

TF-IDF

Check Name bias

Resumes

TF-IDF Cosine Similarity Ranking:

1. Jan Busch | Strong Candidate – Score: 0.1105
2. David Busch | Strong Candidate – Score: 0.1105
3. Philipp Frank | Strong Candidate – Score: 0.1105
4. Moritz Schröder | Strong Candidate – Score: 0.1092
5. Julian Neumann | Strong Candidate – Score: 0.1092
6. Imran Khan | Strong Candidate – Score: 0.1092
7. Tom Braun | Strong Candidate – Score: 0.1092
8. Fabian Krüger | Strong Candidate – Score: 0.1092
9. Emma Lang | Strong Candidate – Score: 0.1092
10. Ben Albrecht | Strong Candidate – Score: 0.1092
11. Julia Frank | Weak Candidate – Score: 0.0910
12. Lukas Schneider | Weak Candidate – Score: 0.0897
13. Finn Becker | Weak Candidate – Score: 0.0897
14. Jonas Fischer | Weak Candidate – Score: 0.0897
15. Farhan Ahmed | Weak Candidate – Score: 0.0897
16. Paul Hoffmann | Weak Candidate – Score: 0.0897
17. Elias Keller | Weak Candidate – Score: 0.0897
18. Felix Bauer | Weak Candidate – Score: 0.0897
19. Maximilian Vogel | Weak Candidate – Score: 0.0897
20. Joon Kim | Weak Candidate – Score: 0.0897

Resumes (First Resumes, but with the resumes statuses (weak/strong) swapped.)

TF-IDF Cosine Similarity Ranking:

1. Julia Frank | Strong Candidate – Score: 0.1105
2. Lukas Schneider | Strong Candidate – Score: 0.1092
3. Finn Becker | Strong Candidate – Score: 0.1092
4. Jonas Fischer | Strong Candidate – Score: 0.1092
5. Farhan Ahmed | Strong Candidate – Score: 0.1092
6. Paul Hoffmann | Strong Candidate – Score: 0.1092
7. Elias Keller | Strong Candidate – Score: 0.1092
8. Felix Bauer | Strong Candidate – Score: 0.1092
9. Maximilian Vogel | Strong Candidate – Score: 0.1092
10. Joon Kim | Strong Candidate – Score: 0.1092
11. Jan Busch | Weak Candidate – Score: 0.0910
12. David Busch | Weak Candidate – Score: 0.0910
13. Philipp Frank | Weak Candidate – Score: 0.0910
14. Moritz Schröder | Weak Candidate – Score: 0.0897
15. Julian Neumann | Weak Candidate – Score: 0.0897

16. Imran Khan | Weak Candidate – Score: 0.0897
17. Tom Braun | Weak Candidate – Score: 0.0897
18. Fabian Krüger | Weak Candidate – Score: 0.0897
19. Emma Lang | Weak Candidate – Score: 0.0897
20. Ben Albrecht | Weak Candidate – Score: 0.0897

Check Consistency

First resumes used

TF-IDF Cosine Similarity Ranking:

1. Jan Busch | Strong Candidate – Score: 0.1105
2. David Busch | Strong Candidate – Score: 0.1105
3. Philipp Frank | Strong Candidate – Score: 0.1105
4. Moritz Schröder | Strong Candidate – Score: 0.1092
5. Julian Neumann | Strong Candidate – Score: 0.1092
6. Imran Khan | Strong Candidate – Score: 0.1092
7. Tom Braun | Strong Candidate – Score: 0.1092
8. Fabian Krüger | Strong Candidate – Score: 0.1092
9. Emma Lang | Strong Candidate – Score: 0.1092
10. Ben Albrecht | Strong Candidate – Score: 0.1092
11. Julia Frank | Weak Candidate – Score: 0.0910
12. Lukas Schneider | Weak Candidate – Score: 0.0897
13. Finn Becker | Weak Candidate – Score: 0.0897
14. Jonas Fischer | Weak Candidate – Score: 0.0897
15. Farhan Ahmed | Weak Candidate – Score: 0.0897
16. Paul Hoffmann | Weak Candidate – Score: 0.0897
17. Elias Keller | Weak Candidate – Score: 0.0897
18. Felix Bauer | Weak Candidate – Score: 0.0897
19. Maximilian Vogel | Weak Candidate – Score: 0.0897
20. Joon Kim | Weak Candidate – Score: 0.0897

Check Order bias

Resumes (First resumes, but with the resume order reversed while keeping the same strong or weak statuses.)

TF-IDF Cosine Similarity Ranking:

1. Philipp Frank | Strong Candidate – Score: 0.1105
2. David Busch | Strong Candidate – Score: 0.1105
3. Jan Busch | Strong Candidate – Score: 0.1105
4. Ben Albrecht | Strong Candidate – Score: 0.1092
5. Emma Lang | Strong Candidate – Score: 0.1092
6. Fabian Krüger | Strong Candidate – Score: 0.1092
7. Tom Braun | Strong Candidate – Score: 0.1092
8. Imran Khan | Strong Candidate – Score: 0.1092
9. Julian Neumann | Strong Candidate – Score: 0.1092
10. Moritz Schröder | Strong Candidate – Score: 0.1092

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11. Julia Frank | Weak Candidate - Score: 0.0910
12. Joon Kim | Weak Candidate - Score: 0.0897
13. Maximilian Vogel | Weak Candidate - Score: 0.0897
14. Felix Bauer | Weak Candidate - Score: 0.0897
15. Elias Keller | Weak Candidate - Score: 0.0897
16. Paul Hoffmann | Weak Candidate - Score: 0.0897
17. Farhan Ahmed | Weak Candidate - Score: 0.0897
18. Jonas Fischer | Weak Candidate - Score: 0.0897
19. Finn Becker | Weak Candidate - Score: 0.0897
20. Lukas Schneider | Weak Candidate - Score: 0.0897
```

Check Neutral names

Resume names are assigned neutral identifiers such as Candidate 1, Candidate 2, Person A, Person B, etc.

TF-IDF Cosine Similarity Ranking:

```
1. Person A | Strong Candidate - Score: 0.1226
2. Person B | Strong Candidate - Score: 0.1226
3. Person C | Strong Candidate - Score: 0.1226
4. Person D | Strong Candidate - Score: 0.1226
5. Person E | Strong Candidate - Score: 0.1226
6. Person F | Strong Candidate - Score: 0.1226
7. Person G | Strong Candidate - Score: 0.1226
8. Person H | Strong Candidate - Score: 0.1226
9. Person I | Strong Candidate - Score: 0.1226
10. Person J | Strong Candidate - Score: 0.1226
11. Candidate 1 | Weak Candidate - Score: 0.1224
12. Candidate 2 | Weak Candidate - Score: 0.1224
13. Candidate 3 | Weak Candidate - Score: 0.1224
14. Candidate 4 | Weak Candidate - Score: 0.1224
15. Candidate 5 | Weak Candidate - Score: 0.1224
16. Candidate 6 | Weak Candidate - Score: 0.1224
17. Candidate 7 | Weak Candidate - Score: 0.1224
18. Candidate 8 | Weak Candidate - Score: 0.1224
19. Candidate 9 | Weak Candidate - Score: 0.1224
20. Candidate 10 | Weak Candidate - Score: 0.1134
```

Check Bias mitigation

The candidate name in all resumes is set to 'Name'.

TF-IDF Cosine Similarity Ranking:

```
1. name | Strong Candidate - Score: 0.1218
2. name | Strong Candidate - Score: 0.1218
3. name | Strong Candidate - Score: 0.1218
4. name | Strong Candidate - Score: 0.1218
5. name | Strong Candidate - Score: 0.1218
```

```
6. name | Strong Candidate - Score: 0.1218
7. name | Strong Candidate - Score: 0.1218
8. name | Strong Candidate - Score: 0.1218
9. name | Strong Candidate - Score: 0.1218
10. name | Strong Candidate - Score: 0.1218
11. name | Weak Candidate - Score: 0.1032
12. name | Weak Candidate - Score: 0.1032
13. name | Weak Candidate - Score: 0.1032
14. name | Weak Candidate - Score: 0.1032
15. name | Weak Candidate - Score: 0.1032
16. name | Weak Candidate - Score: 0.1032
17. name | Weak Candidate - Score: 0.1032
18. name | Weak Candidate - Score: 0.1032
19. name | Weak Candidate - Score: 0.1032
20. name | Weak Candidate - Score: 0.1032
```

Results Table

	Bias Type	Run Description	NDCG@20
0	Name bias	Resumes	1.0
1	Name bias	Resumes (First Resumes, but with the resumes s...	1.0
2	Consistency	First resumes used	1.0
3	Order bias	Resumes (First resumes, but with the resume or...	1.0
4	Neutral names	Resume names are assigned neutral identifiers ...	1.0
5	Bias mitigation	The candidate name in all resumes is set to 'N...	1.0