

Preliminary Results

Notes

- Soft F-Measure values were calculated for every submission that included membership probabilities.
- Confidence interval (CI)s were calculated using bootstrapping with 1000 iterations.
- Bolding: (1)The algorithm with highest mean F-measure and (2)the algorithms with a CI that overlaps with the highest algorithm's CI are highlighted.
- We are still in the process of recovering the remaining algorithm names and runtimes. Please submit these if you have not done so yet.
- The last row shows in Ensemble Clustering (EC) results.
- ADICyt is new and not included in the EC yet.

Fractional Ranking

The *rank score* reports the sum of fractional rankings of each algorithm across different datasets. Fractional ranking is based on the Borda count strategy [1]: For N algorithms, the top algorithm scores N points, the second one $N - 1$ points and the last algorithm scores 1 point. Average rank is used in case of ties (defined by overlapping CIs) [2, 3].

Results

Tables 1, 2, 3, and 4 describe the mean F-measure values, their confidence intervals and the runtimes of the submitted algorithms.

	GvHD	DLBCL	HST	WNV	ND	Mean	Rank Score
ADICyt	0.81 (0.72, 0.88)	0.93 (0.91, 0.95)	0.93 (0.90, 0.96)	0.86 (0.84, 0.87)	0.92 (0.91, 0.93)	0.89	51.83
FlowVB	0.85 (0.78, 0.90)	0.87 (0.85, 0.90)	0.75 (0.70, 0.79)	0.81 (0.78, 0.83)	0.85 (0.84, 0.86)	0.82	27.50
CDP	0.52 (0.47, 0.58)	0.85 (0.81, 0.89)	0.50 (0.48, 0.52)	0.71 (0.67, 0.74)	0.86 (0.81, 0.89)	0.69	18.50
FEK	0.64 (0.57, 0.72)	0.79 (0.74, 0.83)	0.70 (0.65, 0.75)	0.78 (0.75, 0.81)	0.81 (0.80, 0.82)	0.74	19.50
FLOCK	0.84 (0.76, 0.90)	0.88 (0.85, 0.91)	0.86 (0.83, 0.89)	0.83 (0.80, 0.86)	0.91 (0.89, 0.92)	0.86	45.17
flowMeans	0.88 (0.82, 0.93)	0.92 (0.90, 0.95)	0.92 (0.90, 0.94)	0.88 (0.86, 0.90)	0.85 (0.76, 0.92)	0.89	48.67
flowClust/Merge	0.69 (0.54, 0.79)	0.84 (0.81, 0.86)	0.81 (0.77, 0.85)	0.77 (0.73, 0.79)	0.73 (0.60, 0.85)	0.77	24.50
FLAME	0.85 (0.76, 0.91)	0.91 (0.88, 0.93)	0.94 (0.92, 0.95)	0.80 (0.76, 0.84)	0.90 (0.89, 0.91)	0.88	44.33
MM&PCA	0.84 (0.74, 0.93)	0.85 (0.82, 0.89)	0.91 (0.88, 0.94)	0.64 (0.52, 0.71)	0.76 (0.75, 0.77)	0.80	29.00
MM	0.83 (0.75, 0.91)	0.90 (0.87, 0.93)	0.73 (0.67, 0.80)	0.69 (0.60, 0.75)	0.75 (0.74, 0.76)	0.78	27.50
SamSPECTRAL	0.87 (0.82, 0.93)	0.86 (0.83, 0.90)	0.85 (0.82, 0.88)	0.75 (0.61, 0.85)	0.92 (0.92, 0.93)	0.85	39.00
SWIFT	0.63 (0.56, 0.70)	0.67 (0.63, 0.71)	0.59 (0.55, 0.63)	0.69 (0.64, 0.74)	0.87 (0.86, 0.88)	0.69	15.50
EC	0.91	0.94	0.96	0.86	0.93	0.92	64.00

Table 1: Mean (CI) F-Measure values and Rank-Scores for challenge 1.

	GvHD	DLBCL	HST	WNV	ND	Mean	Rank Score
ADICyt	0.81 (0.72, 0.88)	0.93 (0.91, 0.95)	0.93 (0.90, 0.95)	0.86 (0.84, 0.87)	0.92 (0.91, 0.93)	0.89	33.50
NMF-curvHDR	0.76 (0.69, 0.82)	0.84 (0.82, 0.86)	0.70 (0.67, 0.74)	0.81 (0.77, 0.84)	0.83 (0.83, 0.84)	0.79	13.50
CDP	0.59 (0.53, 0.65)	0.75 (0.69, 0.80)	0.84 (0.77, 0.89)	0.75 (0.71, 0.78)	0.86 (0.85, 0.88)	0.76	12.50
FLOCK	0.84 (0.76, 0.90)	0.88 (0.85, 0.91)	0.86 (0.83, 0.89)	0.84 (0.82, 0.86)	0.89 (0.87, 0.91)	0.86	26.50
flowClust/Merge	0.69 (0.53, 0.79)	0.87 (0.85, 0.90)	0.96 (0.94, 0.97)	0.77 (0.75, 0.79)	0.88 (0.81, 0.91)	0.83	22.00
FLAME	0.81 (0.75, 0.87)	0.87 (0.84, 0.90)	0.87 (0.83, 0.90)	0.84 (0.82, 0.85)	0.87 (0.86, 0.87)	0.85	22.50
SamSPECTRAL	0.87 (0.79, 0.93)	0.92 (0.89, 0.94)	0.90 (0.86, 0.93)	0.85 (0.83, 0.88)	0.91 (0.91, 0.92)	0.89	30.00
SamSPECTRAL-Fixed-K	0.87 (0.79, 0.94)	0.85 (0.81, 0.89)	0.90 (0.86, 0.92)	0.76 (0.71, 0.81)	0.92 (0.91, 0.93)	0.86	22.50
EC	0.87	0.93	0.97	0.86	0.91	0.91	42.00

Table 2: Mean (CI) F-Measure values and Rank-Scores for challenge 2.

	GvHD	DLBCL	HST	Mean	Rank Score
ADICyt	0.91 (0.85, 0.96)	0.96 (0.94, 0.98)	0.98 (0.97, 0.99)	0.95	27.58
CDP	0.72 (0.63, 0.80)	0.77 (0.72, 0.83)	0.72 (0.68, 0.77)	0.74	5.50
FLOCK	0.86 (0.78, 0.94)	0.92 (0.89, 0.94)	0.97 (0.95, 0.98)	0.92	23.83
flowKoh	0.85 (0.80, 0.91)	0.85 (0.82, 0.88)	0.87 (0.84, 0.91)	0.86	10.00
flowMeans	0.91 (0.85, 0.96)	0.94 (0.92, 0.96)	0.95 (0.92, 0.96)	0.93	24.75
flowClust/Merge	0.88 (0.82, 0.93)	0.90 (0.86, 0.94)	0.83 (0.79, 0.88)	0.87	17.50
FLAME	0.85 (0.79, 0.91)	0.90 (0.86, 0.94)	0.86 (0.82, 0.90)	0.87	17.50
curvHDR-NMF	0.74 (0.69, 0.78)	0.84 (0.80, 0.89)	0.80 (0.76, 0.85)	0.79	8.50
SamSPECTRAL	0.85 (0.76, 0.93)	0.93 (0.91, 0.96)	0.97 (0.95, 0.98)	0.92	27.58
SWIFT	0.90 (0.84, 0.95)	0.00 (0.00, 0.00)	0.88 (0.84, 0.92)	0.59	12.50
TCLUST	0.93 (0.91, 0.96)	0.93 (0.91, 0.95)	0.93 (0.90, 0.95)	0.93	24.75
EC	0.95	0.96	0.98	0.96	34.00

Table 3: Mean (CI) F-Measure values and Rank-Scores for challenge 3.

	GvHD	DLBCL	HST	WNV	ND	Mean	Rank Score
randomForests	0.85 (0.79, 0.91)	0.78 (0.74, 0.82)	0.81 (0.79, 0.83)	0.87 (0.84, 0.90)	0.94 (0.92, 0.96)	0.85	16.50
CDP	0.66 (0.56, 0.77)	0.76 (0.72, 0.81)	0.70 (0.67, 0.73)	0.85 (0.83, 0.87)	0.73 (0.65, 0.82)	0.74	8.00
FLOCK	0.82 (0.77, 0.87)	0.91 (0.89, 0.93)	0.86 (0.77, 0.93)	0.86 (0.82, 0.89)	0.86 (0.76, 0.92)	0.86	14.00
flowClust/Merge	0.92 (0.88, 0.95)	0.92 (0.90, 0.94)	0.95 (0.91, 0.97)	0.84 (0.82, 0.86)	0.89 (0.88, 0.90)	0.90	19.50
Radial SVM	0.89 (0.84, 0.95)	0.84 (0.80, 0.88)	0.98 (0.96, 0.99)	0.96 (0.94, 0.97)	0.93 (0.92, 0.94)	0.92	23.00
EC	0.92	0.92	0.93	0.93	0.93	0.93	24.00

Table 4: Mean (CI) F-Measure values and Rank-Scores for challenge 4.

References

- [1] Wikipedia. Borda count. http://en.wikipedia.org/wiki/Borda_count.
- [2] Wikipedia. Fractional ranking. http://en.wikipedia.org/wiki/Ranking#Fractional_ranking_.28.221_2.%52.54.22_ranking.29.
- [3] M. Birattari, T. Stutzle, L. Paquete, and K. Varrentrapp. A racing algorithm for configuring metaheuristics. In *GECCO*, volume 2, pages 11–18. Citeseer, 2002.