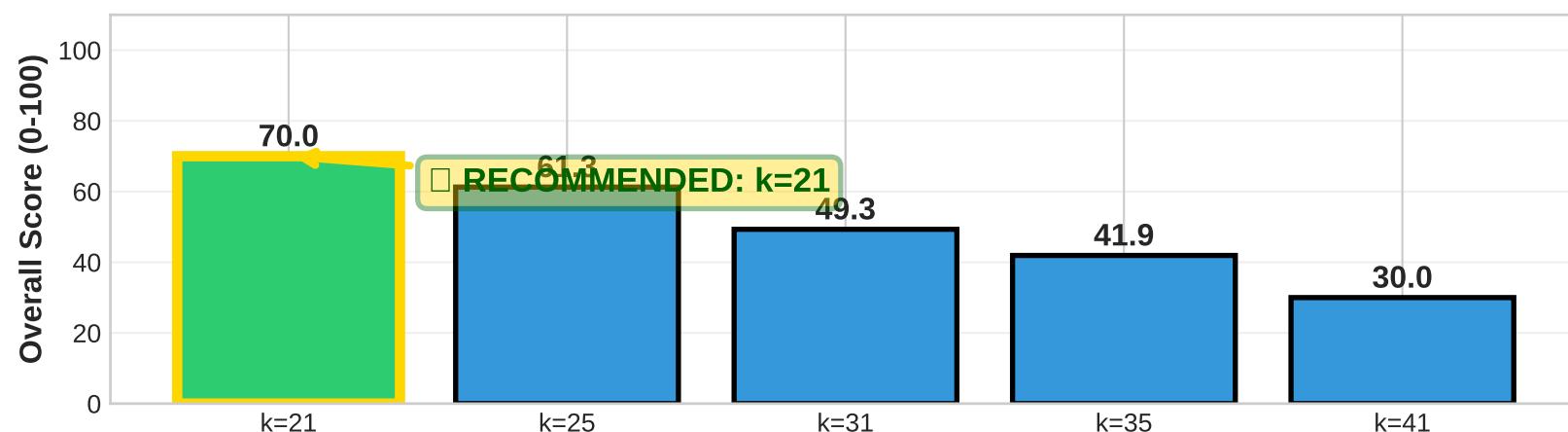
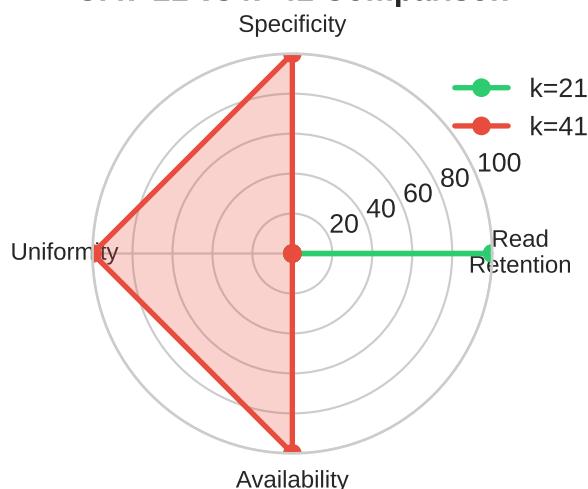


# Comprehensive K-mer Size Evaluation & Recommendation

## A. Overall Performance Score □ FINAL RECOMMENDATION

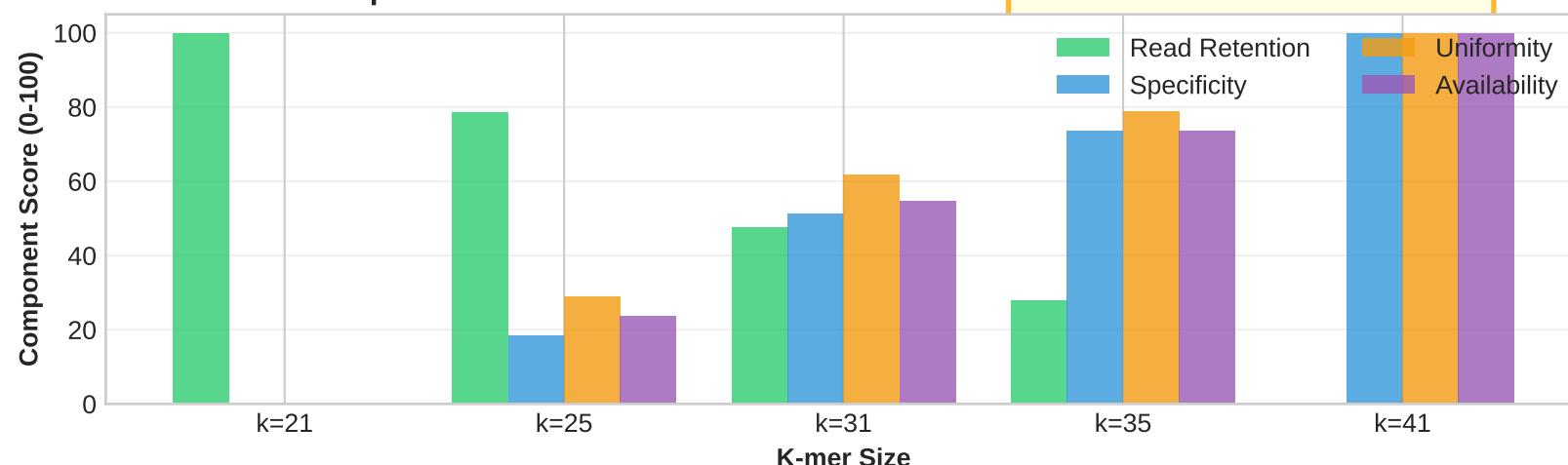


## C. k=21 vs k=41 Comparison



## K-mer Size

## D. Individual Component Scores



## SCORING CRITERIA

Optimized for ONT sequencing

□ Read Retention: 70%  
★★★ MOST CRITICAL  
81% vs 66% usable reads  
= 15% practical difference!

□ Specificity: 20%  
All <0.2% (excellent!)  
Minimal practical impact

□ Uniformity: 5%  
All reasonably uniform

□ Availability: 5%  
All have enough markers

★ Overall Score: Optimized  
for maximum read retention

## E. Complete Decision Matrix

K-mer Size	Usable Reads (%)	False Pos. Rate (%)	Marker Count	Uniformity CV (%)	Overall Score	Rank
k=21	81.10	0.1627	1,756,428	38.0	70.0	#5
k=25	77.93	0.1527	2,025,001	35.8	61.3	#4
k=31	73.36	0.1348	2,378,600	33.2	49.3	#3
k=35	70.47	0.1226	2,594,793	31.9	41.9	#2
k=41	66.34	0.1082	2,896,034	30.3	30.0	□ #1