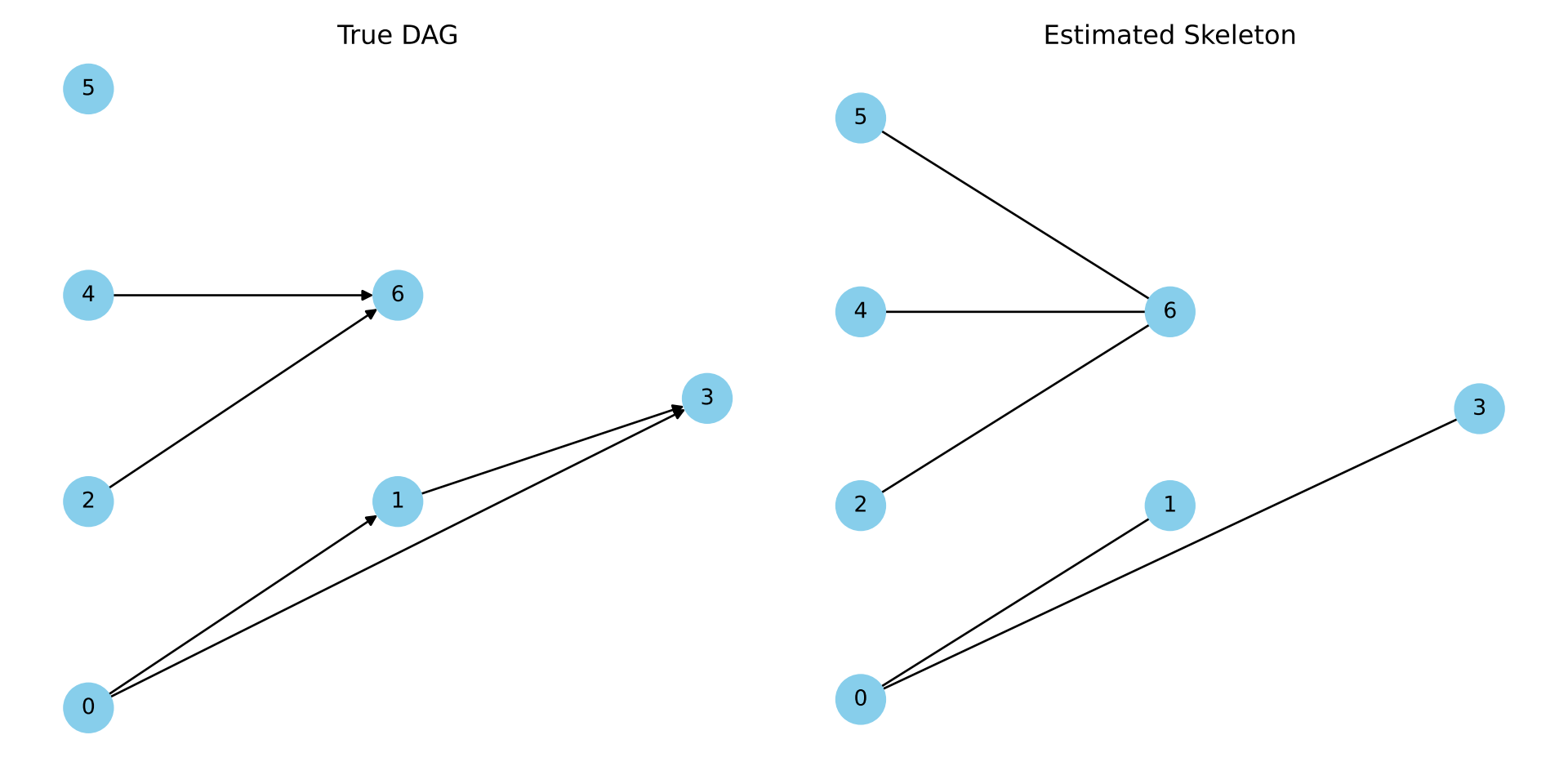
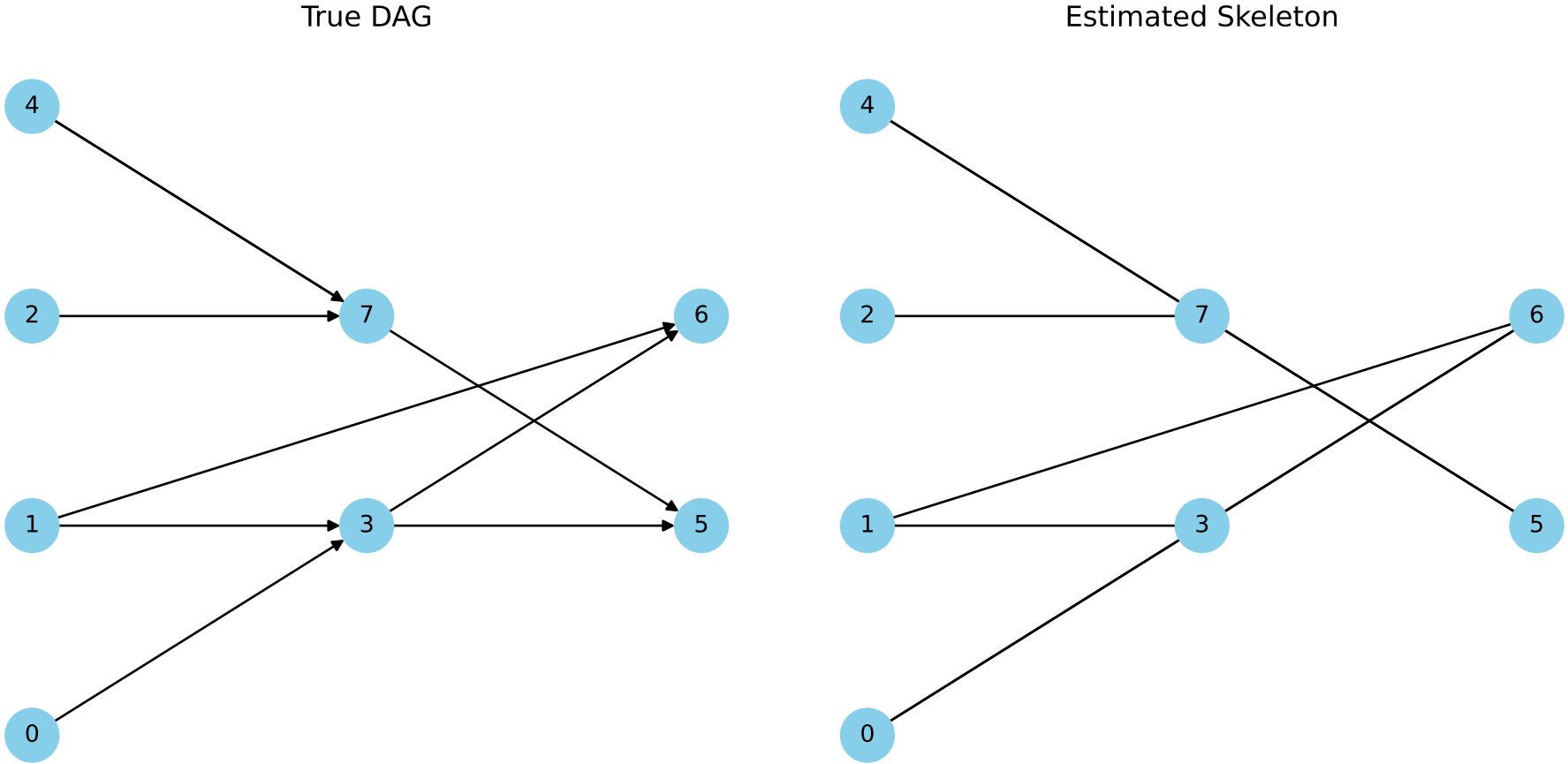
5
6
1
4
0


True DAG
5
4
6
2
1
3
0
Estimated Skeleton
5
4
6
2
1
3
0


True DAG
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1
3
5
0
Estimated Skeleton
4
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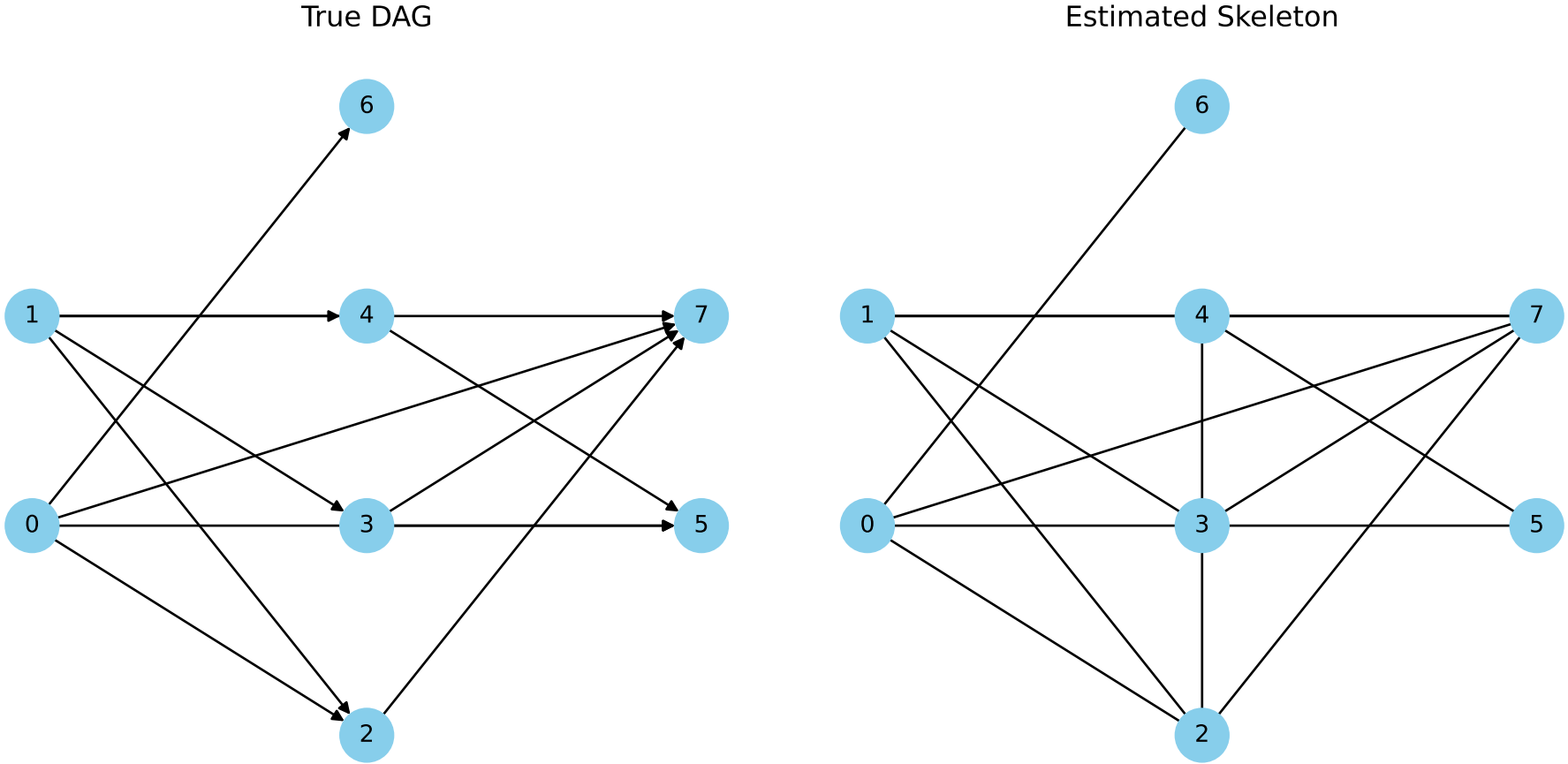
7
6
1
3
5
0


True DAG
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5
2
Estimated Skeleton
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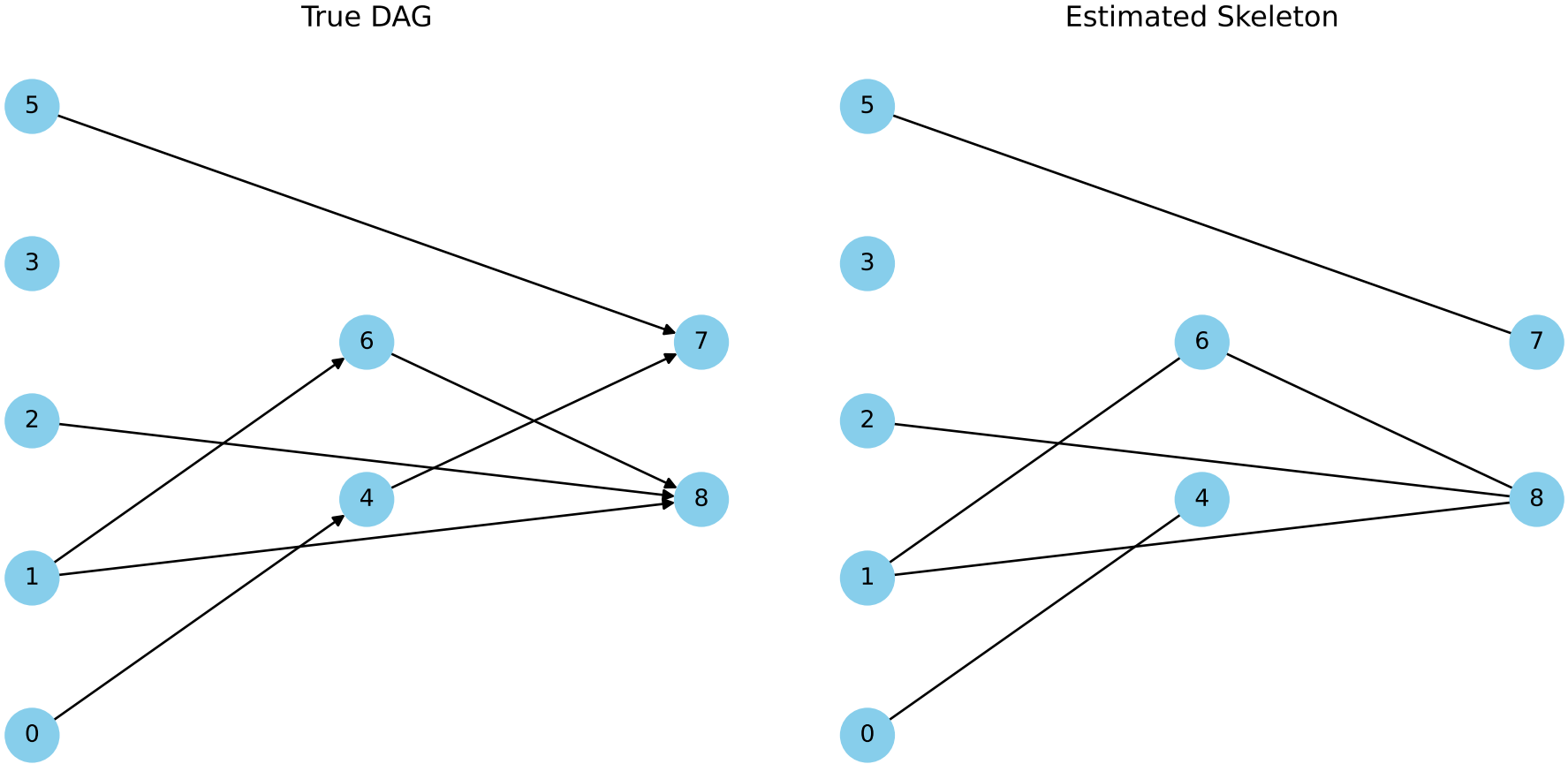
2


True DAG
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3
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2
4
8
1
0
Estimated Skeleton
5
3
6
7
2
4
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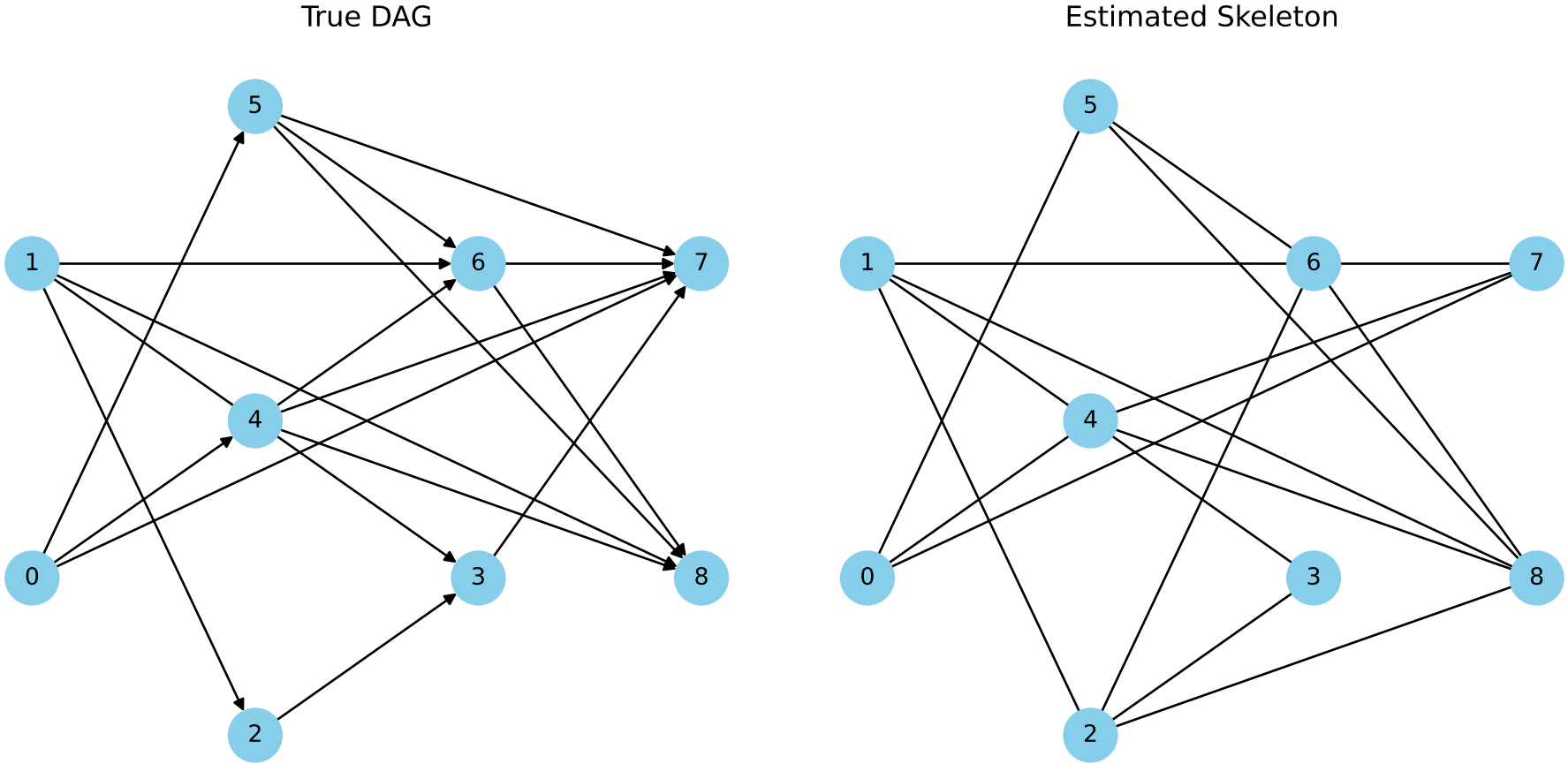
1
0


True DAG
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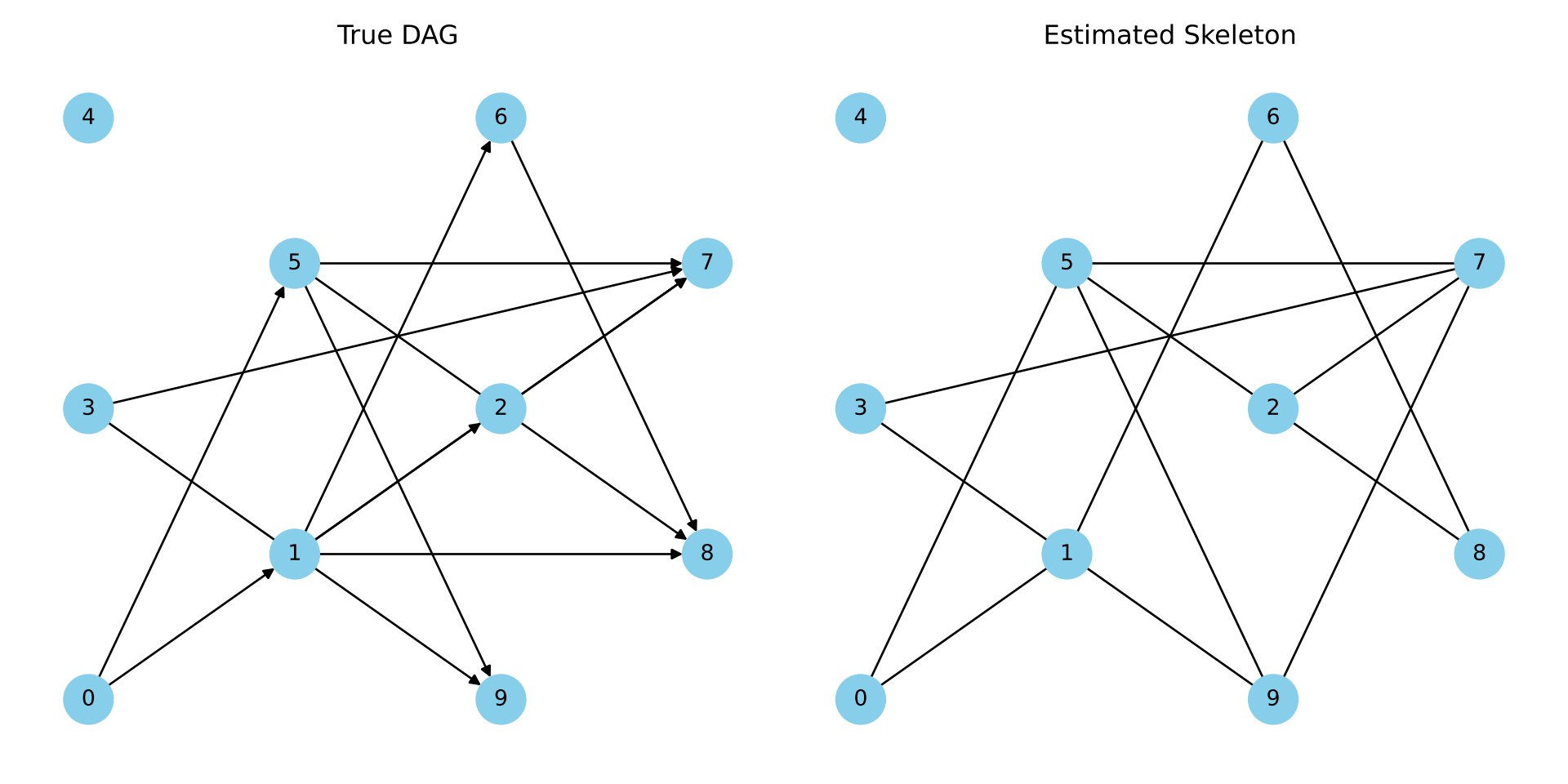
4
0
3
8
2
Estimated Skeleton
5
1
6
7
4
0
3
8
2


True DAG
4
6
5
7
3
2
1
8
0
9
Estimated Skeleton
4
6
5
7
3
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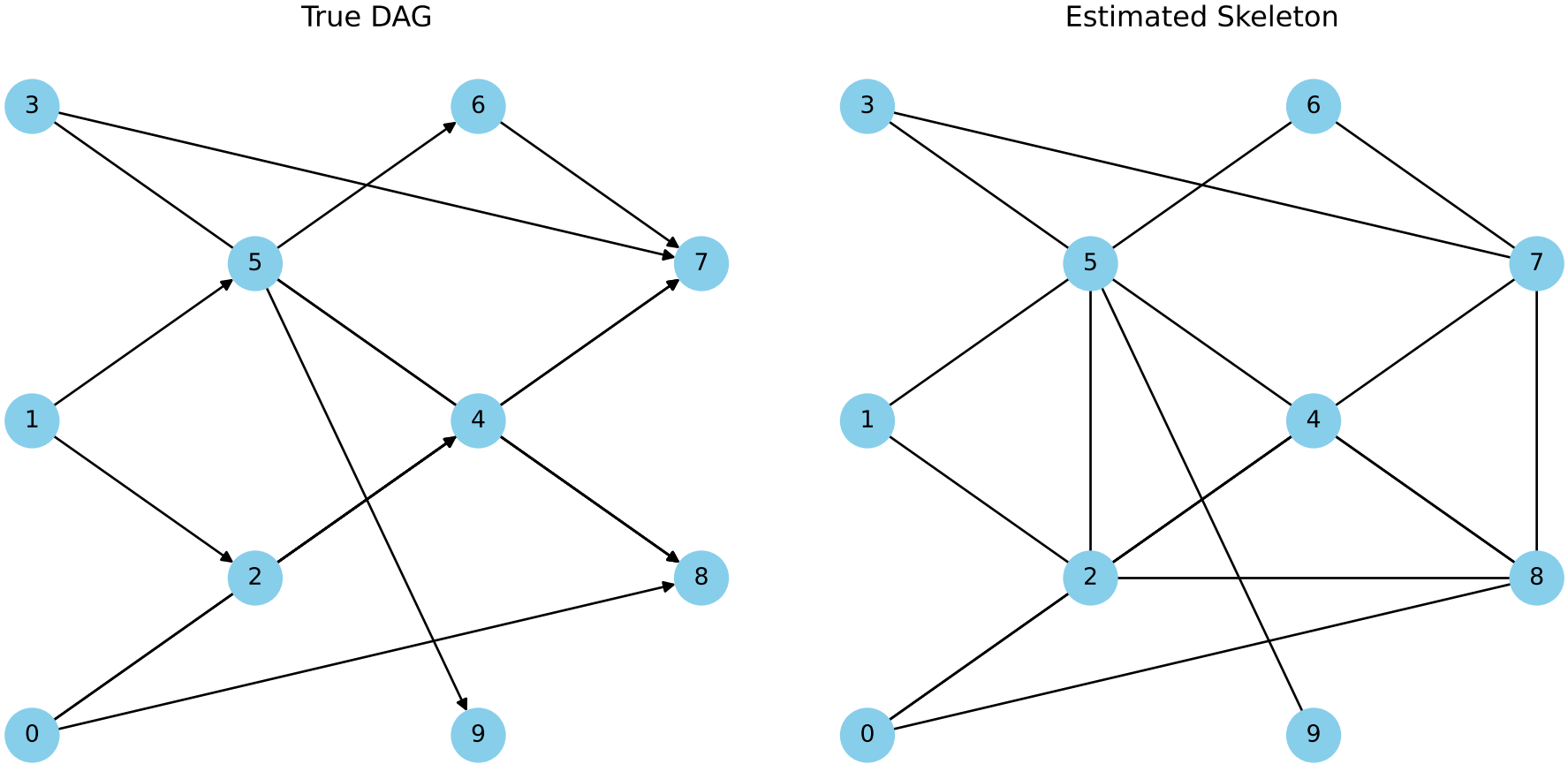
1
8
0
9


True DAG
3
6
5
7
1
4
2
8
0
9
Estimated Skeleton
3
6
5
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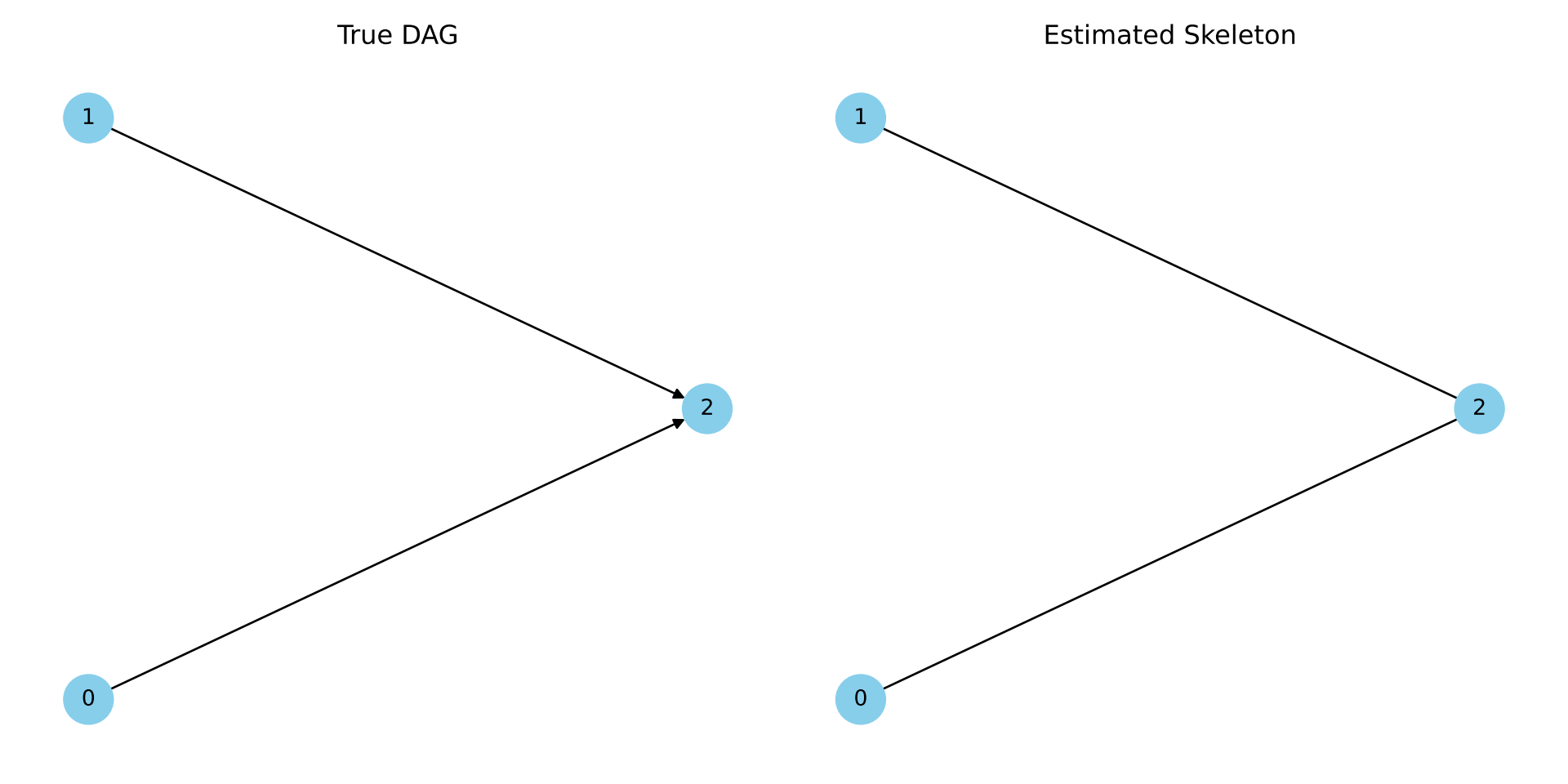
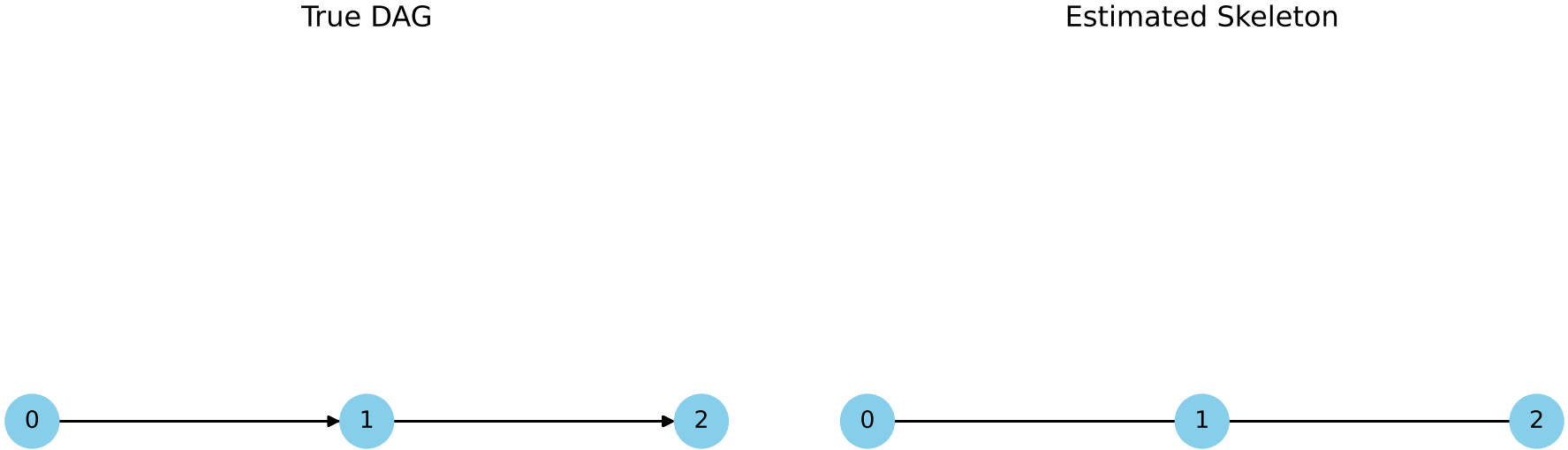
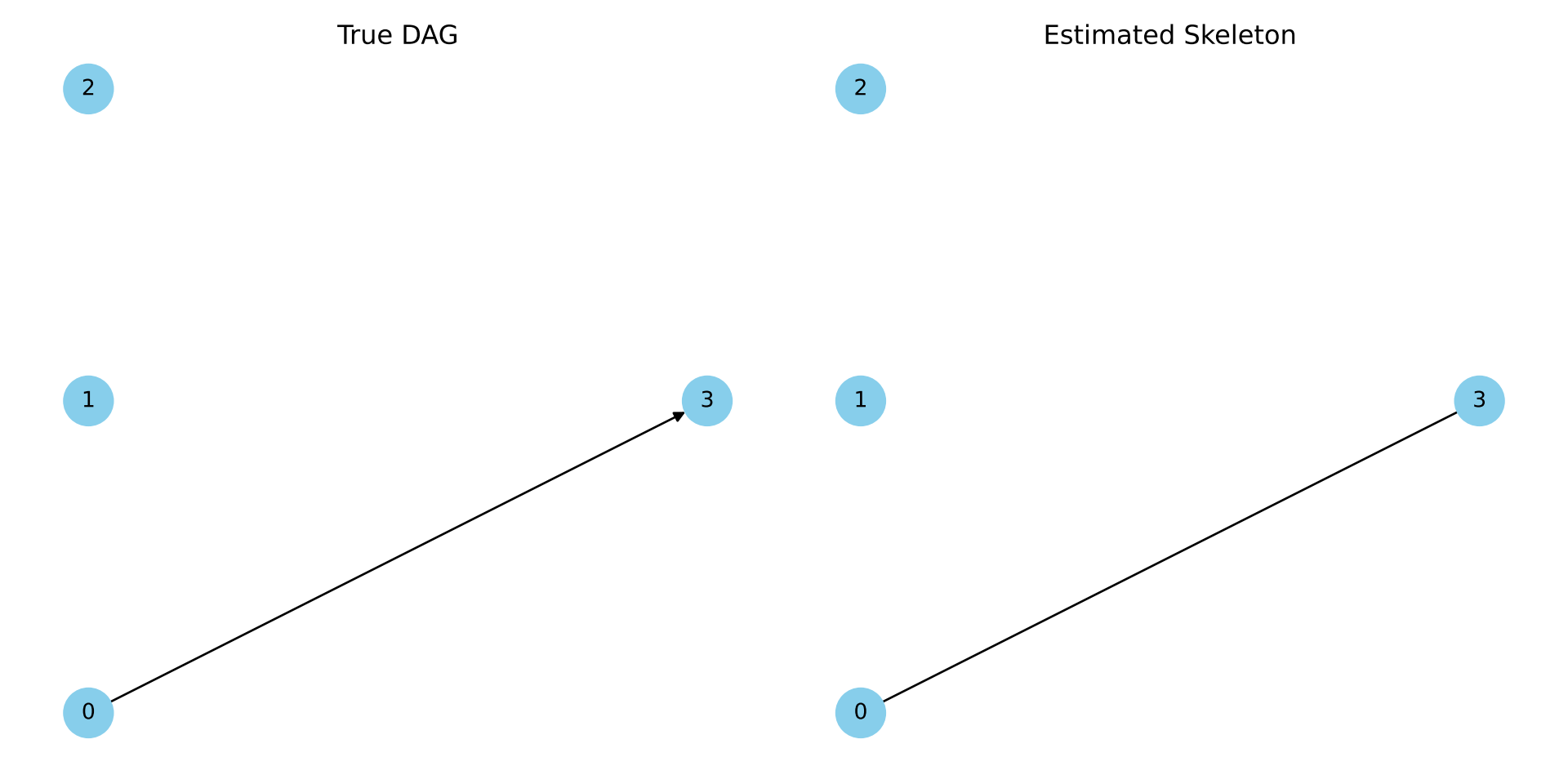
1
4
2
8
0
9

Models without faithfulness violations


True DAG
1
2
0
Estimated Skeleton
1
2
0


True DAG
0
1
2
Estimated Skeleton
0
1
2


True DAG
2
1
3
0
Estimated Skeleton
2
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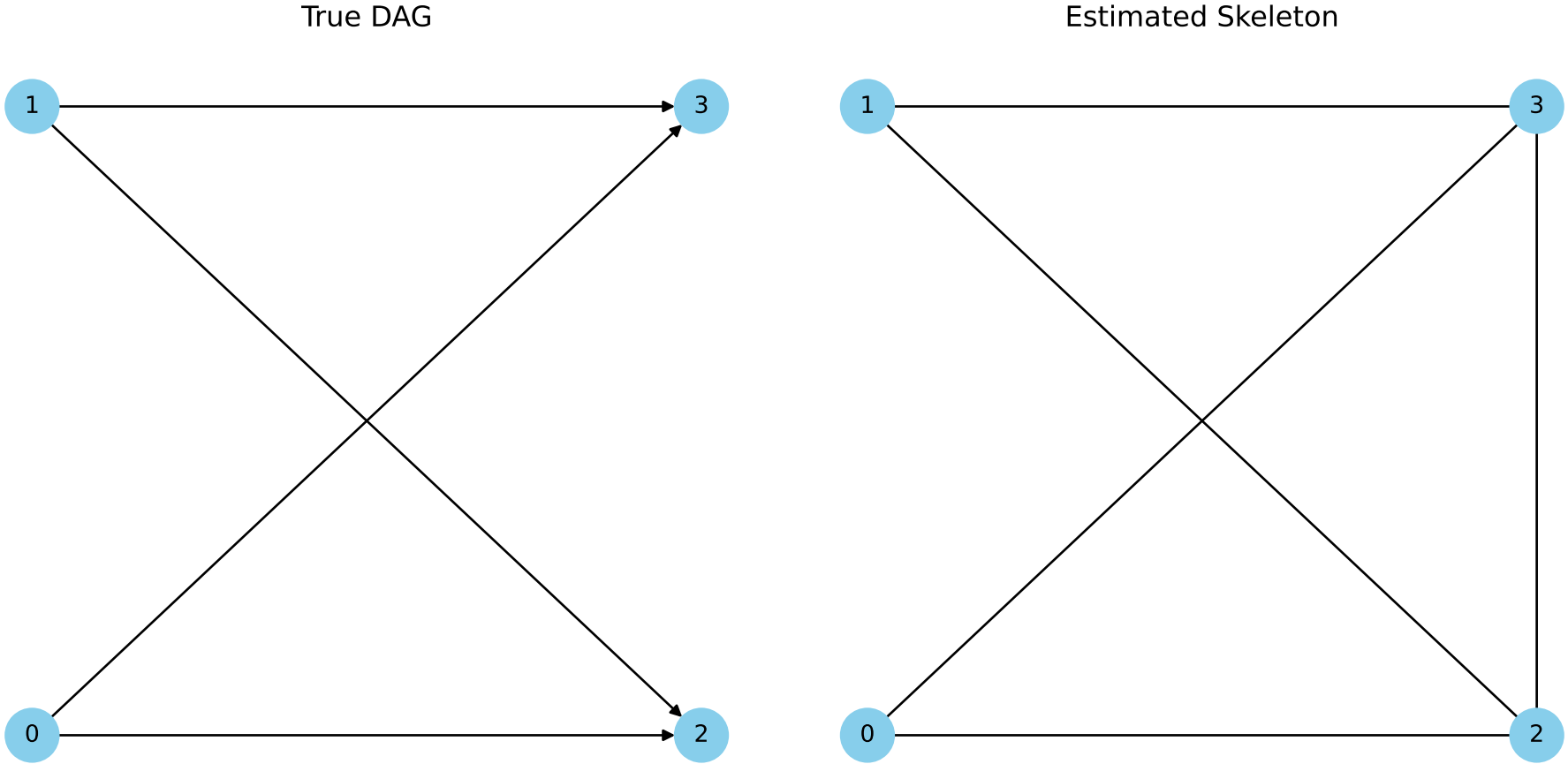
3
0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0
2
Estimated Skeleton
1
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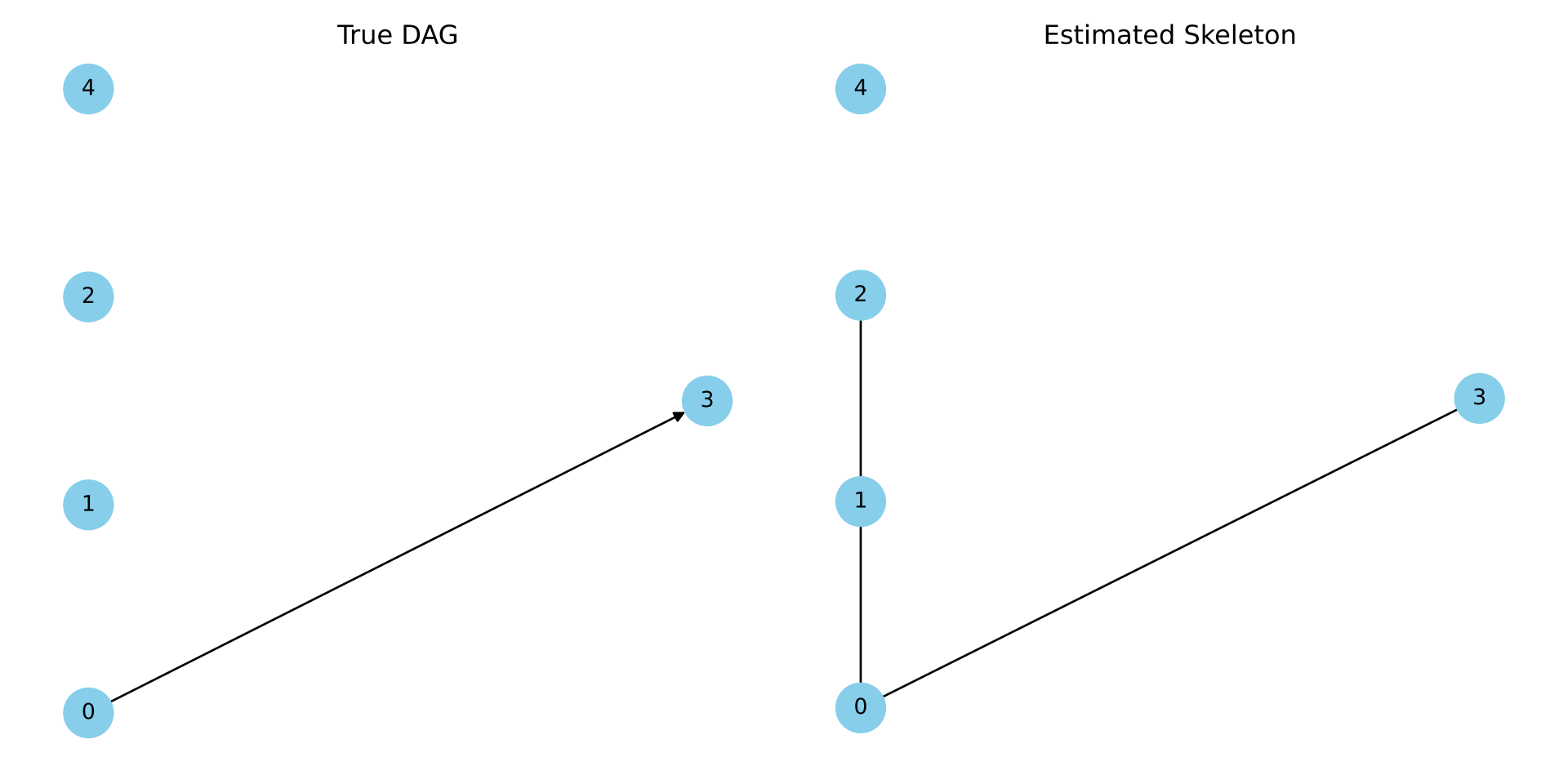
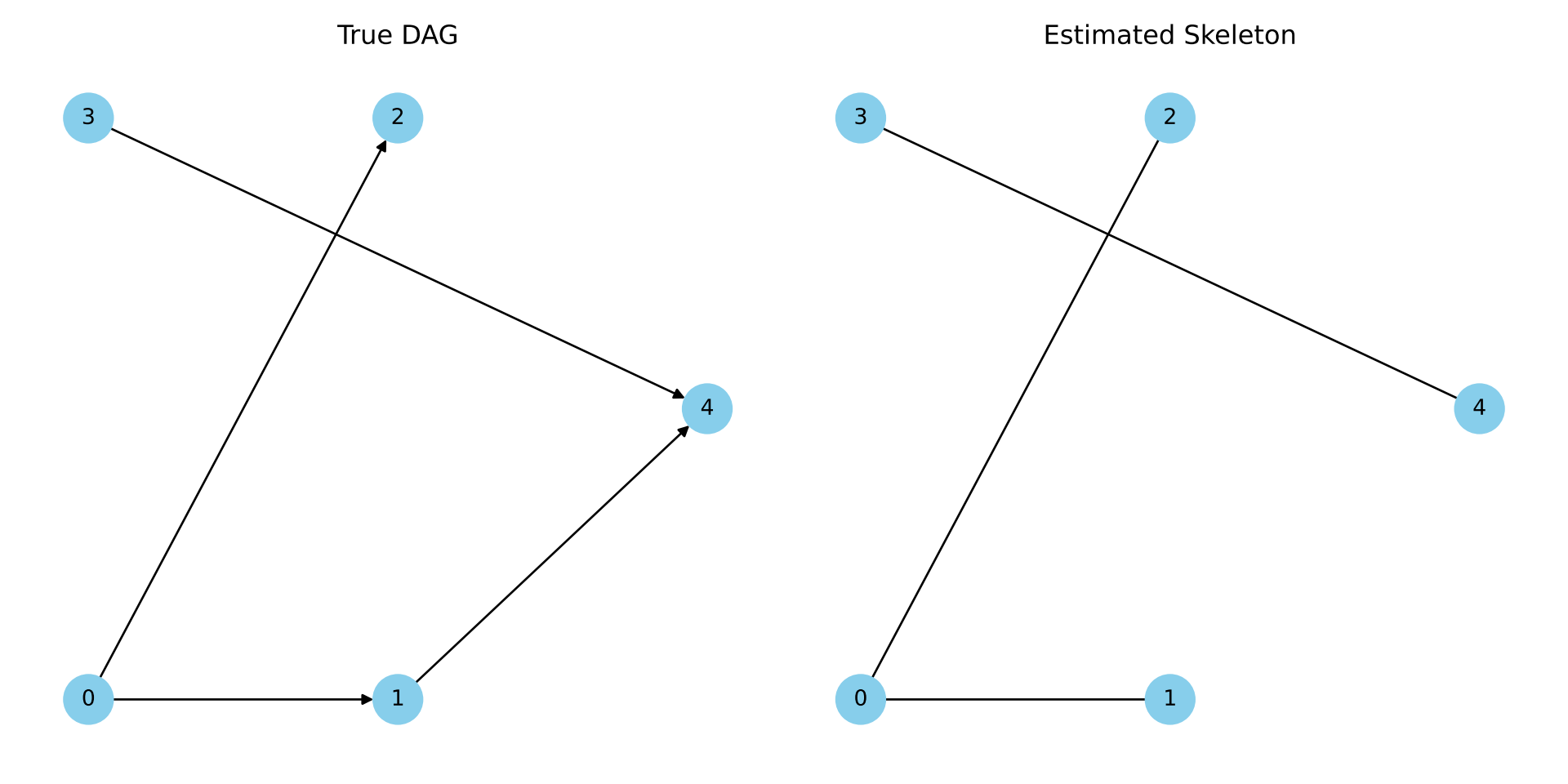
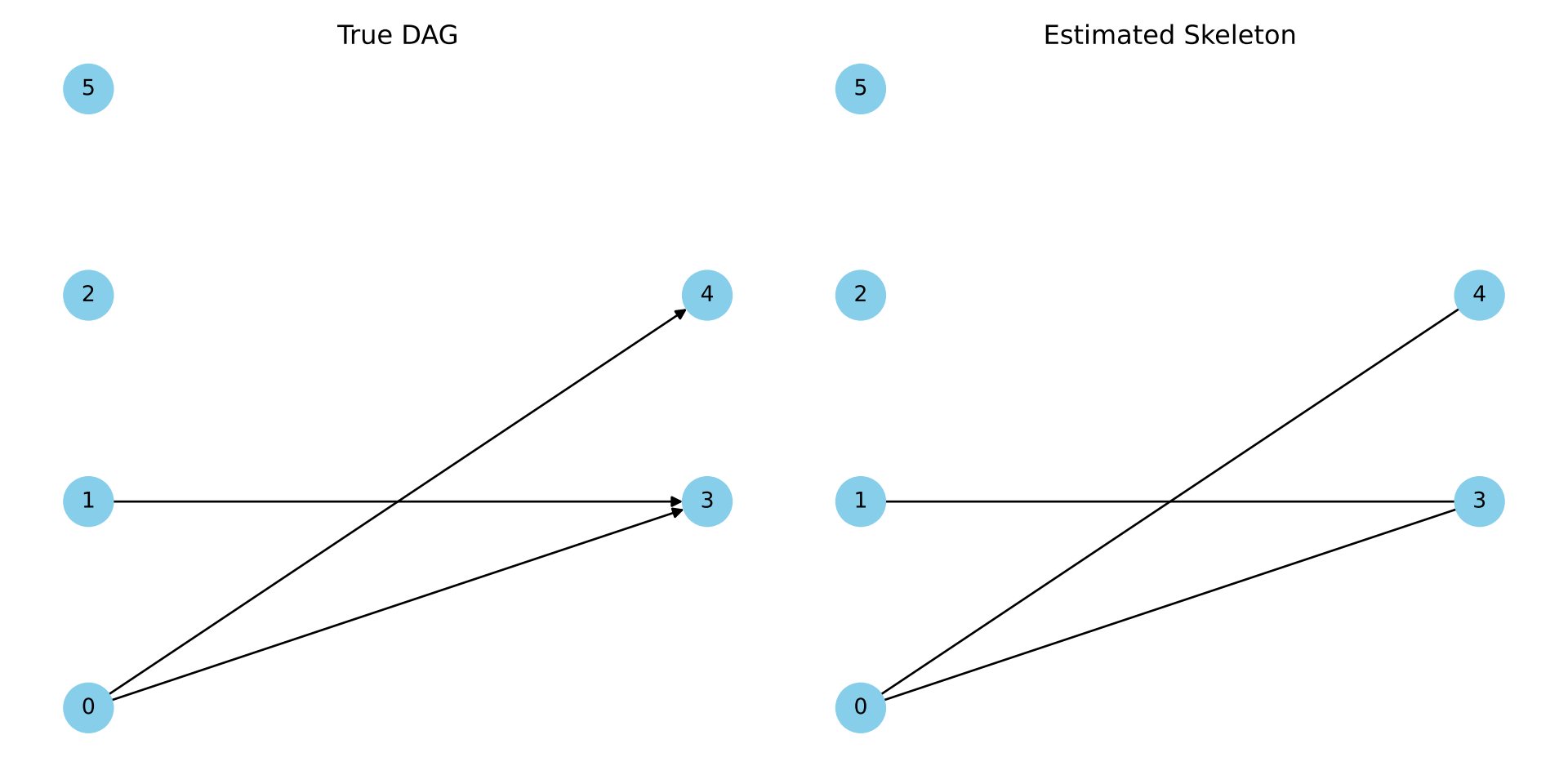
2


True DAG
4
2
3
1
0
Estimated Skeleton
4
2
3
1
0


True DAG
3
2
4
0
1
Estimated Skeleton
3
2
4
0
1


True DAG
5
2
4
1
3
0
Estimated Skeleton
5
2
4
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3
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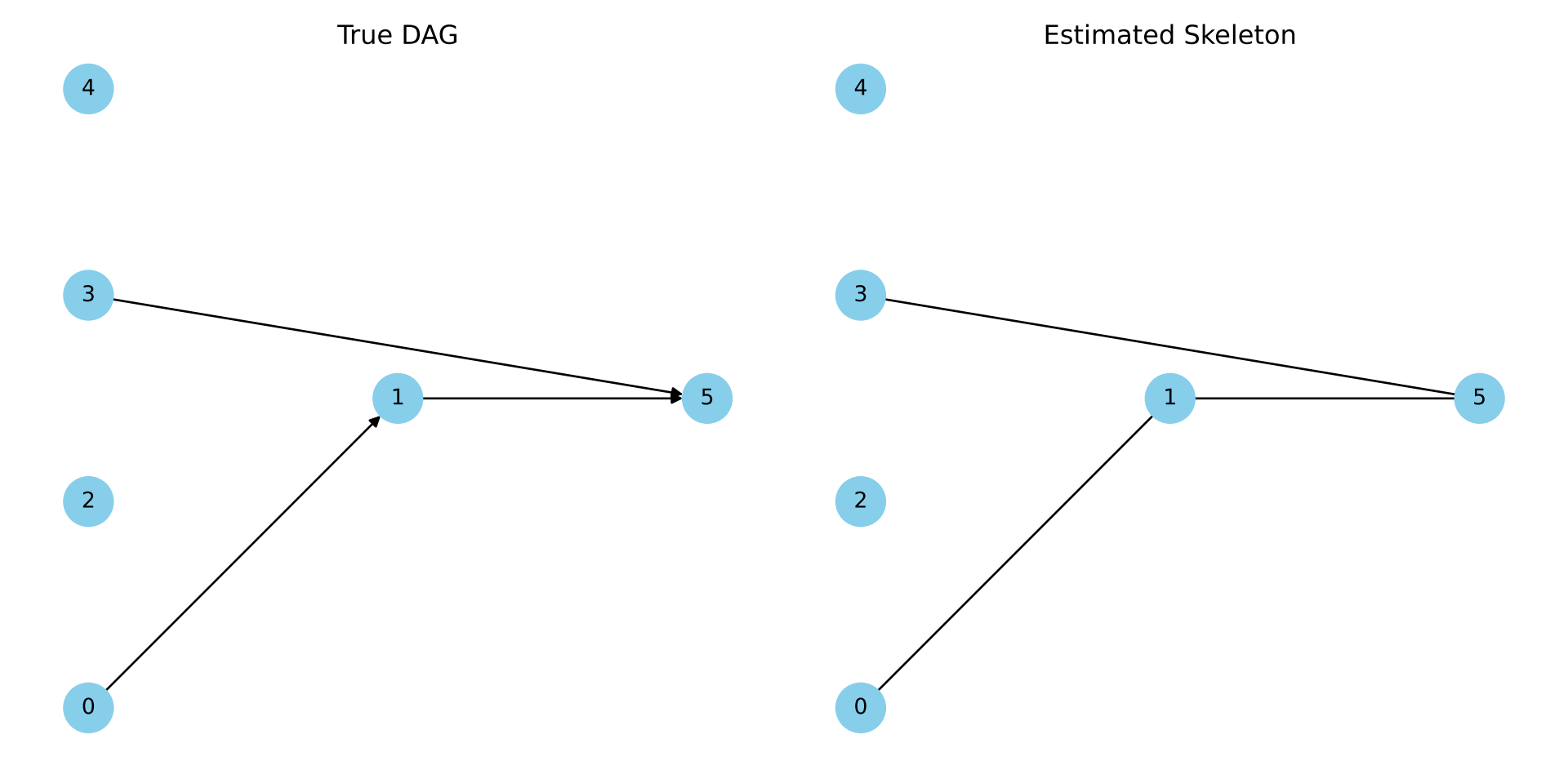
True DAG
4
3
1
5
2
0
Estimated Skeleton
4
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1
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2
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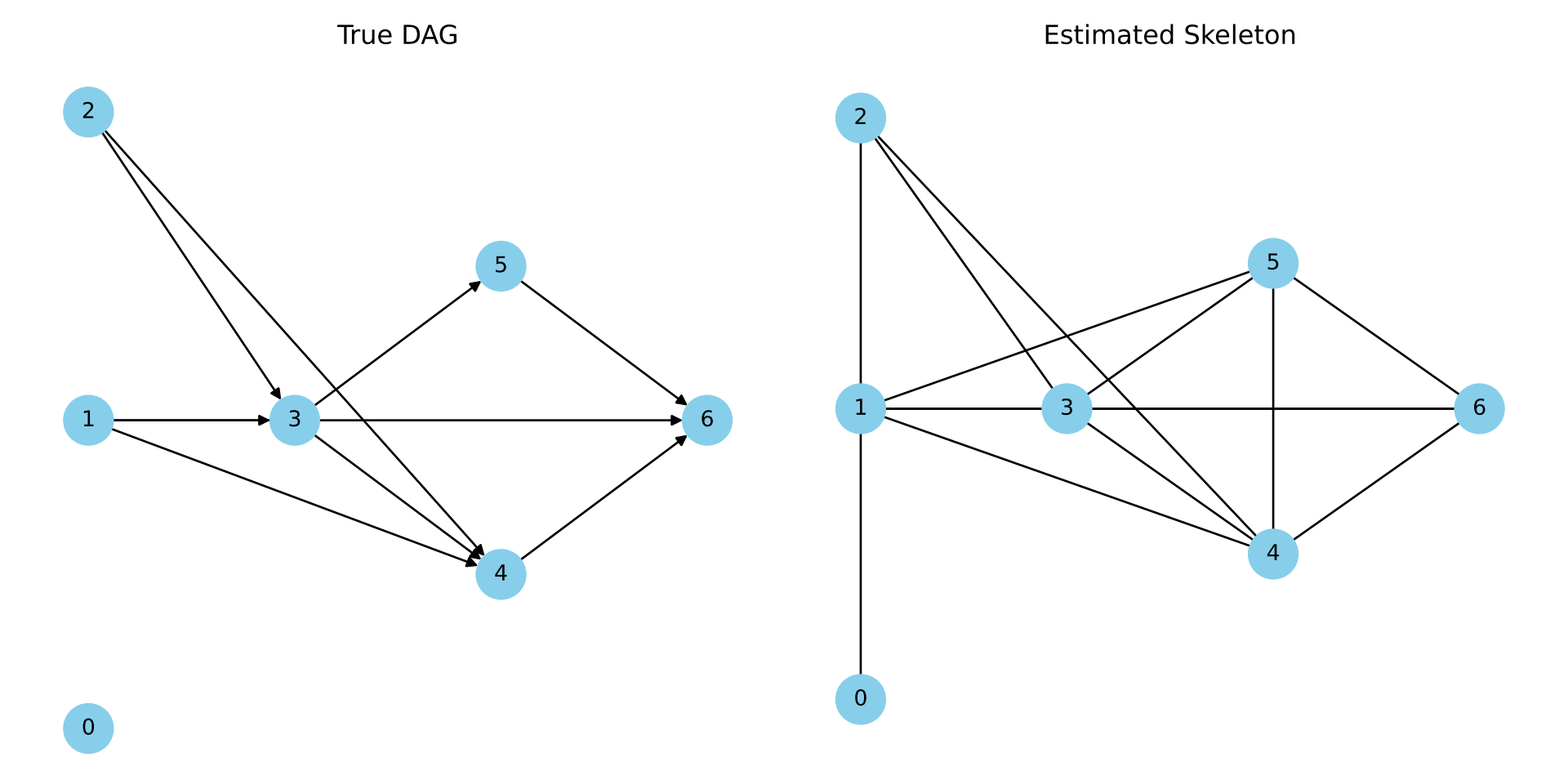
True DAG
2
5
1
3
6
4
0
Estimated Skeleton
2
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3
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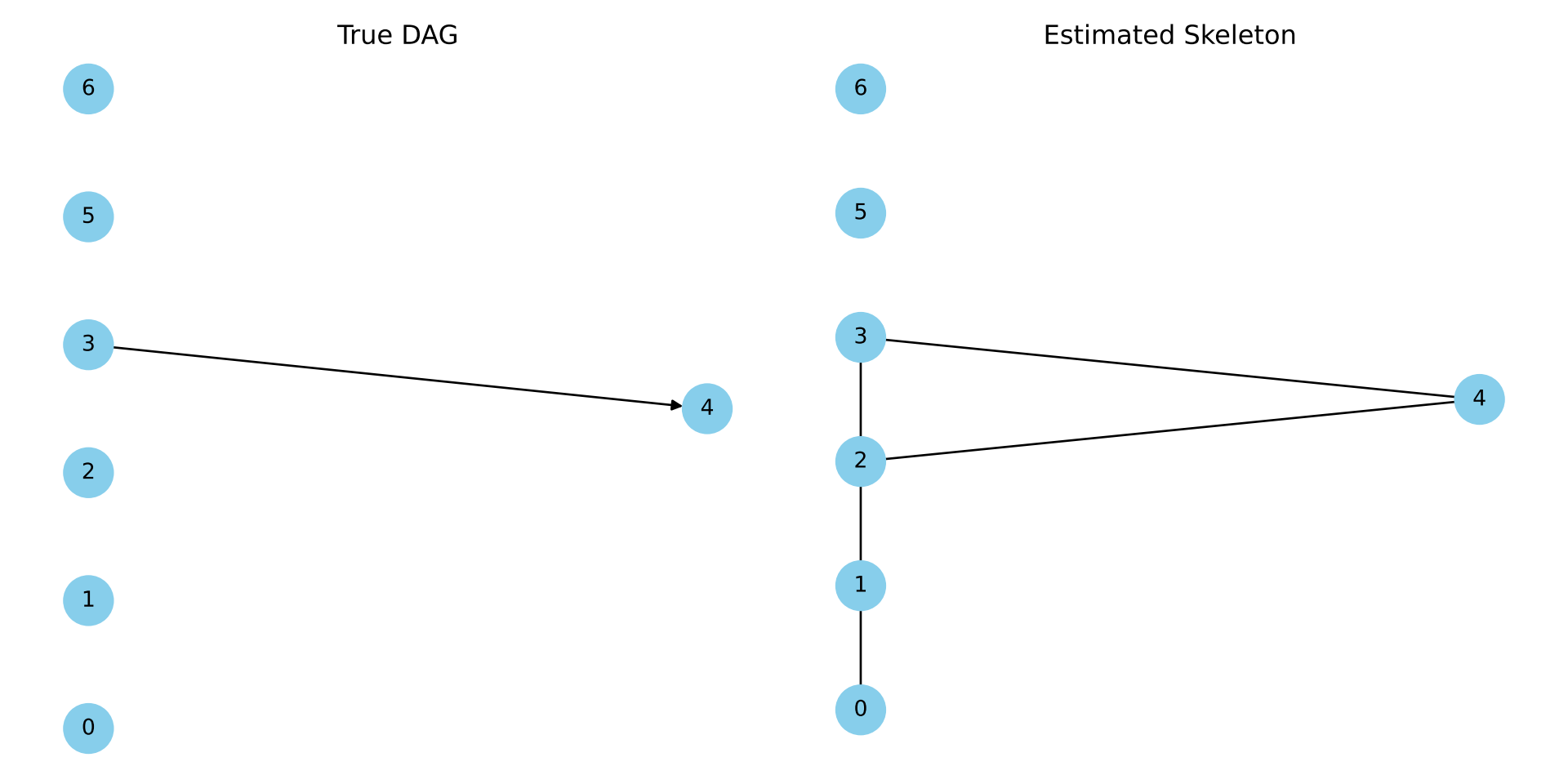
4
0


True DAG
6
5
3
4
2
1
0
Estimated Skeleton
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4
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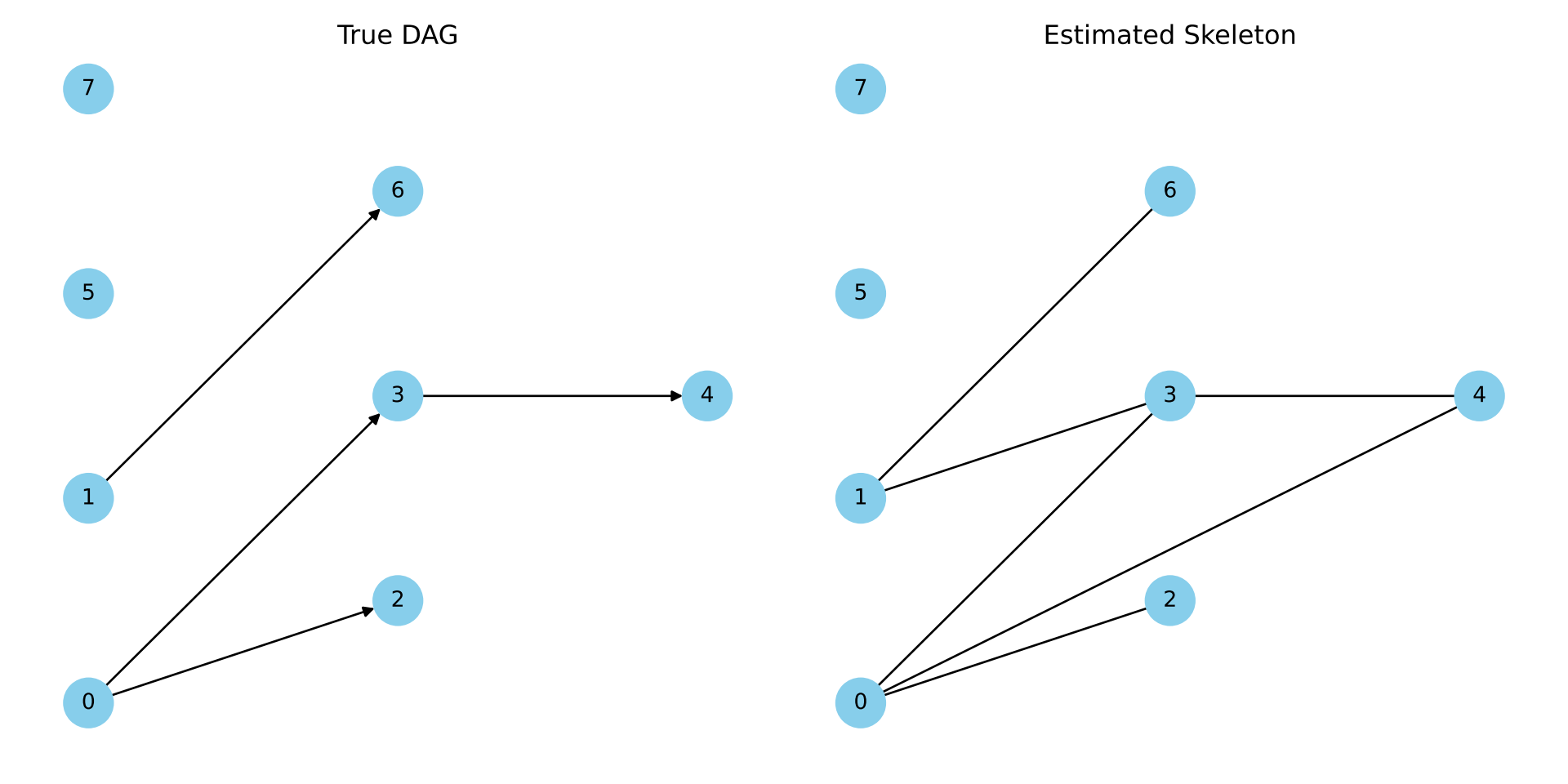
True DAG
7
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5
3
4
1
2
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Estimated Skeleton
7
6
5
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4
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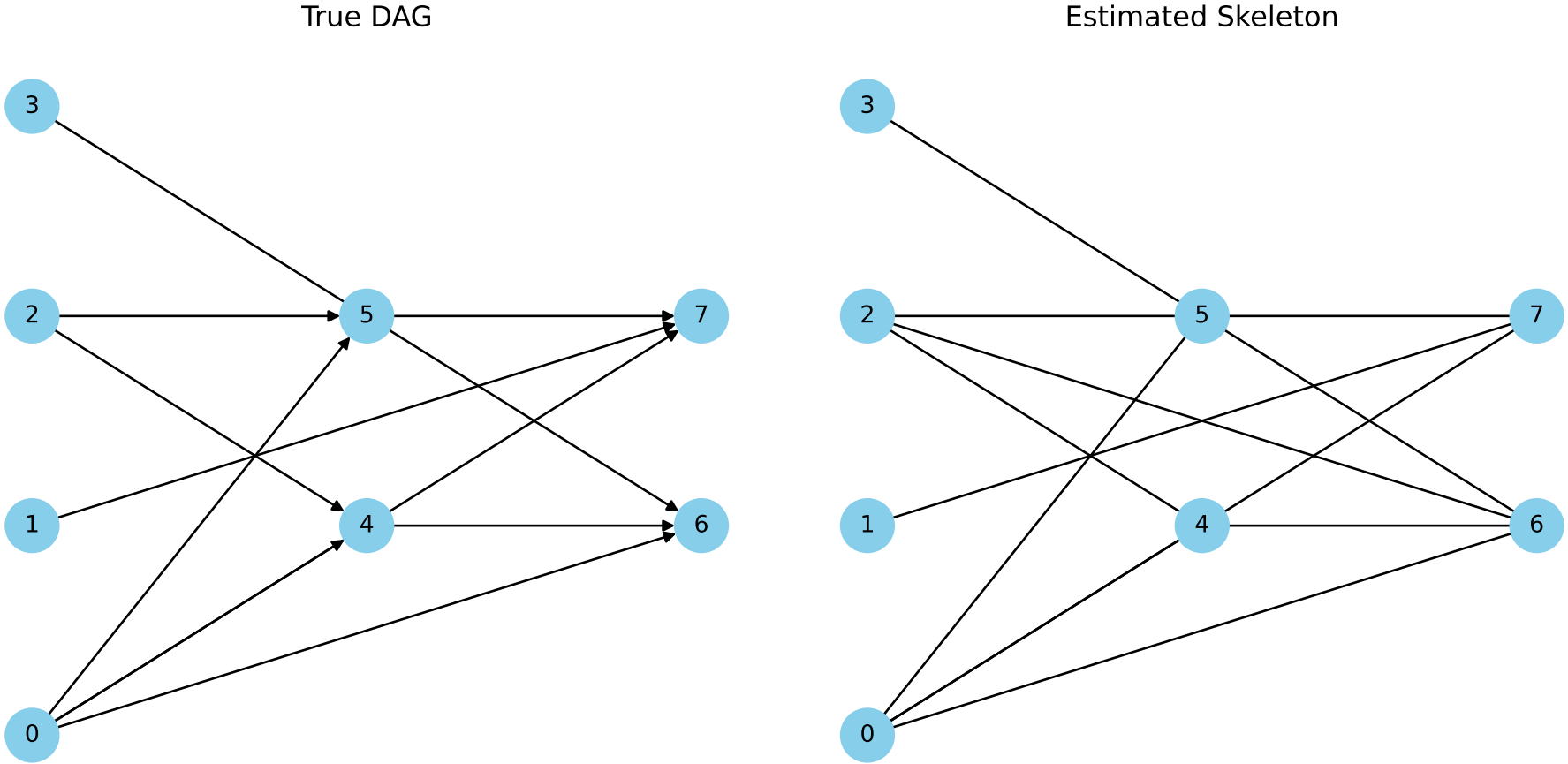
True DAG
3
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1
0
5
4
7
6
Estimated Skeleton
3
2
1
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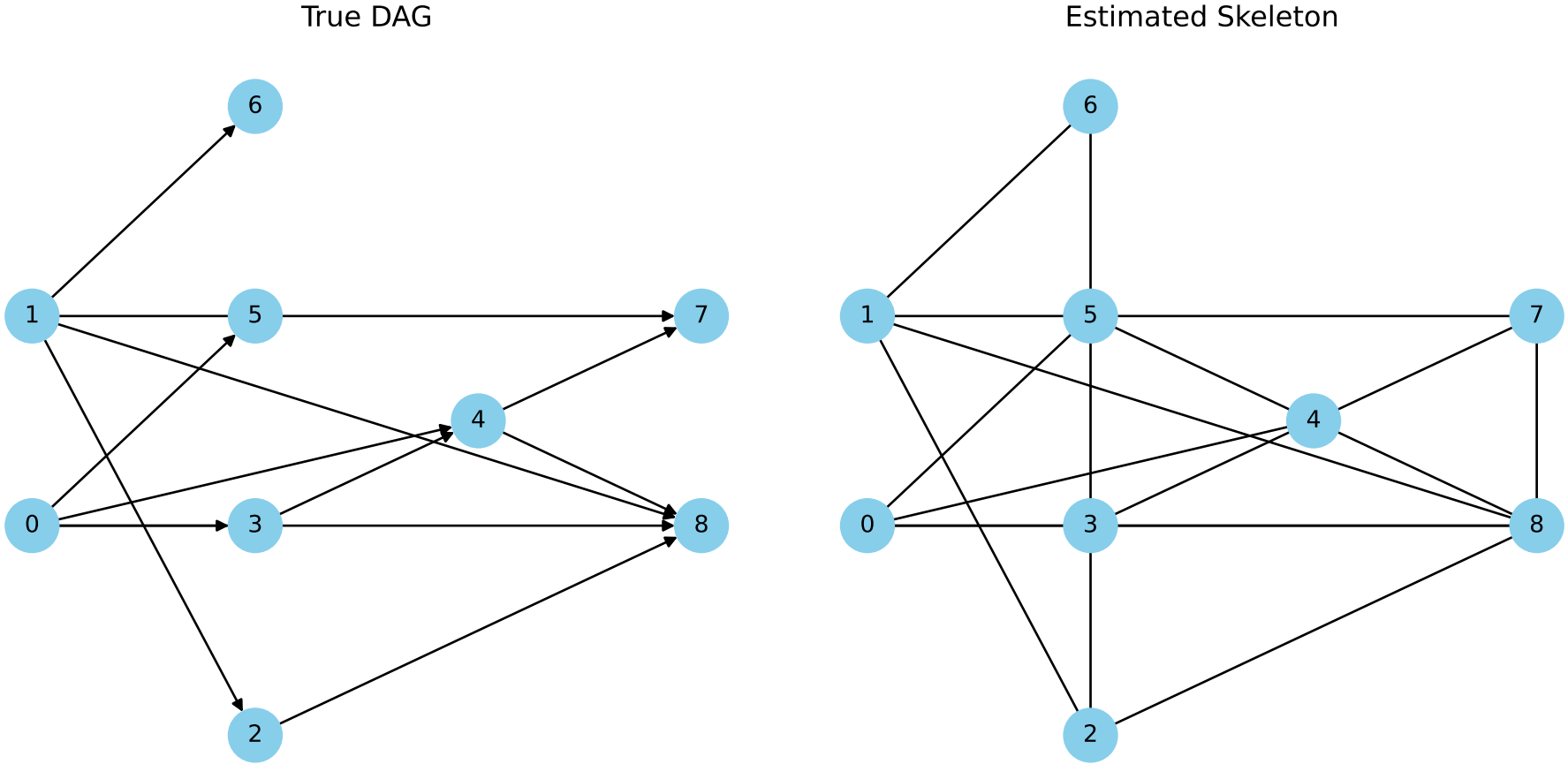
5
4
7
6


True DAG
6
1
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4
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3
8
2
Estimated Skeleton
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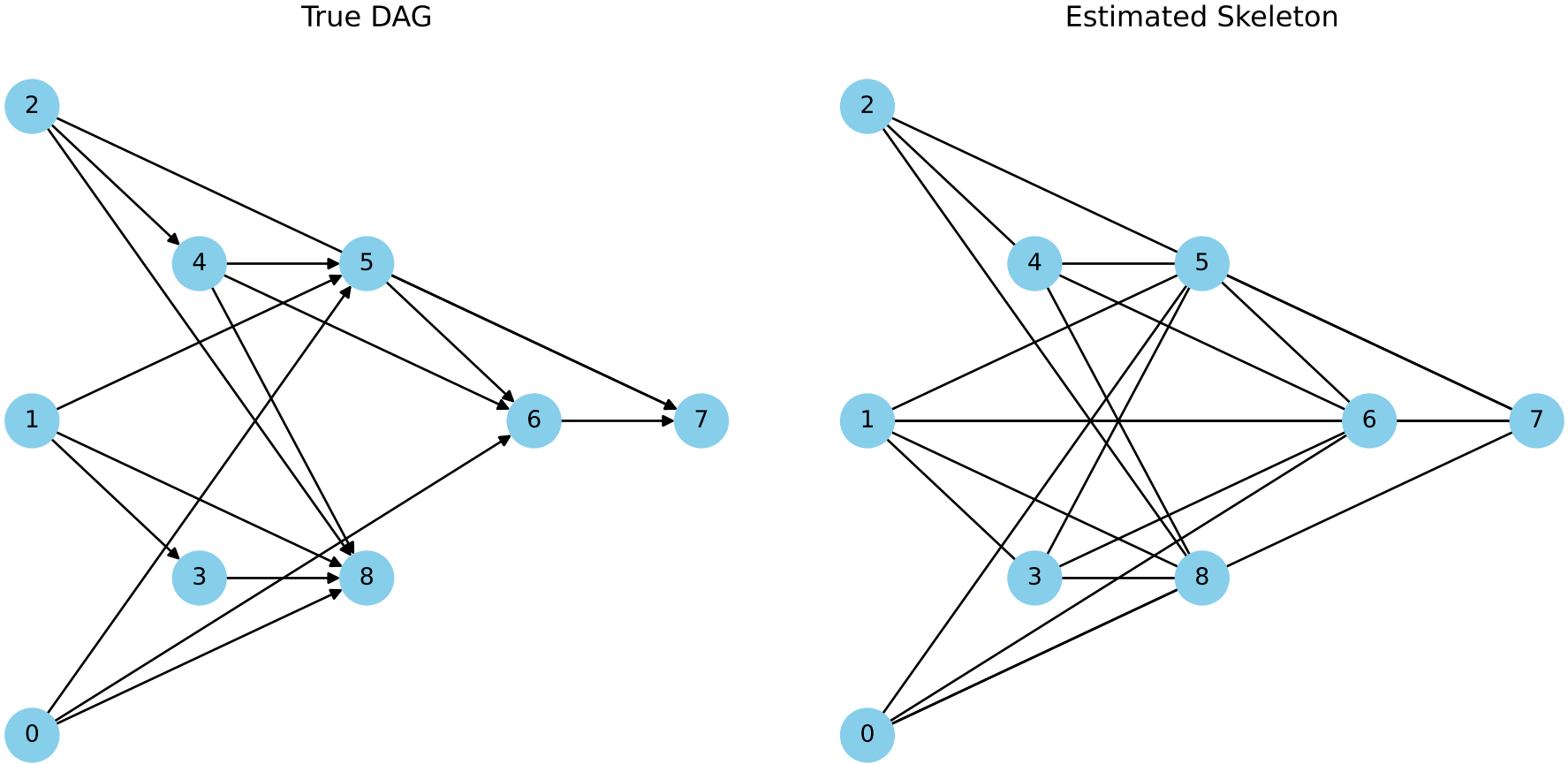
1
5
7
4
0
3
8
2


True DAG
2
4
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1
6
7
3
8
0
Estimated Skeleton
2
4
5
1
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7
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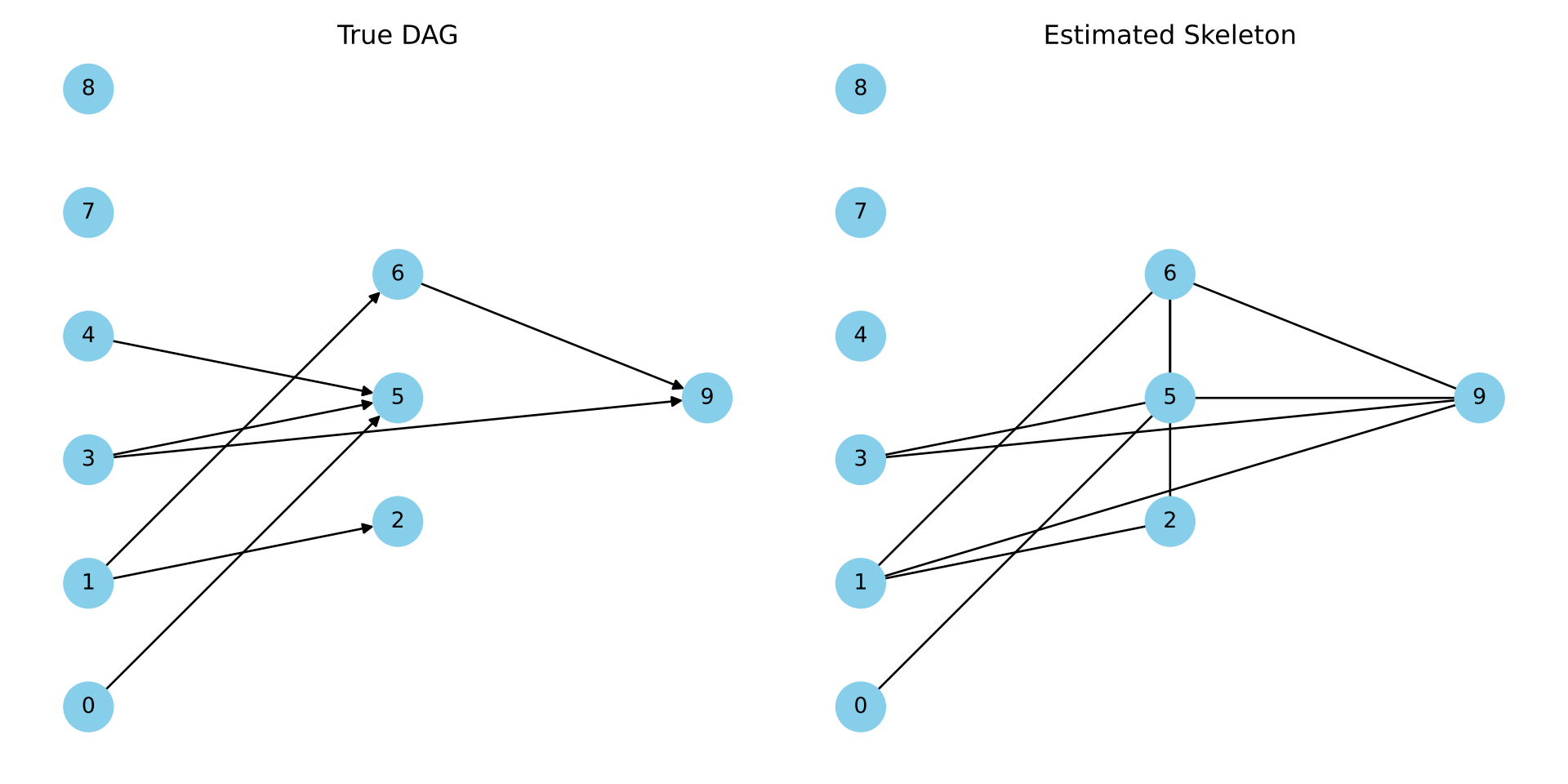
8
0


True DAG
8
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Estimated Skeleton
8
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6
4
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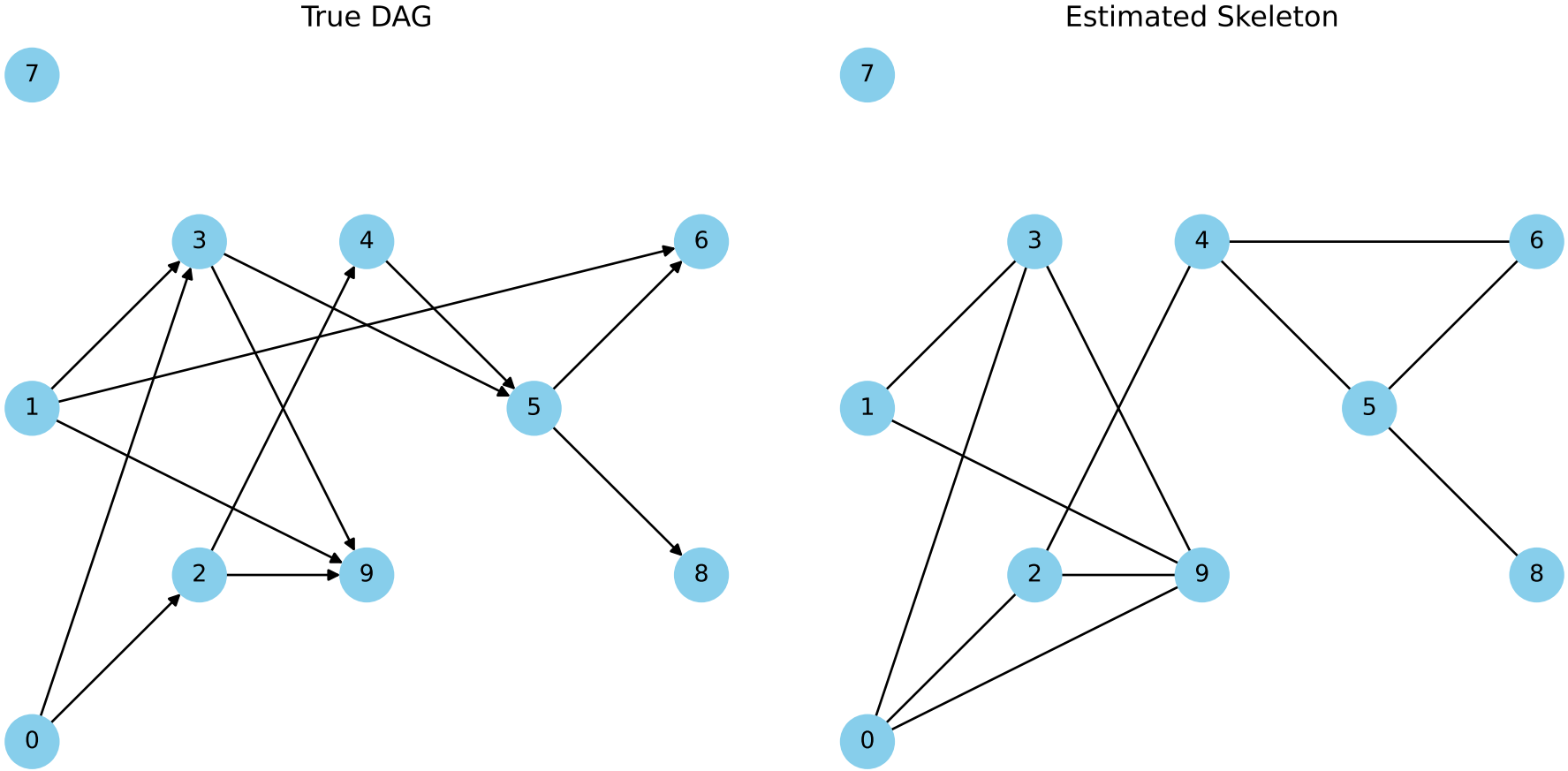
3
2
1
0


True DAG
7
3
4
6
1
5
2
9
8
0
Estimated Skeleton
7
3
4
6
1
5
2
9
8
0

This PDF gives an overview of the performance of the PC algorithm on discretisable models with faithfulness violations vs. discretisable models without faithfulness violations. The following table summarizes the accuracy of PC skeleton search:

Average accuracy for models with faithfulness violations: 0.917
Average accuracy for models without faithfulness violations: 0.962

Model Size	Faithfulness Violation	Accuracy
3	True	1.000
3	True	0.833
4	True	0.917
4	True	0.750
5	True	0.900
5	True	0.800
6	True	0.967
6	True	0.933
7	True	0.905
7	True	0.952
8	True	0.946
8	True	0.946
9	True	0.986
9	True	0.931
10	True	0.956
10	True	0.944
3	False	1.000
3	False	1.000
4	False	1.000
4	False	0.917
5	False	0.950
5	False	0.950
6	False	1.000
6	False	1.000
7	False	0.905
7	False	0.952
8	False	0.964
8	False	0.982
9	False	0.944
9	False	0.931
10	False	0.944
10	False	0.956