Supplementary Material for
On the Evaluation of Unsupervised Outlier Detection: Measures, Datasets, and an Empirical Study
by G. O. Campos, A. Zimek, J. Sander, R. J. G. B. Campello, B. Micenková, E. Schubert, I. Assent and M. E. Houle
Data Mining and Knowledge Discovery 30(4): 891-927, 2016, DOI: 10.1007/s10618-015-0444-8

Lymphography

This dataset represents patients divided into four classes according to radiological examination results. Two classes (1 and 4) are represented by only 6 instances. These classes were jointly considered as outliers. In this way, the dataset was first used by Lazarevic and Kumar [1], and then also in [2,3]. (Note: Lazarevic and Kumar name classes 2 and 4 as outliers but their experimental results suggest that they actually used classes 1 and 4, as we do here. The processed database has 3 numerical attributes, 16 categorical attributes and 148 instances, namely 6 outliers (4.05%) and 142 inliers (95.95%).

References:

[1] A. Lazarevic and V. Kumar. Feature bagging for outlier detection. In Proc. KDD, pages 157-166, 2005.
[2] H. V. Nguyen, H. H. Ang, and V. Gopalkrishnan. Mining outliers with ensemble of heterogeneous detectors on random subspaces. In Proc. DASFAA, pages 368-383, 2010.
[3] A. Zimek, M. Gaudet, R. J. G. B. Campello, and J. Sander. Subsampling for efficient and effective unsupervised outlier detection ensembles. In Proc. KDD, pages 428-436, 2013.

Download all data set variants used (13.0 kB). You can also access the original data. (lymphography-data)

- Normalized, without duplicates, idf weighted categorial attributes
- Normalized, without duplicates, 1-of-n encoding
- Normalized, without duplicates, categorial attributes removed
- Not normalized, without duplicates, idf weighted categorial attributes
- Not normalized, without duplicates, 1-of-n encoding
- Not normalized, without duplicates, categorial attributes removed

Normalized, without duplicates, idf weighted categorial attributes

This version contains 18 attributes, 148 objects, 6 outliers (4.05%)

Download raw algorithm results (1.3 MB) Download raw algorithm evaluation table (17.0 kB)

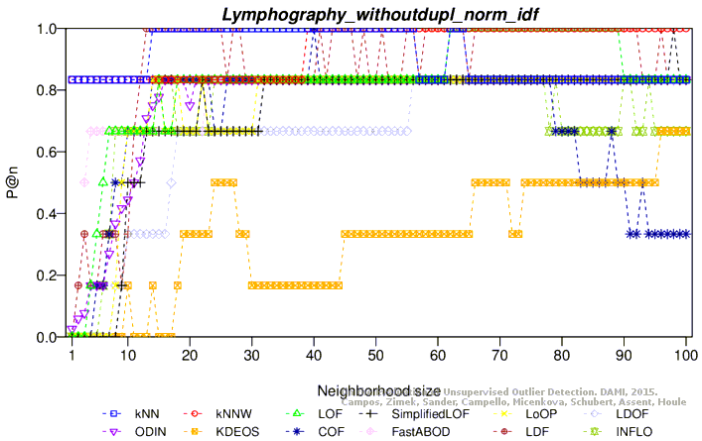
Best Parameters

The following table contains the best (overall and per-method) results for each method and evaluation measure (when the same score was achieved twice, only the smallest k is given).
The Maximum F1-Measure is complimentary in addition to the measures in the original publication.

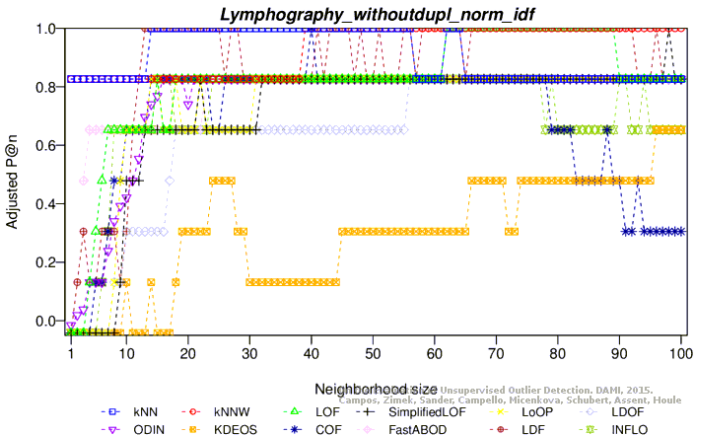
Algorithm	k	P@n	Adj. P@n	AP	Adj. AP	Max-F1	Adj. MF1	ROC AUC
KNN	**14**	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
KNNW	**39**	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
LOF	**62**	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
SimplifiedLOF	**98**	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
LoOP	**14**	0.83333	0.82629	0.62500	0.60915	0.83333	0.82629	0.96596
LoOP	**43**	0.83333	0.82629	0.94444	0.94210	0.90909	0.90525	0.99648
LoOP	**47**	0.83333	0.82629	0.95833	0.95657	0.90909	0.90525	0.99765
LDOF	**56**	0.83333	0.82629	0.85556	0.84945	0.85714	0.85111	0.99413
LDOF	**66**	0.83333	0.82629	0.91508	0.91149	0.92308	0.91983	0.99648
LDOF	**86**	0.83333	0.82629	0.95833	0.95657	0.90909	0.90525	0.99765
ODIN	**16**	0.83333	0.82629	0.83258	0.82551	0.83333	0.82629	0.96479
ODIN	**52**	0.83333	0.82629	0.94841	0.94623	0.92308	0.91983	0.99765
ODIN	**55**	0.83333	0.82629	0.97619	0.97518	0.92308	0.91983	0.99883
FastABOD	**23**	0.83333	0.82629	0.93056	0.92762	0.85714	0.85111	0.99648
FastABOD	**25**	0.83333	0.82629	0.94841	0.94623	0.92308	0.91983	0.99765
KDEOS	**73**	0.33333	0.30516	0.47652	0.45440	0.66667	0.65258	0.97066
KDEOS	**96**	0.66667	0.65258	0.53046	0.51062	0.66667	0.65258	0.97653
KDEOS	**99**	0.66667	0.65258	0.65840	0.64397	0.66667	0.65258	0.98122
LDF	**13**	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
INFLO	**15**	0.83333	0.82629	0.74643	0.73571	0.83333	0.82629	0.98592
INFLO	**60**	0.83333	0.82629	0.94841	0.94623	0.92308	0.91983	0.99765
INFLO	**62**	0.83333	0.82629	0.97619	0.97518	0.92308	0.91983	0.99883
COF	**40**	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

Plots

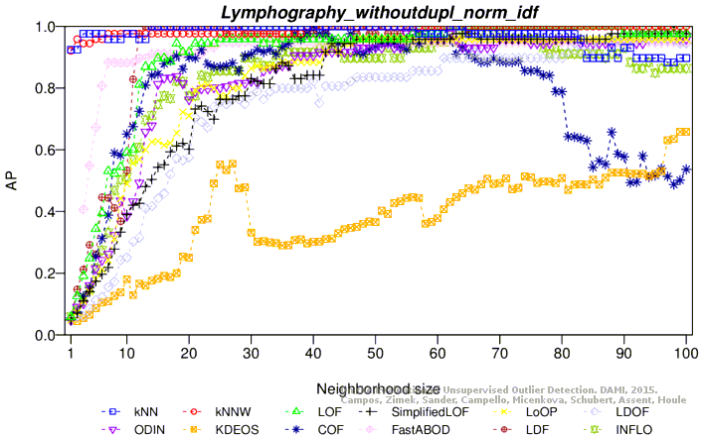
Precision at *n*



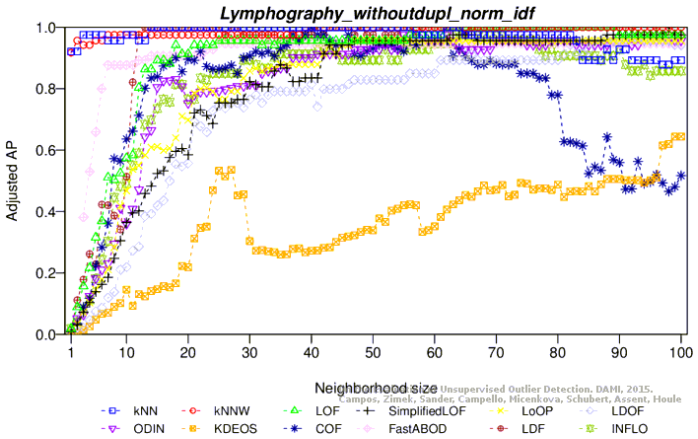
Adjusted precision at *n*



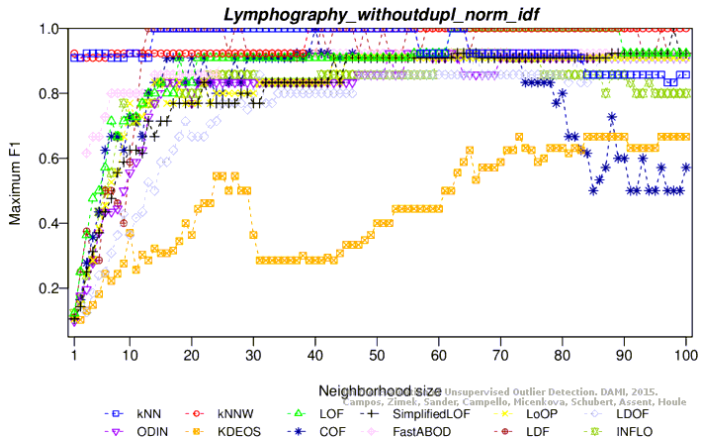
Average precision



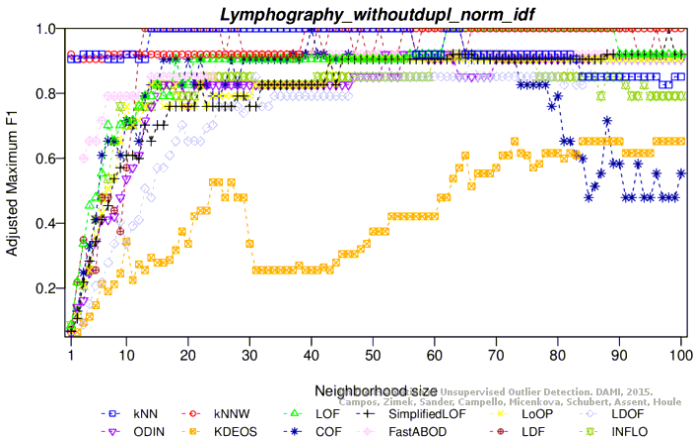
Adjusted average precision



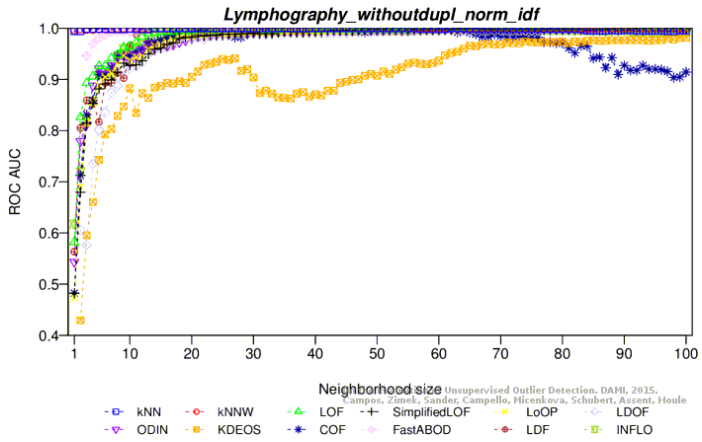
Maximum F1 score



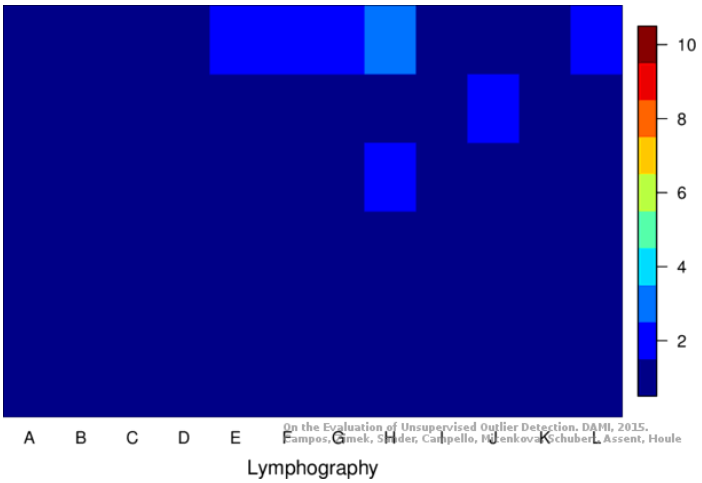
Adjusted maximum F1 score



ROC AUC



Diversity



A: KNN, B: KNNW, C: LOF, D: SimplifiedLOF, E: LoOP, F: LDOF
G: ODIN, H: KDEOS, I: COF, J: FastABOD, K: LDF, L: INFLO

Normalized, without duplicates, 1-of-n encoding

This version contains 47 attributes, 148 objects, 6 outliers (4.05%)

Download raw algorithm results (1.1 MB) Download raw algorithm evaluation table (20.0 kB)

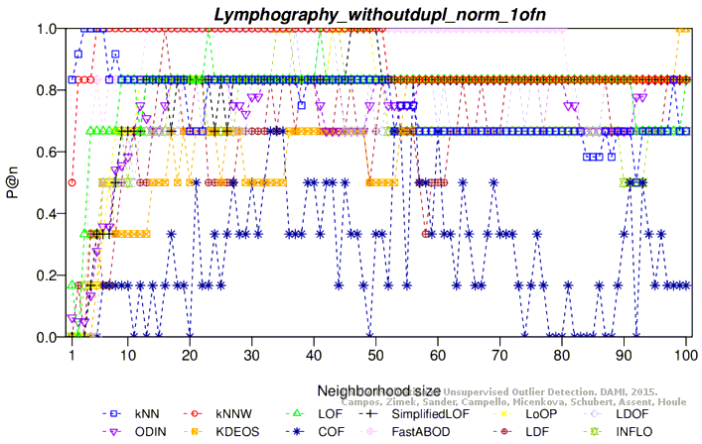
Best Parameters

The following table contains the best (overall and per-method) results for each method and evaluation measure (when the same score was achieved twice, only the smallest k is given).
The Maximum F1-Measure is complimentary in addition to the measures in the original publication.

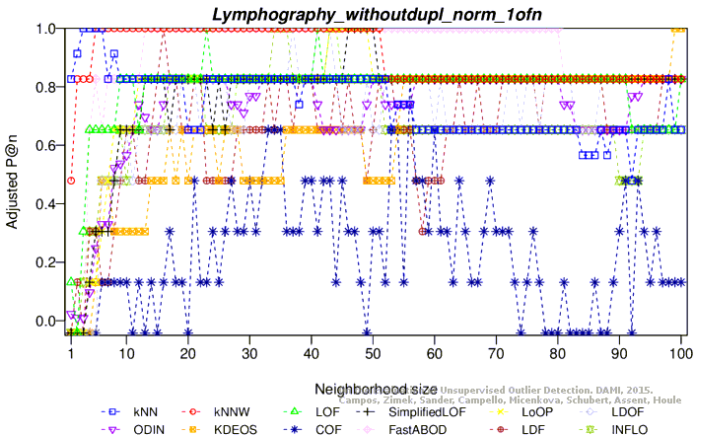
Algorithm	k	P@n	Adj. P@n	AP	Adj. AP	Max-F1	Adj. MF1	ROC AUC
KNN	**3**	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
KNNW	**5**	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
LOF	**23**	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
SimplifiedLOF	**46**	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
LoOP	**43**	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
LDOF	**37**	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
ODIN	**17**	0.83333	0.82629	0.76026	0.75013	0.83333	0.82629	0.98885
ODIN	**21**	0.83333	0.82629	0.91667	0.91315	0.90909	0.90525	0.99531
ODIN	**40**	0.83333	0.82629	0.95833	0.95657	0.90909	0.90525	0.99765
FastABOD	**13**	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
KDEOS	**99**	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
LDF	**16**	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
INFLO	**34**	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
COF	**53**	0.66667	0.65258	0.80492	0.79668	0.80000	0.79155	0.98122
COF	**56**	0.83333	0.82629	0.79603	0.78741	0.83333	0.82629	0.95540

Plots

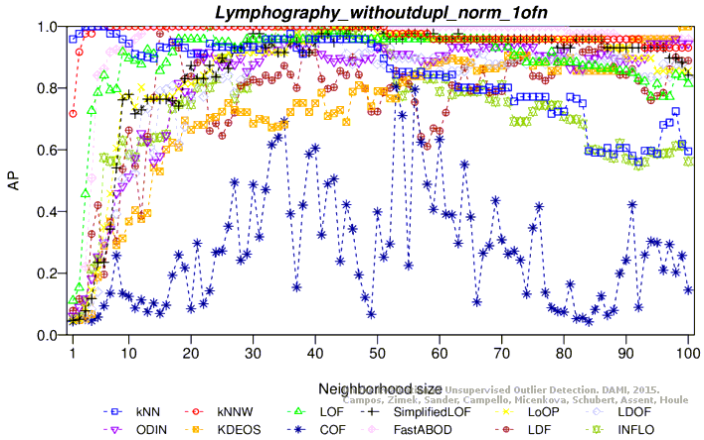
Precision at *n*



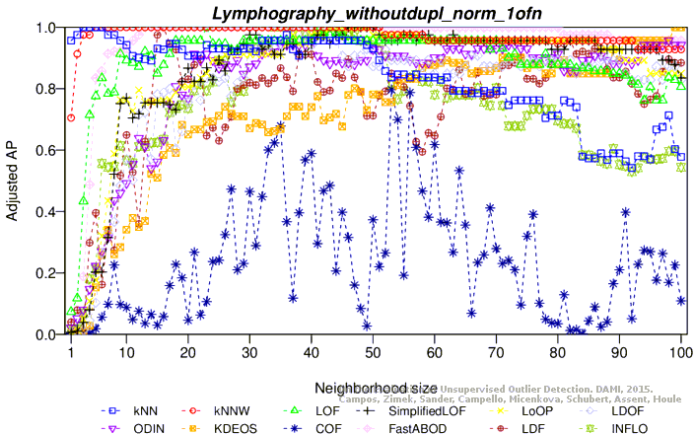
Adjusted precision at *n*



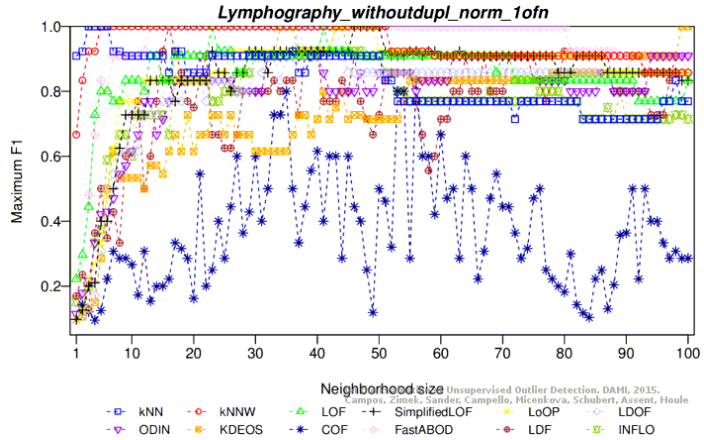
Average precision



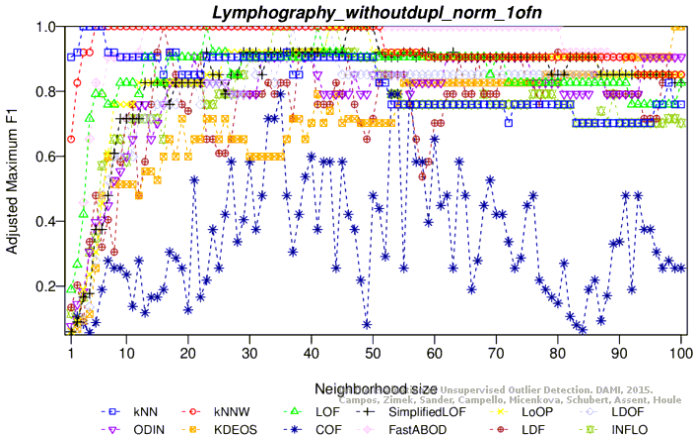
Adjusted average precision



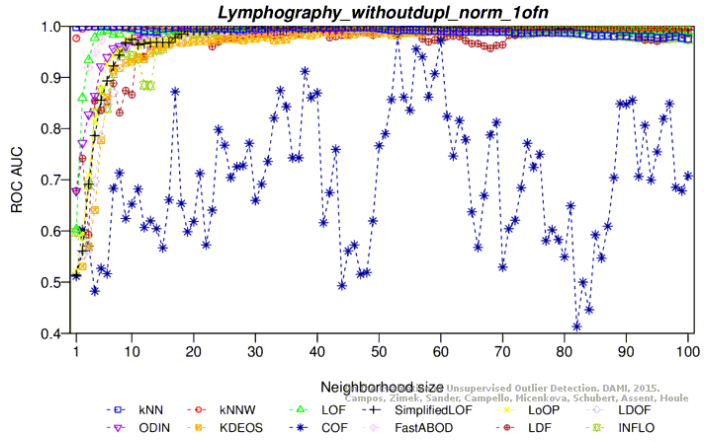
Maximum F1 score



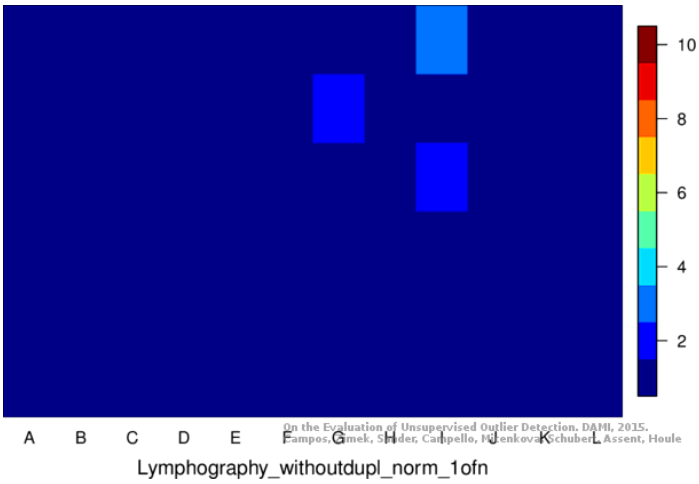
Adjusted maximum F1 score



ROC AUC



Diversity



A: KNN, B: KNNW, C: LOF, D: SimplifiedLOF, E: LoOP, F: LDOF
G: ODIN, H: KDEOS, I: COF, J: FastABOD, K: LDF, L: INFLO

Normalized, without duplicates, categorial attributes removed

This version contains 3 attributes, 148 objects, 6 outliers (4.05%)

Download raw algorithm results (331.4 kB) Download raw algorithm evaluation table (26.4 kB)

Best Parameters

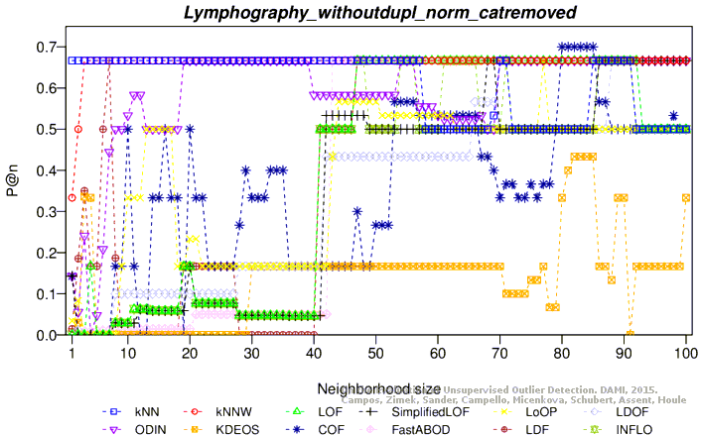
The following table contains the best (overall and per-method) results for each method and evaluation measure (when the same score was achieved twice, only the smallest k is given).
The Maximum F1-Measure is complimentary in addition to the measures in the original publication.

Algorithm	k	P@n	Adj. P@n	AP	Adj. AP	Max-F1	Adj. MF1	ROC AUC
KNN	**1**	0.66667	0.65258	0.40240	0.37715	0.66667	0.65258	0.81045
KNN	**2**	0.66667	0.65258	0.60518	0.58850	0.72727	0.71575	0.80634
KNN	**6**	0.66667	0.65258	0.67632	0.66265	0.72727	0.71575	0.87148
KNN	**7**	0.66667	0.65258	0.68639	0.67314	0.72727	0.71575	0.86326
KNNW	**3**	0.66667	0.65258	0.37462	0.34820	0.66667	0.65258	0.79930
KNNW	**5**	0.66667	0.65258	0.48389	0.46209	0.72727	0.71575	0.83744
KNNW	**13**	0.66667	0.65258	0.67342	0.65962	0.72727	0.71575	0.84683
KNNW	**20**	0.66667	0.65258	0.67150	0.65762	0.72727	0.71575	0.86678
LOF	**47**	0.66667	0.65258	0.67610	0.66241	0.66667	0.65258	0.88204
LOF	**50**	0.66667	0.65258	0.68007	0.66655	0.66667	0.65258	0.88322
LOF	**67**	0.66667	0.65258	0.65579	0.64124	0.72727	0.71575	0.82570
SimplifiedLOF	**47**	0.53333	0.51362	0.59494	0.57783	0.60000	0.58310	0.93369
SimplifiedLOF	**68**	0.66667	0.65258	0.67263	0.65880	0.66667	0.65258	0.88087
SimplifiedLOF	**86**	0.66667	0.65258	0.67610	0.66241	0.72727	0.71575	0.87148
SimplifiedLOF	**88**	0.66667	0.65258	0.68065	0.66715	0.72727	0.71575	0.87500
LoOP	**43**	0.43333	0.40939	0.41686	0.39222	0.53333	0.51362	0.91725
LoOP	**69**	0.50000	0.47887	0.62689	0.61112	0.66667	0.65258	0.85270
LoOP	**71**	0.50000	0.47887	0.66152	0.64722	0.66667	0.65258	0.85739
LoOP	**77**	0.66667	0.65258	0.65755	0.64308	0.66667	0.65258	0.85035
LDOF	**42**	0.43333	0.40939	0.40540	0.38027	0.50000	0.47887	0.91256
LDOF	**71**	0.50000	0.47887	0.61784	0.60170	0.66667	0.65258	0.88322
LDOF	**88**	0.66667	0.65258	0.67610	0.66241	0.66667	0.65258	0.88204
LDOF	**91**	0.66667	0.65258	0.68465	0.67132	0.66667	0.65258	0.88439
ODIN	**19**	0.66667	0.65258	0.46062	0.43783	0.66667	0.65258	0.89495
ODIN	**32**	0.66667	0.65258	0.55248	0.53357	0.66667	0.65258	0.92371
ODIN	**97**	0.66667	0.65258	0.63771	0.62240	0.66667	0.65258	0.82570
FastABOD	**39**	0.05000	0.00986	0.12236	0.08528	0.32258	0.29396	0.73650
FastABOD	**43**	0.66667	0.65258	0.64609	0.63114	0.72727	0.71575	0.68838
KDEOS	**82**	0.43333	0.40939	0.44470	0.42123	0.50000	0.47887	0.80927
KDEOS	**85**	0.43333	0.40939	0.44681	0.42343	0.50000	0.47887	0.81279
KDEOS	**100**	0.33333	0.30516	0.28774	0.25765	0.40000	0.37465	0.83862
LDF	**7**	0.66667	0.65258	0.57298	0.55494	0.66667	0.65258	0.81338
LDF	**56**	0.66667	0.65258	0.67667	0.66300	0.66667	0.65258	0.88908
LDF	**67**	0.66667	0.65258	0.65879	0.64438	0.72727	0.71575	0.83979
INFLO	**41**	0.50000	0.47887	0.59971	0.58279	0.66667	0.65258	0.81866
INFLO	**47**	0.66667	0.65258	0.66693	0.65286	0.66667	0.65258	0.86385
INFLO	**54**	0.66667	0.65258	0.68216	0.66873	0.66667	0.65258	0.87324
COF	**55**	0.56667	0.54836	0.56987	0.55170	0.60000	0.58310	0.94190

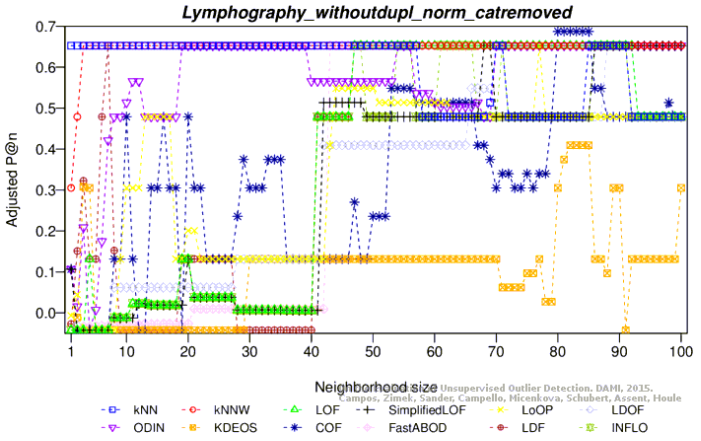
COF	**80**	0.70000	0.68732	0.68833	0.67516	0.72727	0.71575	0.92430
COF	**83**	0.70000	0.68732	0.68949	0.67637	0.72727	0.71575	0.93134

Plots

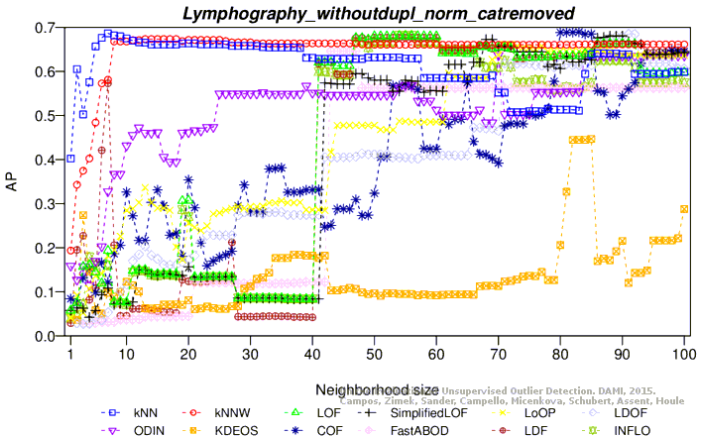
Precision at *n*



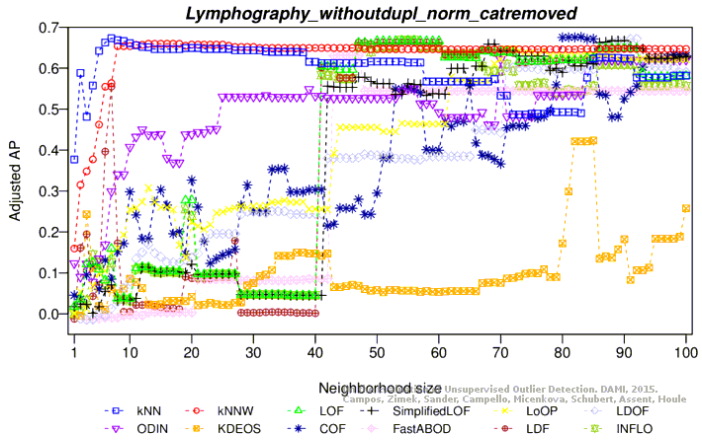
Adjusted precision at *n*



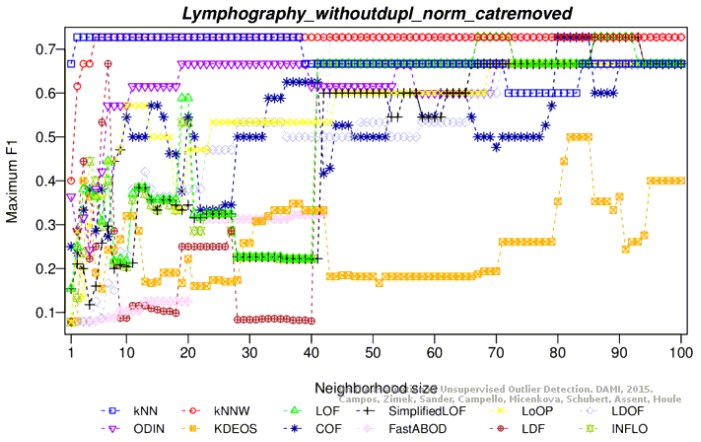
Average precision



Adjusted average precision

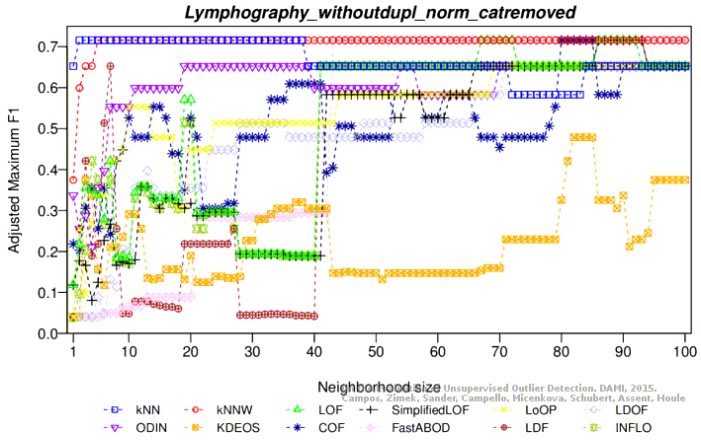


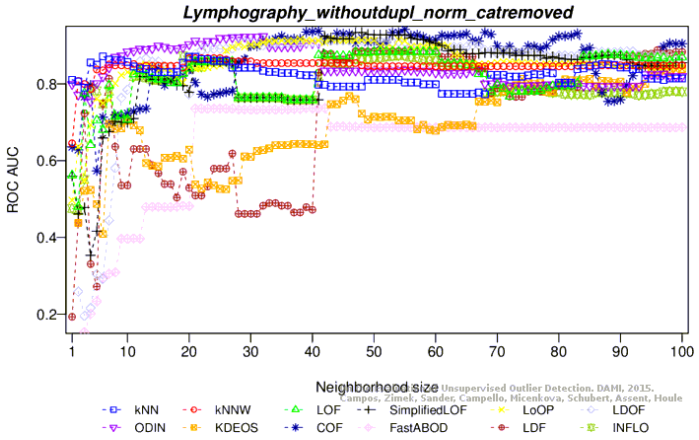
Maximum F1 score



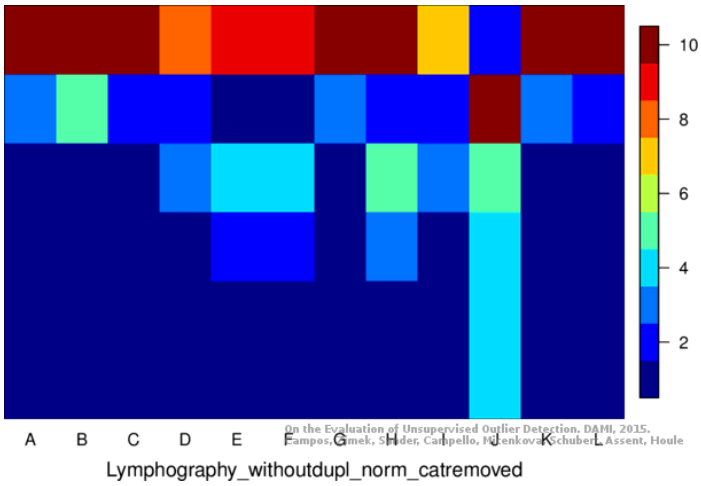
Adjusted maximum F1 score

ROC AUC





Diversity



A: KNN, B: KNNW, C: LOF, D: SimplifiedLOF, E: LoOP, F: LDOF
G: ODIN, H: KDEOS, I: COF, J: FastABOD, K: LDF, L: INFLO

Not normalized, without duplicates, idf weighted categorial attributes

This version contains 18 attributes, 148 objects, 6 outliers (4.05%)

Download raw algorithm results (1.3 MB) Download raw algorithm evaluation table (22.5 kB)

Best Parameters

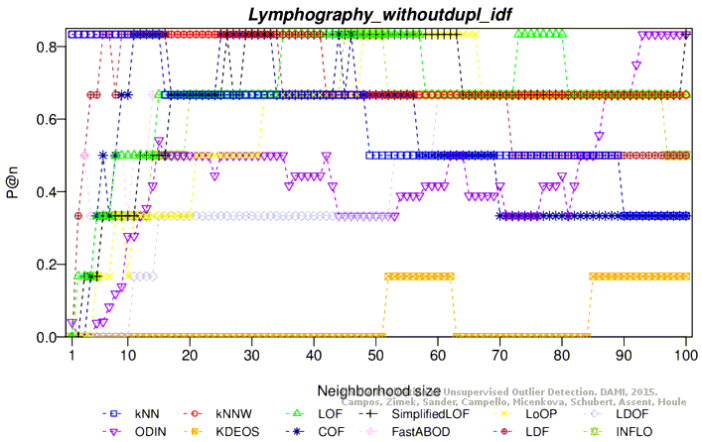
The following table contains the best (overall and per-method) results for each method and evaluation measure (when the same score was achieved twice, only the smallest k is given).
The Maximum F1-Measure is complimentary in addition to the measures in the original publication.

Algorithm	k	P@n	Adj. P@n	AP	Adj. AP	Max-F1	Adj. MF1	ROC AUC
KNN	**1**	0.83333	0.82629	0.88889	0.88419	0.83333	0.82629	0.99237
KNN	**4**	0.83333	0.82629	0.97619	0.97518	0.92308	0.91983	0.99883
KNNW	**1**	0.83333	0.82629	0.90476	0.90074	0.90909	0.90525	0.99061
KNNW	**8**	0.83333	0.82629	0.95833	0.95657	0.90909	0.90525	0.99765
KNNW	**22**	0.83333	0.82629	0.94841	0.94623	0.92308	0.91983	0.99765

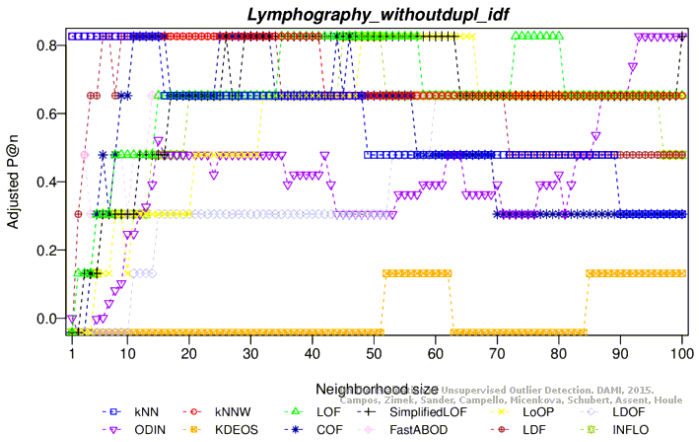
LOF	**35**	0.83333	0.82629	0.80198	0.79362	0.83333	0.82629	0.98709
LOF	**47**	0.83333	0.82629	0.85556	0.84945	0.85714	0.85111	0.99413
LOF	**55**	0.83333	0.82629	0.89722	0.89288	0.85714	0.85111	0.99531
LOF	**63**	0.66667	0.65258	0.91071	0.90694	0.85714	0.85111	0.99531
SimplifiedLOF	**26**	0.83333	0.82629	0.73750	0.72641	0.83333	0.82629	0.98357
SimplifiedLOF	**59**	0.83333	0.82629	0.85556	0.84945	0.85714	0.85111	0.99413
SimplifiedLOF	**71**	0.66667	0.65258	0.91071	0.90694	0.85714	0.85111	0.99531
LoOP	**48**	0.83333	0.82629	0.75192	0.74144	0.83333	0.82629	0.98709
LoOP	**57**	0.83333	0.82629	0.84167	0.83498	0.83333	0.82629	0.99296
LoOP	**69**	0.66667	0.65258	0.83571	0.82877	0.85714	0.85111	0.99296
LDOF	**60**	0.66667	0.65258	0.66481	0.65065	0.66667	0.65258	0.98239
LDOF	**74**	0.66667	0.65258	0.70417	0.69167	0.80000	0.79155	0.98709
LDOF	**87**	0.66667	0.65258	0.77460	0.76508	0.80000	0.79155	0.98944
ODIN	**93**	0.83333	0.82629	0.82146	0.81392	0.83333	0.82629	0.99120
ODIN	**96**	0.83333	0.82629	0.84167	0.83498	0.83333	0.82629	0.99296
FastABOD	**14**	0.66667	0.65258	0.69713	0.68433	0.66667	0.65258	0.98005
FastABOD	**51**	0.66667	0.65258	0.78849	0.77956	0.85714	0.85111	0.99061
KDEOS	**52**	0.16667	0.13146	0.16484	0.12955	0.30000	0.27042	0.86385
KDEOS	**88**	0.16667	0.13146	0.19522	0.16122	0.37500	0.34859	0.90141
KDEOS	**100**	0.16667	0.13146	0.23771	0.20550	0.35714	0.32998	0.91315
LDF	**6**	0.83333	0.82629	0.82146	0.81392	0.83333	0.82629	0.99061
LDF	**9**	0.83333	0.82629	0.81786	0.81016	0.92308	0.91983	0.99413
LDF	**25**	0.83333	0.82629	0.95833	0.95657	0.90909	0.90525	0.99765
INFLO	**45**	0.83333	0.82629	0.80198	0.79362	0.83333	0.82629	0.98709
INFLO	**49**	0.83333	0.82629	0.82146	0.81392	0.83333	0.82629	0.99061
INFLO	**61**	0.66667	0.65258	0.81349	0.80561	0.85714	0.85111	0.99178
COF	**11**	0.83333	0.82629	0.84903	0.84265	0.83333	0.82629	0.97887
COF	**25**	0.83333	0.82629	0.93333	0.93052	0.90909	0.90525	0.99531

Plots

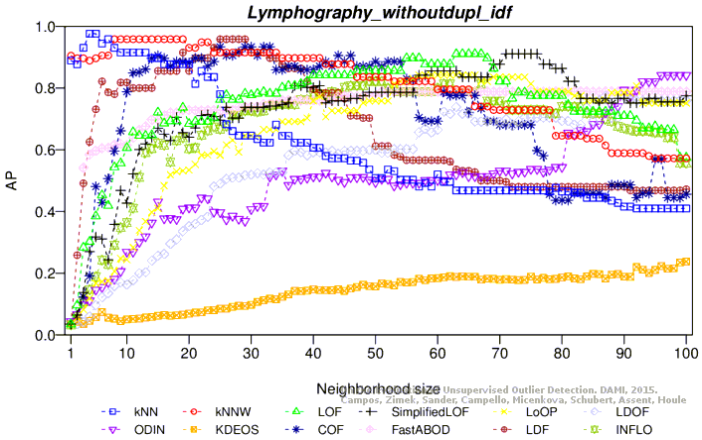
Precision at *n*



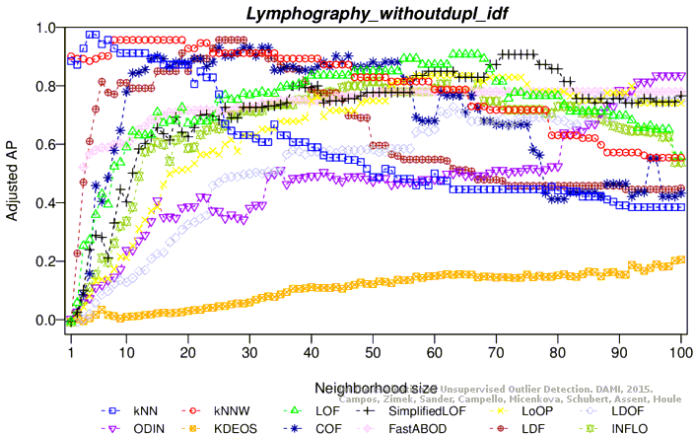
Adjusted precision at *n*



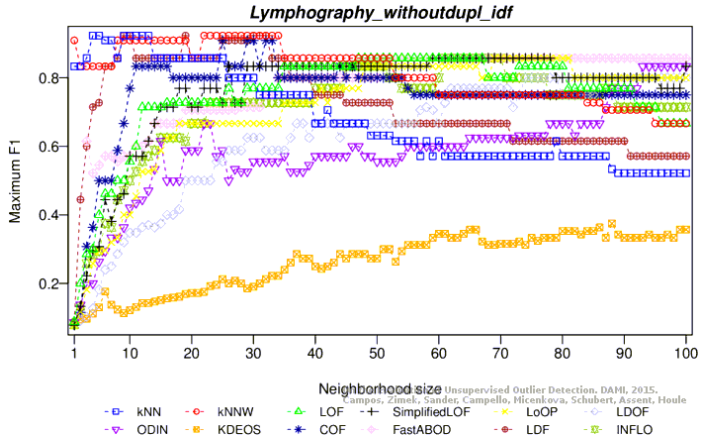
Average precision



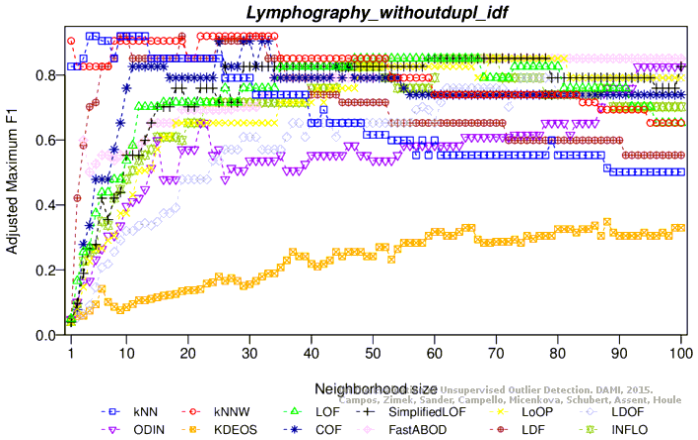
Adjusted average precision



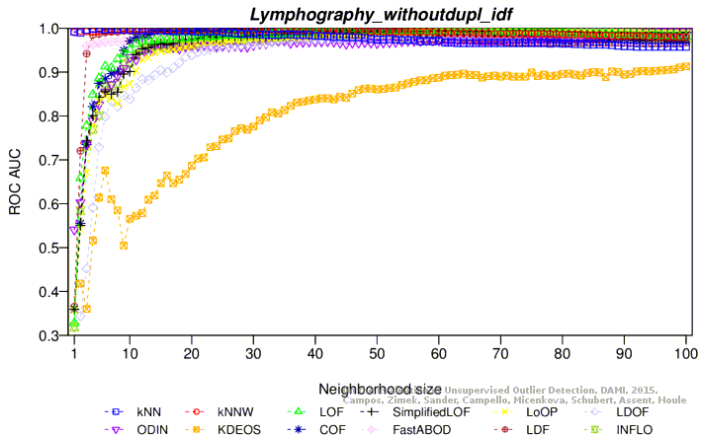
Maximum F1 score



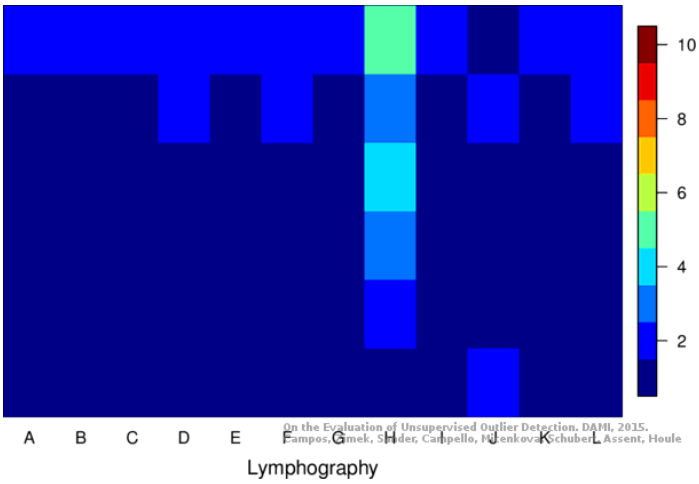
Adjusted maximum F1 score



ROC AUC



Diversity



A: KNN, B: KNNW, C: LOF, D: SimplifiedLOF, E: LoOP, F: LDOF
G: ODIN, H: KDEOS, I: COF, J: FastABOD, K: LDF, L: INFLO

Not normalized, without duplicates, 1-of-n encoding

This version contains 47 attributes, 148 objects, 6 outliers (4.05%)

Download raw algorithm results (1.0 MB) Download raw algorithm evaluation table (33.0 kB)

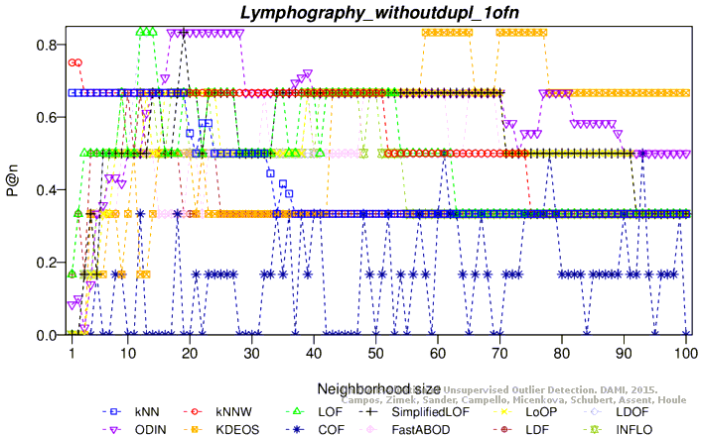
Best Parameters

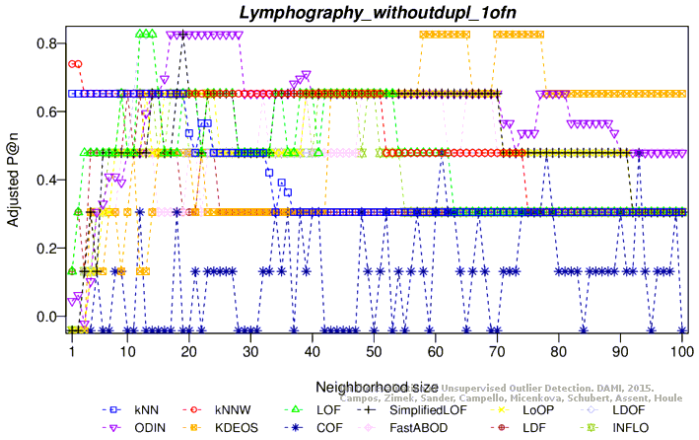
The following table contains the best (overall and per-method) results for each method and evaluation measure (when the same score was achieved twice, only the smallest k is given).
The Maximum F1-Measure is complimentary in addition to the measures in the original publication.

Algorithm	k	P@n	Adj. P@n	AP	Adj. AP	Max-F1	Adj. MF1	ROC AUC
KNN	**1**	0.66667	0.65258	0.74676	0.73606	0.72727	0.71575	0.98592
KNN	**2**	0.66667	0.65258	0.79259	0.78383	0.72727	0.71575	0.98709
KNNW	**1**	0.75000	0.73944	0.71253	0.70038	0.76923	0.75948	0.98063
KNNW	**4**	0.66667	0.65258	0.82083	0.81326	0.72727	0.71575	0.98885
LOF	**12**	0.83333	0.82629	0.88333	0.87840	0.83333	0.82629	0.99413
SimplifiedLOF	**19**	0.83333	0.82629	0.83889	0.83208	0.83333	0.82629	0.98709
SimplifiedLOF	**37**	0.66667	0.65258	0.80370	0.79541	0.75000	0.73944	0.98826
LoOP	**8**	0.50000	0.47887	0.57037	0.55222	0.75000	0.73944	0.98122
LoOP	**13**	0.66667	0.65258	0.78535	0.77628	0.70588	0.69345	0.98592
LoOP	**24**	0.66667	0.65258	0.78704	0.77804	0.66667	0.65258	0.98592
LDOF	**12**	0.83333	0.82629	0.66859	0.65459	0.83333	0.82629	0.98592
LDOF	**13**	0.83333	0.82629	0.80198	0.79362	0.83333	0.82629	0.98709
ODIN	**17**	0.83333	0.82629	0.75327	0.74284	0.83333	0.82629	0.98415
ODIN	**20**	0.83333	0.82629	0.90000	0.89577	0.90909	0.90525	0.99120
ODIN	**25**	0.83333	0.82629	0.91026	0.90646	0.90909	0.90525	0.99237
ODIN	**27**	0.83333	0.82629	0.86869	0.86314	0.83333	0.82629	0.99472
FastABOD	**7**	0.33333	0.30516	0.52539	0.50534	0.57143	0.55332	0.85446
FastABOD	**32**	0.66667	0.65258	0.52002	0.49974	0.66667	0.65258	0.91432
FastABOD	**48**	0.66667	0.65258	0.51908	0.49876	0.66667	0.65258	0.92488
KDEOS	**58**	0.83333	0.82629	0.78938	0.78048	0.83333	0.82629	0.98357
KDEOS	**62**	0.83333	0.82629	0.89583	0.89143	0.90909	0.90525	0.98826
KDEOS	**70**	0.83333	0.82629	0.91026	0.90646	0.90909	0.90525	0.99178
LDF	**10**	0.66667	0.65258	0.55486	0.53605	0.72727	0.71575	0.96596
LDF	**15**	0.50000	0.47887	0.66786	0.65382	0.66667	0.65258	0.96127
LDF	**16**	0.50000	0.47887	0.63581	0.62042	0.60000	0.58310	0.96714
INFLO	**8**	0.50000	0.47887	0.71266	0.70052	0.66667	0.65258	0.98122
INFLO	**9**	0.66667	0.65258	0.74937	0.73878	0.66667	0.65258	0.97887
INFLO	**12**	0.66667	0.65258	0.73286	0.72157	0.72727	0.71575	0.96596
COF	**61**	0.50000	0.47887	0.46132	0.43856	0.60000	0.58310	0.84742
COF	**75**	0.33333	0.30516	0.54952	0.53049	0.66667	0.65258	0.94366
COF	**78**	0.50000	0.47887	0.58799	0.57058	0.66667	0.65258	0.69836

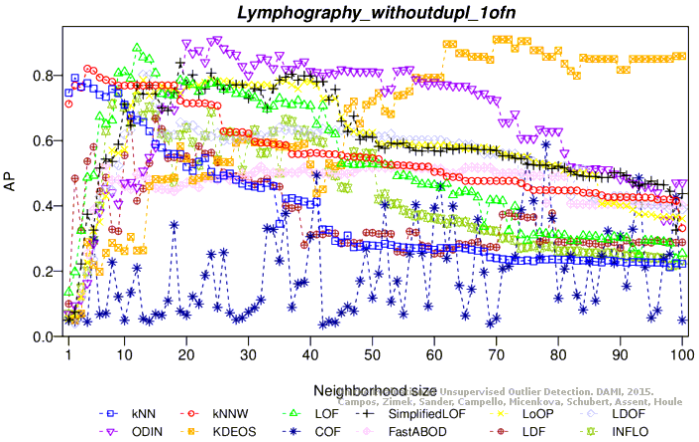
Plots

Precision at *n* **Adjusted precision at *n***



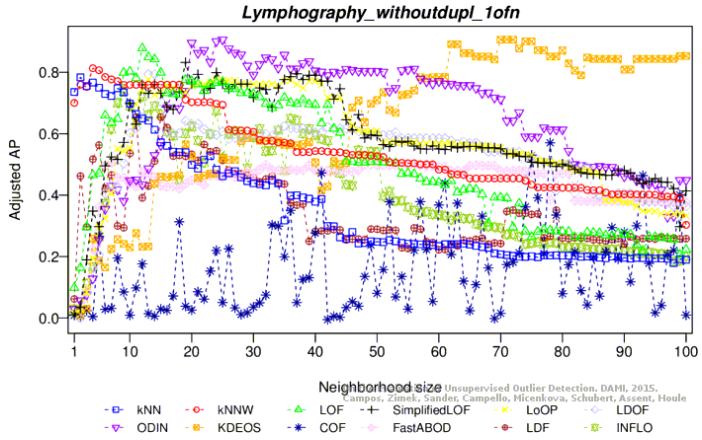


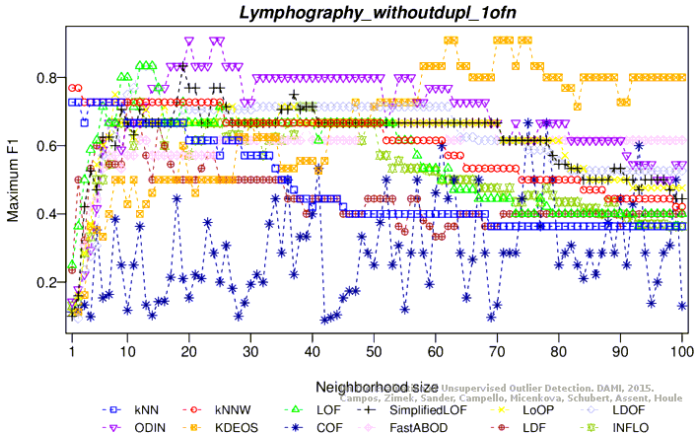
Average precision



Adjusted average precision

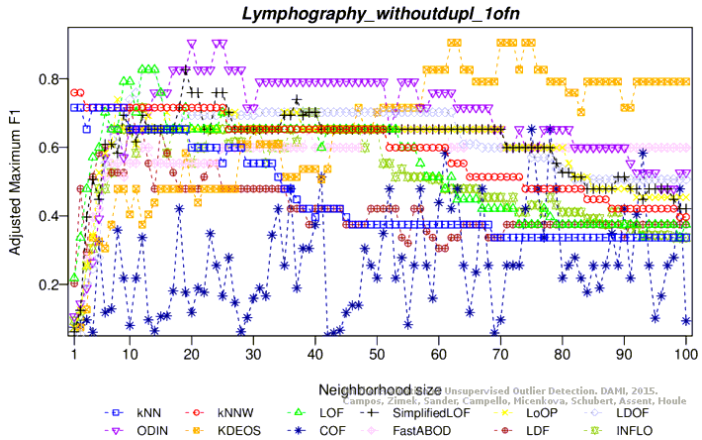
Maximum F1 score

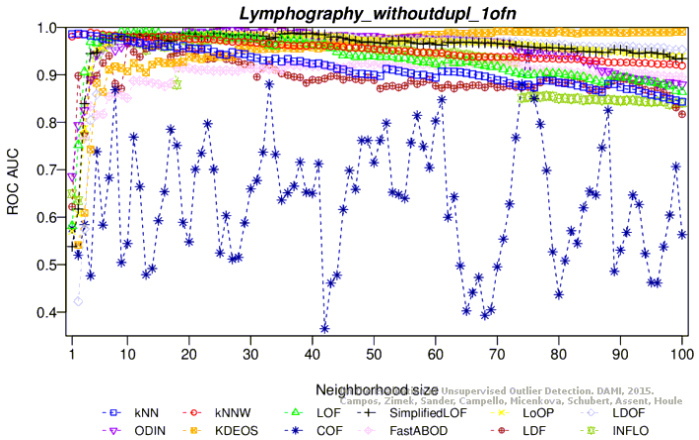




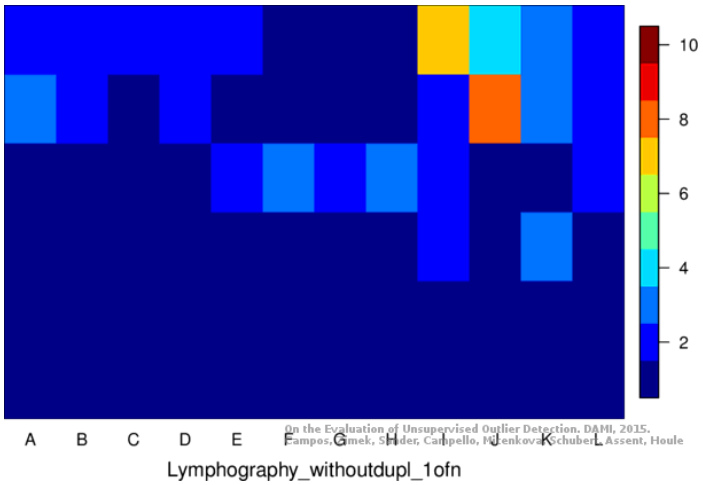
Adjusted maximum F1 score

ROC AUC





Diversity



A: KNN, B: KNNW, C: LOF, D: SimplifiedLOF, E: LoOP, F: LDOF
G: ODIN, H: KDEOS, I: COF, J: FastABOD, K: LDF, L: INFLO

Not normalized, without duplicates, categorial attributes removed

This version contains 3 attributes, 148 objects, 6 outliers (4.05%)

Download raw algorithm results (313.8 kB) Download raw algorithm evaluation table (28.5 kB)

Best Parameters

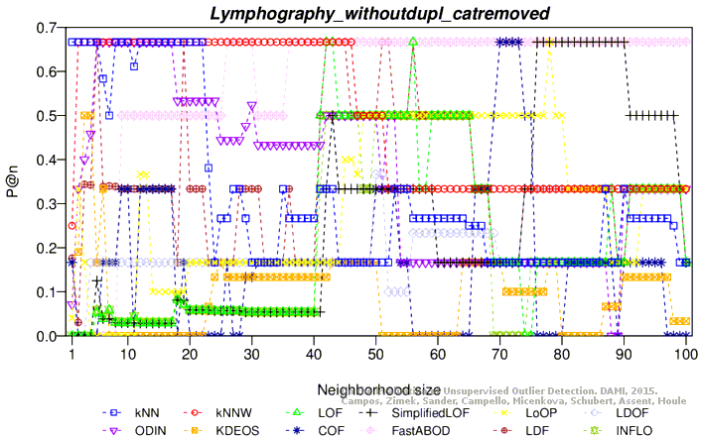
The following table contains the best (overall and per-method) results for each method and evaluation measure (when the same score was achieved twice, only the smallest k is given).
The Maximum F1-Measure is complimentary in addition to the measures in the original publication.

Algorithm	k	P@n	Adj. P@n	AP	Adj. AP	Max-F1	Adj. MF1	ROC AUC
KNN	**1**	0.66667	0.65258	0.61351	0.59718	0.72727	0.71575	0.81808
KNN	**2**	0.66667	0.65258	0.62462	0.60876	0.66667	0.65258	0.80692
KNN	**4**	0.66667	0.65258	0.48945	0.46788	0.72727	0.71575	0.85563
KNNW	**2**	0.66667	0.65258	0.47462	0.45243	0.72727	0.71575	0.81514
KNNW	**5**	0.66667	0.65258	0.57278	0.55473	0.72727	0.71575	0.83862
LOF	**42**	0.66667	0.65258	0.56727	0.54899	0.66667	0.65258	0.82923
LOF	**43**	0.66667	0.65258	0.59227	0.57505	0.66667	0.65258	0.83040
LOF	**50**	0.50000	0.47887	0.51847	0.49812	0.54545	0.52625	0.83509
SimplifiedLOF	**43**	0.50000	0.47887	0.38917	0.36336	0.50000	0.47887	0.92430
SimplifiedLOF	**76**	0.66667	0.65258	0.45792	0.43501	0.66667	0.65258	0.83040
SimplifiedLOF	**82**	0.66667	0.65258	0.56990	0.55173	0.66667	0.65258	0.83627
LoOP	**52**	0.50000	0.47887	0.43129	0.40726	0.50000	0.47887	0.91491
LoOP	**55**	0.50000	0.47887	0.45249	0.42935	0.53333	0.51362	0.91021
LoOP	**78**	0.66667	0.65258	0.39868	0.37327	0.66667	0.65258	0.82923
LDOF	**50**	0.36667	0.33991	0.32263	0.29401	0.47059	0.44822	0.89261
LDOF	**51**	0.36667	0.33991	0.29315	0.26329	0.47059	0.44822	0.89378

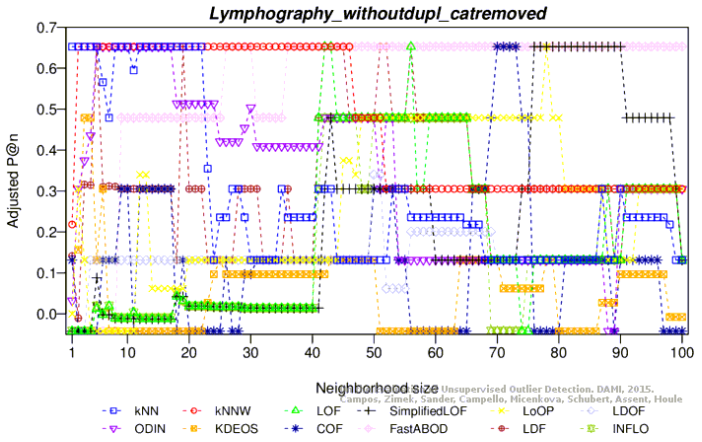
LDOF	**76**	0.33333	0.30516	0.31942	0.29067	0.57143	0.55332	0.86678
LDOF	**97**	0.33333	0.30516	0.37482	0.34840	0.57143	0.55332	0.85857
ODIN	**5**	0.66667	0.65258	0.53178	0.51199	0.66667	0.65258	0.87265
ODIN	**8**	0.66667	0.65258	0.69605	0.68321	0.72727	0.71575	0.89671
ODIN	**30**	0.52381	0.50369	0.55037	0.53137	0.53333	0.51362	0.91373
FastABOD	**15**	0.50000	0.47887	0.57492	0.55696	0.61538	0.59913	0.81631
FastABOD	**22**	0.50000	0.47887	0.46596	0.44340	0.61538	0.59913	0.82688
FastABOD	**26**	0.66667	0.65258	0.48059	0.45864	0.66667	0.65258	0.81984
KDEOS	**3**	0.50000	0.47887	0.56796	0.54970	0.61538	0.59913	0.83627
KDEOS	**20**	0.00000	-0.04225	0.18781	0.15349	0.34783	0.32027	0.83862
LDF	**5**	0.66667	0.65258	0.60767	0.59109	0.72727	0.71575	0.85563
INFLO	**19**	0.07143	0.03219	0.14685	0.11080	0.33333	0.30516	0.82688
INFLO	**42**	0.50000	0.47887	0.49116	0.46966	0.50000	0.47887	0.78638
INFLO	**43**	0.50000	0.47887	0.53283	0.51309	0.60000	0.58310	0.78873
INFLO	**56**	0.50000	0.47887	0.39901	0.37361	0.61538	0.59913	0.76995
COF	**69**	0.50000	0.47887	0.36800	0.34129	0.61538	0.59913	0.89495
COF	**70**	0.66667	0.65258	0.42049	0.39600	0.66667	0.65258	0.87383
COF	**74**	0.50000	0.47887	0.48372	0.46191	0.60000	0.58310	0.84683

Plots

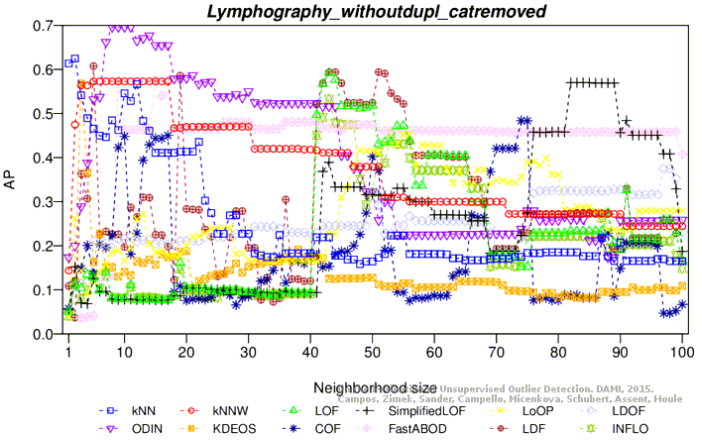
Precision at *n*



Adjusted precision at *n*

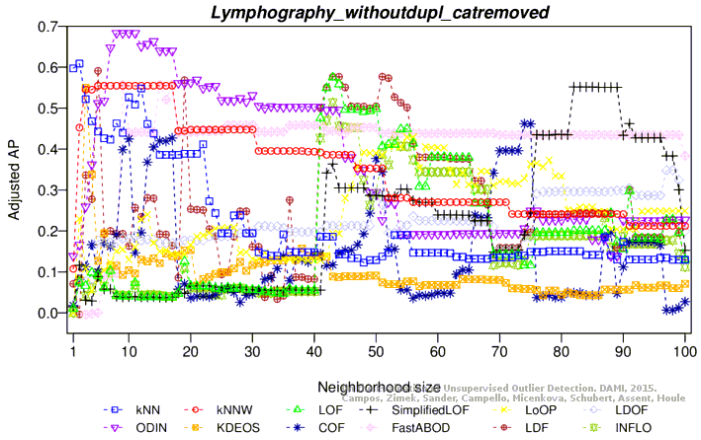


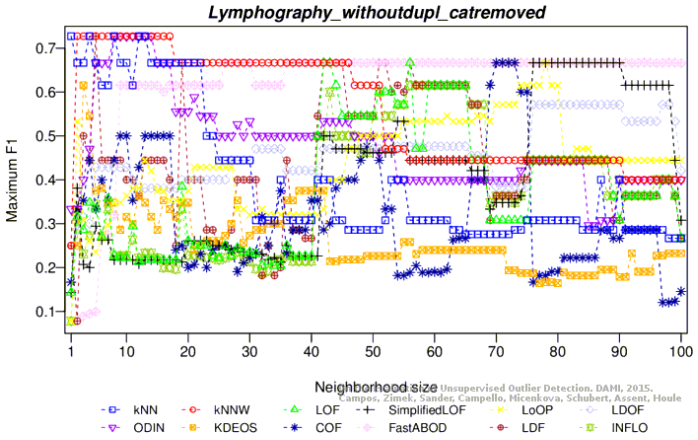
Average precision



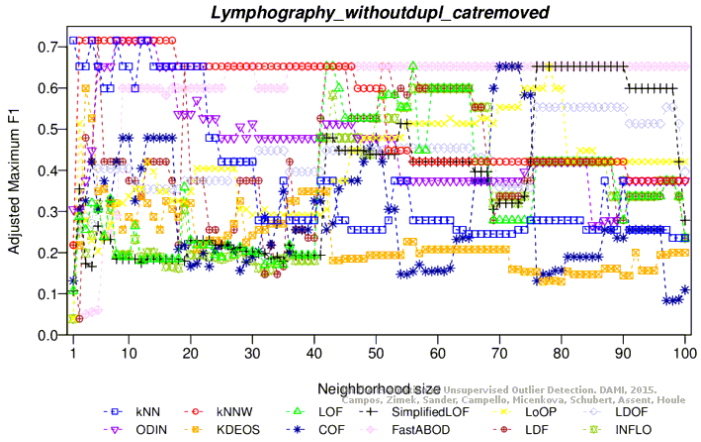
Adjusted average precision

Maximum F1 score

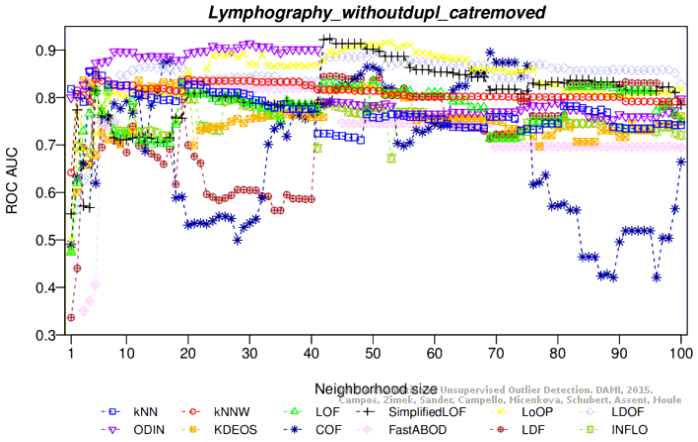




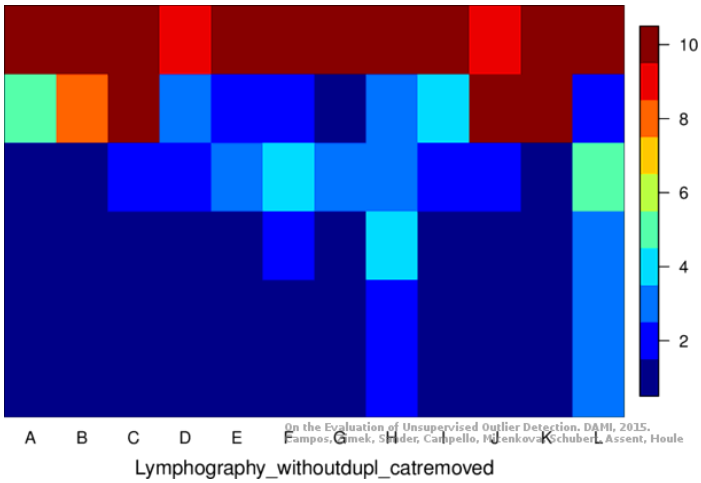
Adjusted maximum F1 score



ROC AUC



Diversity



A: KNN, B: KNNW, C: LOF, D: SimplifiedLOF, E: LoOP, F: LDOF
G: ODIN, H: KDEOS, I: COF, J: FastABOD, K: LDF, L: INFLO

File generated: 2016-07-05T21:48:10