

Test results

Segmentation Metrics

Metric	Value
FP	24734
TP	173754
FN	23301
Precision	0.8753879327717544
Recall	0.8817538250742178
Accuracy	0.7834202778316328
F1	0.8785593475298513
n_true	197055
n_pred	198488
mean_true_score	0.7054480878163006
mean_matched_score	0.8000510661316638
panoptic_quality	0.7028923426511965

Segmentation Metrics per class

Metric	Neutrophil	Epithelial	Lymphocyte	Plasma	Eosinophil	Connective tissue
FP	2736.0000	12602.0000	10780.0000	13666.0000	2228.0000	10113.0000
TP	349.0000	64041.0000	44640.0000	10514.0000	1145.0000	25524.0000
FN	336.0000	20447.0000	13548.0000	3061.0000	597.0000	12892.0000
Precision	0.1131	0.8356	0.8055	0.4348	0.3395	0.7162
Recall	0.5095	0.7580	0.7672	0.7745	0.6573	0.6644
Accuracy	0.1020	0.6596	0.6473	0.3860	0.2884	0.5260
F1	0.1851	0.7949	0.7859	0.5570	0.4477	0.6893
n_true	685.0000	84488.0000	58188.0000	13575.0000	1742.0000	38416.0000
n_pred	3085.0000	76643.0000	55420.0000	24180.0000	3373.0000	35637.0000
mean_true_score	0.3775	0.5799	0.6516	0.6469	0.4594	0.5385
mean_matched_score	0.7409	0.7651	0.8494	0.8352	0.6989	0.8105
panoptic_quality	0.1372	0.6082	0.6675	0.4652	0.3129	0.5587

Confusion Matrix

Confusion Matrix													
	Background -	0	783	4739	3426	1204	488	3960					
	Neutrophil -	0	405	0	92	1	45	13					
	Epithelial -	0	131	70844	2355	1376	8	3802					
	Lymphocyte -	0	1138	302	45015	8113	704	970					
	Plasma -	0	120	76	1640	10650	446	353					
	Eosinophil -	0	109	0	37	111	1371	7					
	Connective tissue -	0	403	778	2878	2734	311	26550					
Background -		Neutrophil -		Epithelial -		Lymphocyte -		Plasma -		Eosinophil -		Connective tissue -	

Confusion Matrix normalized

Confusion Matrix normalized							
	Background	Neutrophil	Epithelial	Lymphocyte	Plasma	Eosinophil	Connective tissue
Background	0.00	0.25	0.06	0.06	0.05	0.14	0.11
Neutrophil	0.00	0.13	0.00	0.00	0.00	0.01	0.00
Epithelial	0.00	0.04	0.92	0.04	0.06	0.00	0.11
Lymphocyte	0.00	0.37	0.00	0.81	0.34	0.21	0.03
Plasma	0.00	0.04	0.00	0.03	0.44	0.13	0.01
Eosinophil	0.00	0.04	0.00	0.00	0.00	0.41	0.00
Connective tissue	0.00	0.13	0.01	0.05	0.11	0.09	0.74
	Background	Neutrophil	Epithelial	Lymphocyte	Plasma	Eosinophil	Connective tissue

Segmentation Metrics per class after graph improvement

Metric	Neutrophil	Epithelial	Lymphocyte	Plasma	Eosinophil	Connective tissue
FP	2041.0000	16872.0000	8590.0000	10520.0000	1330.0000	9554.0000
TP	301.0000	68520.0000	43664.0000	9385.0000	1010.0000	26551.0000
FN	384.0000	15968.0000	14524.0000	4190.0000	732.0000	11865.0000
Precision	0.1285	0.8024	0.8356	0.4715	0.4316	0.7354
Recall	0.4394	0.8110	0.7504	0.6913	0.5798	0.6911
Accuracy	0.1104	0.6760	0.6539	0.3895	0.3288	0.5535
F1	0.1989	0.8067	0.7907	0.5606	0.4949	0.7126
n_true	685.0000	84488.0000	58188.0000	13575.0000	1742.0000	38416.0000
n_pred	2342.0000	85392.0000	52254.0000	19905.0000	2340.0000	36105.0000
mean_true_score	0.3281	0.6206	0.6388	0.5769	0.4022	0.5600
mean_matched_score	0.7466	0.7653	0.8513	0.8344	0.6937	0.8102
panoptic_quality	0.1485	0.6173	0.6731	0.4678	0.3433	0.5774

Confusion Matrix after graph improvement

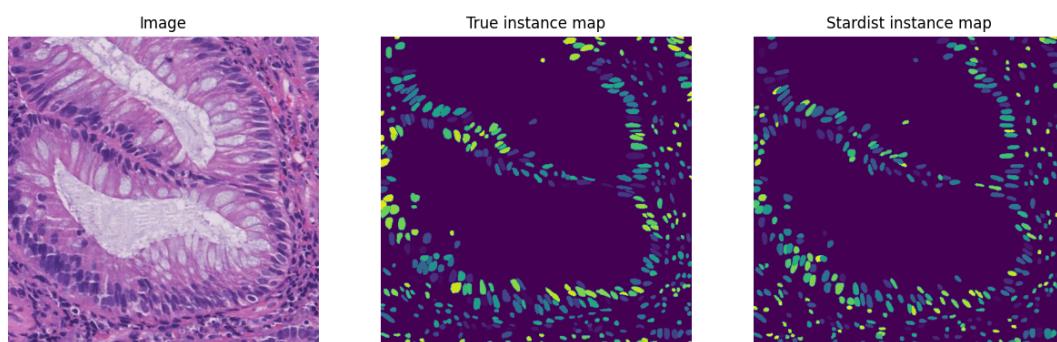
Confusion Matrix after graph improvement							
	Background -	Neutrophil -	Epithelial -	Lymphocyte -	Plasma -	Eosinophil -	Connective tissue -
Background -	0	558	5792	2919	1216	314	3801
Neutrophil -	0	348	14	137	15	24	18
Epithelial -	0	97	75612	955	223	1	1628
Lymphocyte -	0	896	1902	43995	7022	338	2089
Plasma -	0	108	487	1902	9516	305	967
Eosinophil -	0	63	6	175	177	1191	23
Connective tissue -	0	275	1679	2192	1743	167	27598
Background -		Neutrophil -	Epithelial -	Lymphocyte -	Plasma -	Eosinophil -	Connective tissue -

Confusion Matrix normalized after graph improvement

Confusion Matrix normalized after graph improvement							
	Background -	Neutrophil -	Epithelial -	Lymphocyte -	Plasma -	Eosinophil -	Connective tissue -
Background -	0.00	0.24	0.07	0.06	0.06	0.13	0.11
Neutrophil -	0.00	0.15	0.00	0.00	0.00	0.01	0.00
Epithelial -	0.00	0.04	0.88	0.02	0.01	0.00	0.05
Lymphocyte -	0.00	0.38	0.02	0.84	0.35	0.14	0.06
Plasma -	0.00	0.05	0.01	0.04	0.48	0.13	0.03
Eosinophil -	0.00	0.03	0.00	0.00	0.01	0.51	0.00
Connective tissue -	0.00	0.12	0.02	0.04	0.09	0.07	0.76

Images

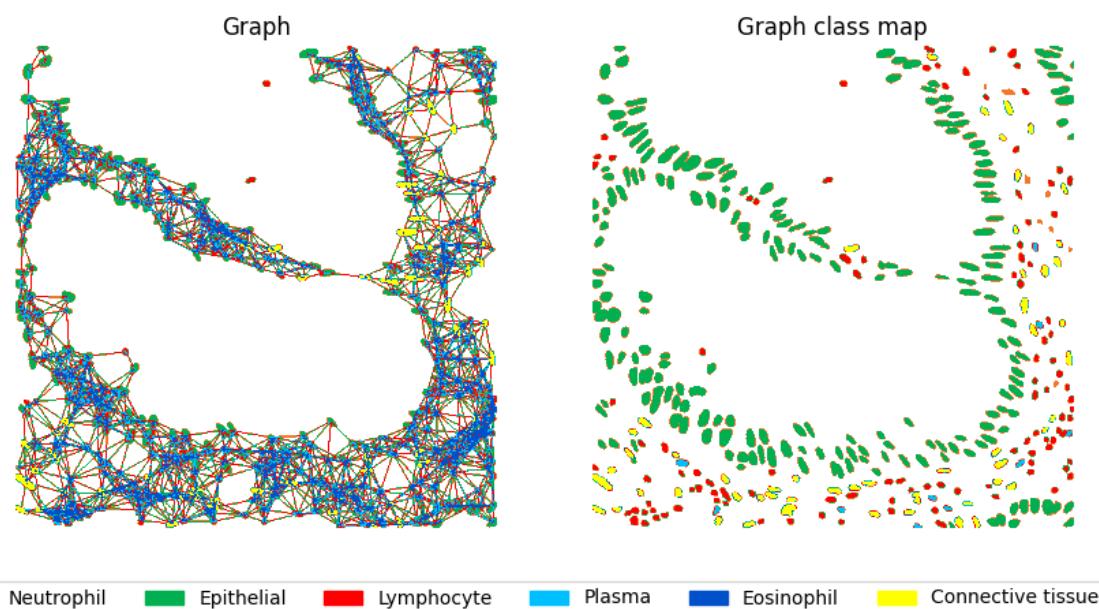
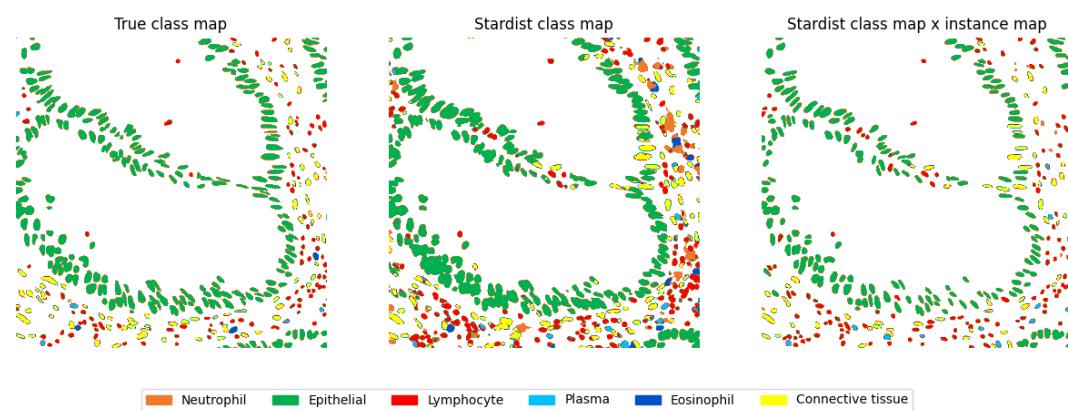
Image 1



Personal segmentation Metrics

Metric	Value
FP	44
TP	354
FN	76

Metric	Value
Precision	0.8894472361809045
Recall	0.8232558139534883
Accuracy	0.7468354430379747
F1	0.855072463768116
n_true	430
n_pred	398
mean_true_score	0.6505118436591569
mean_matched_score	0.790169753597281
panoptic_quality	0.6756523980034722



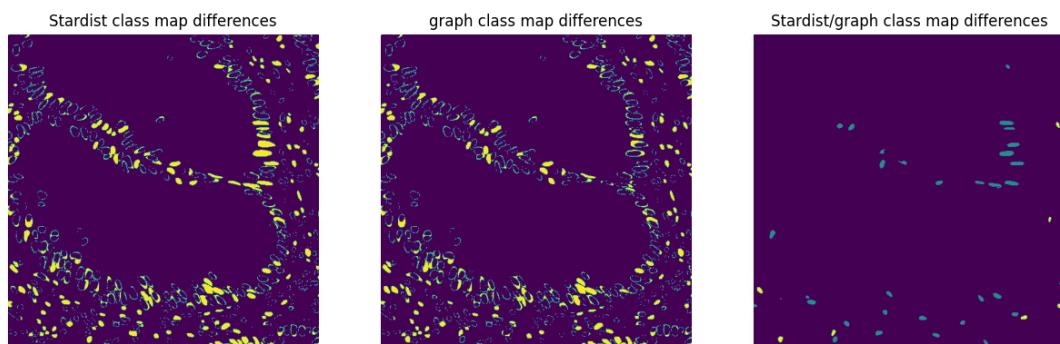
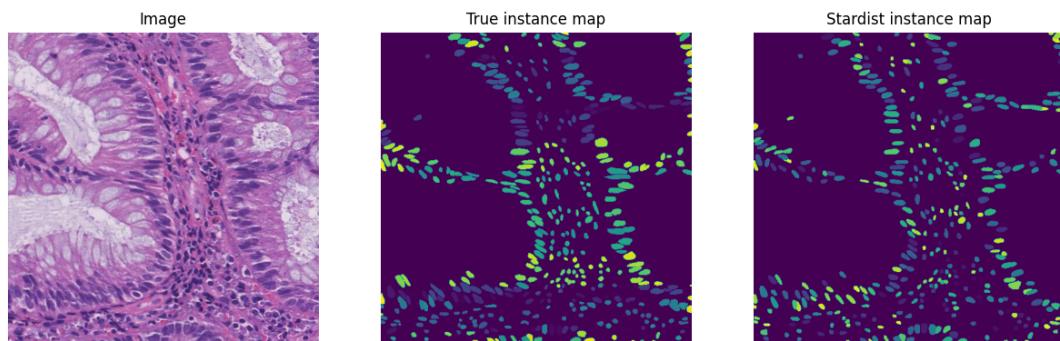


Image 2



Personal segmentation Metrics

Metric	Value
FP	41
TP	351
FN	83
Precision	0.8954081632653061
Recall	0.8087557603686636
Accuracy	0.7389473684210527
F1	0.8498789346246973
n_true	434
n_pred	392
mean_true_score	0.6415487544327837
mean_matched_score	0.7932540154525017
panoptic_quality	0.6741698775395354

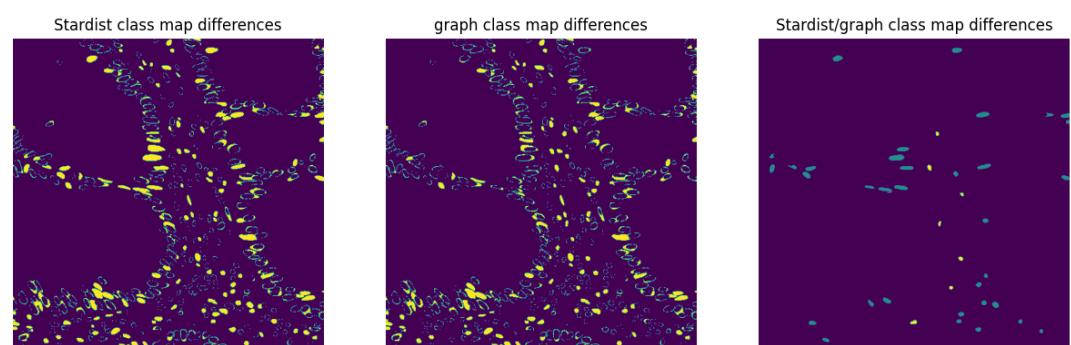
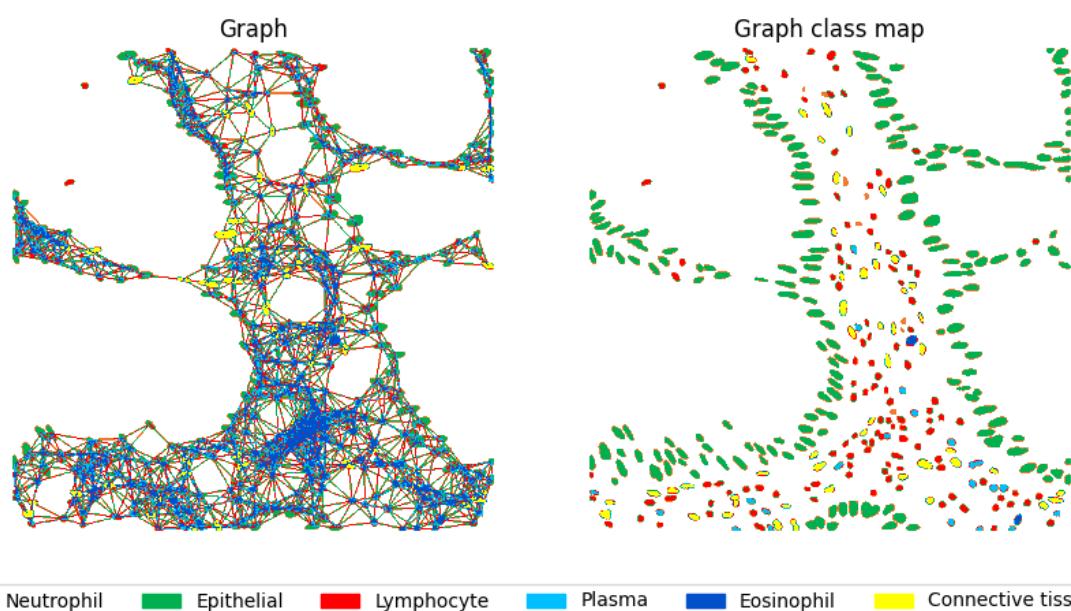
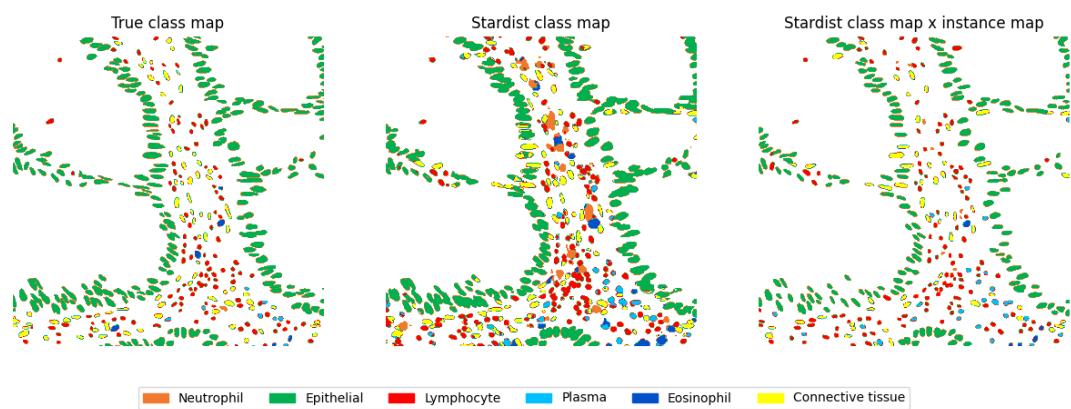
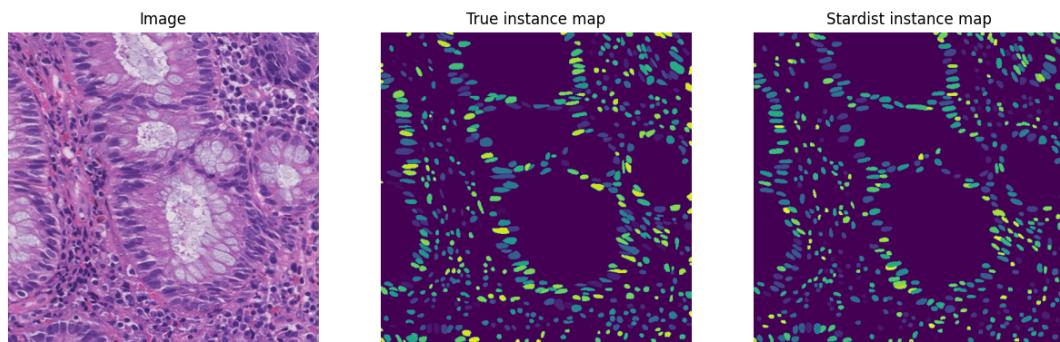
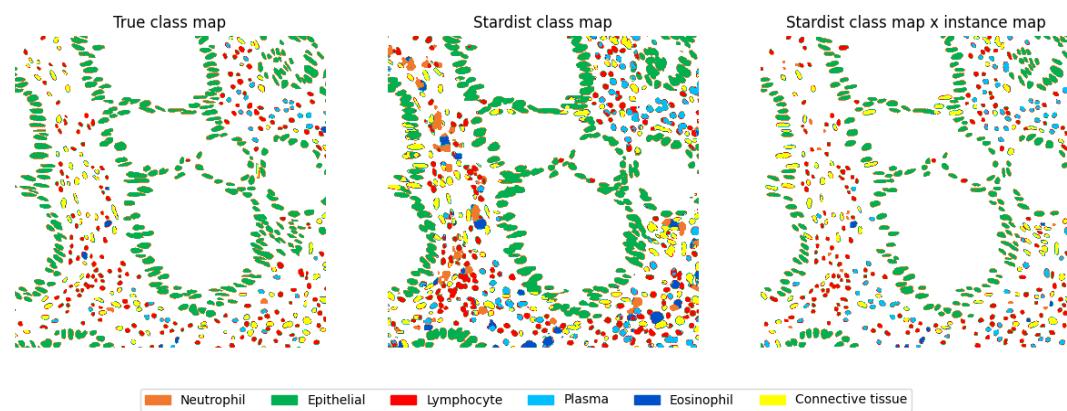


Image 3



Personal segmentation Metrics

Metric	Value
FP	71
TP	488
FN	87
Precision	0.8729874776386404
Recall	0.8486956521739131
Accuracy	0.7554179566563467
F1	0.8606701940035273
n_true	575
n_pred	559
mean_true_score	0.6766823412024456
mean_matched_score	0.7973203815397669
panoptic_quality	0.6862298874627977



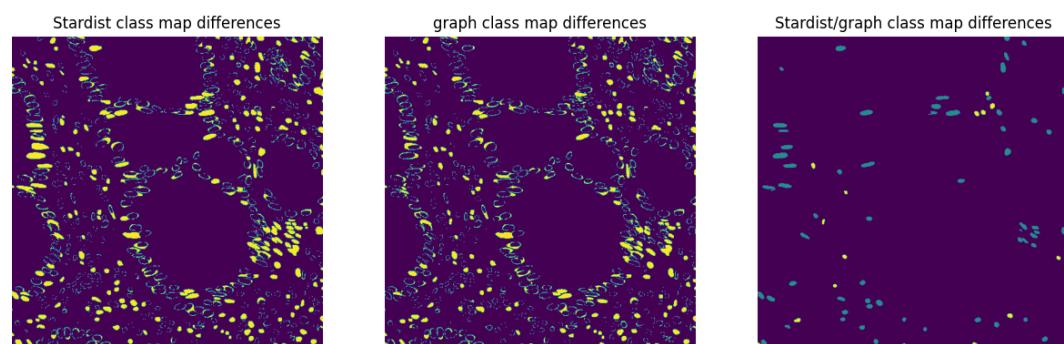
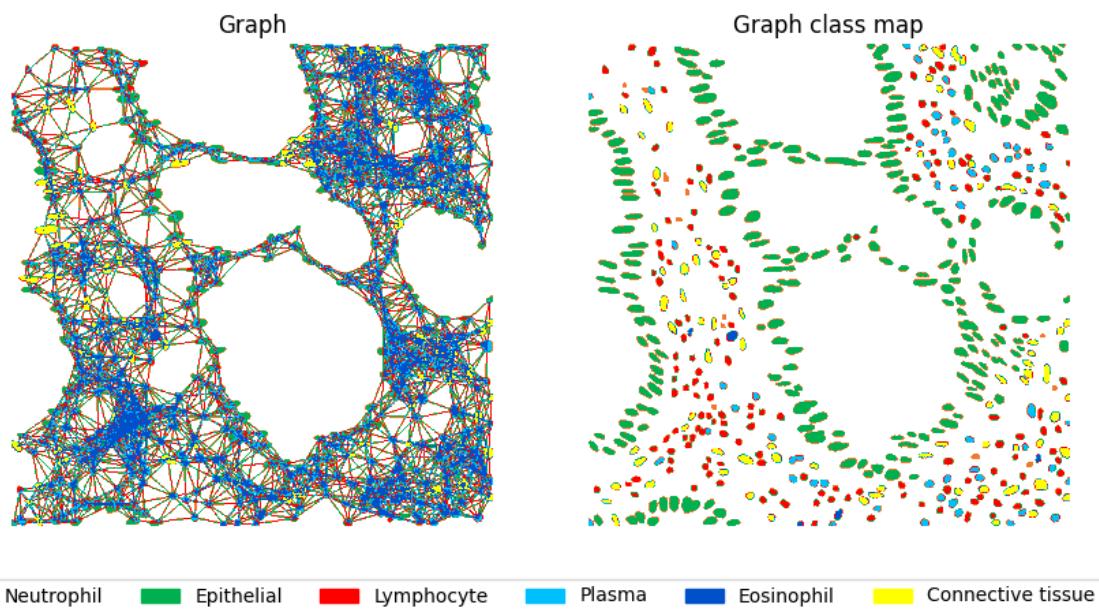
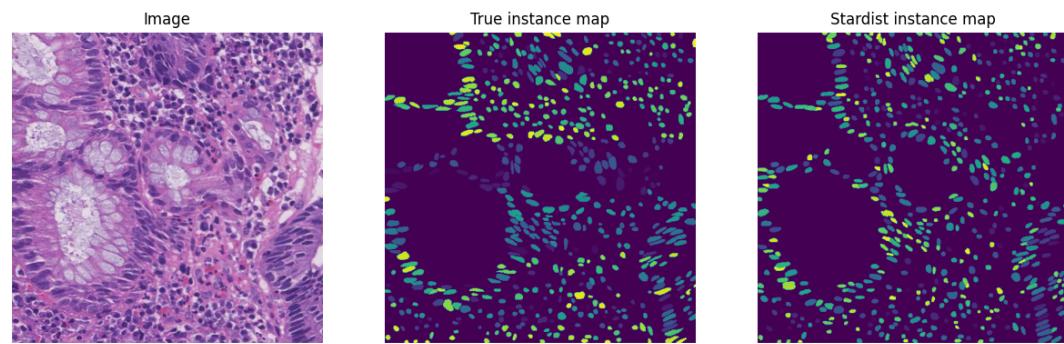


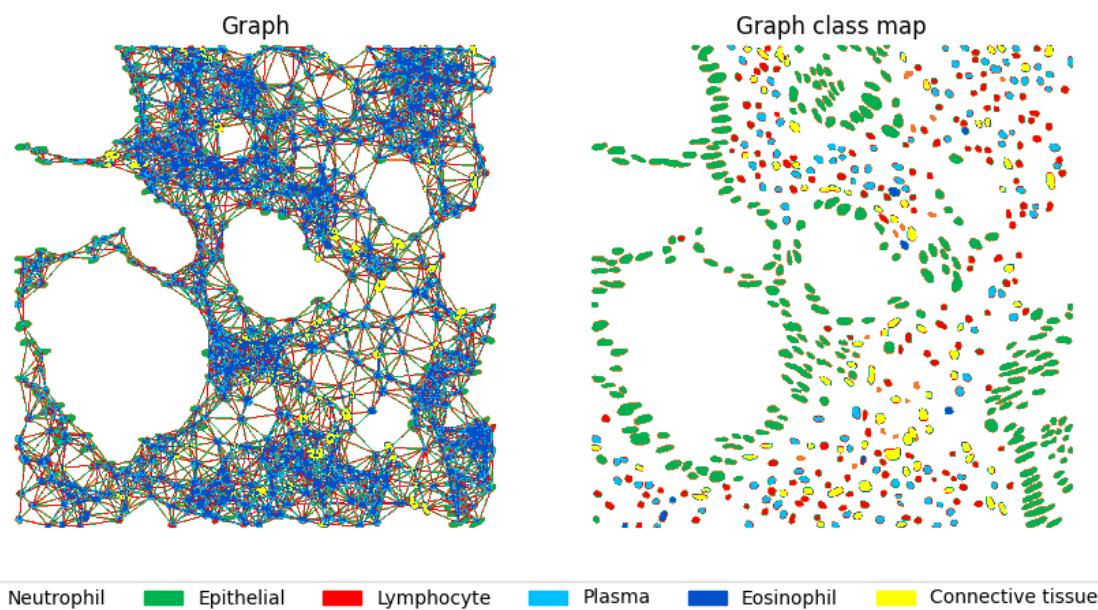
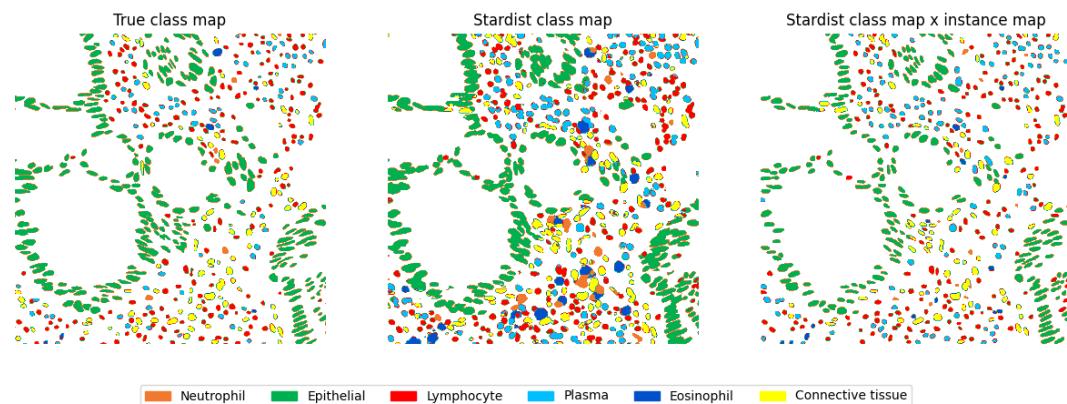
Image 4



Personal segmentation Metrics

Metric	Value
FP	90
TP	504

Metric	Value
FN	83
Precision	0.8484848484848485
Recall	0.858603066439523
Accuracy	0.7444608567208272
F1	0.8535139712108383
n_true	587
n_pred	594
mean_true_score	0.6926210783612383
mean_matched_score	0.8066836765834263
panoptic_quality	0.6885157883116797



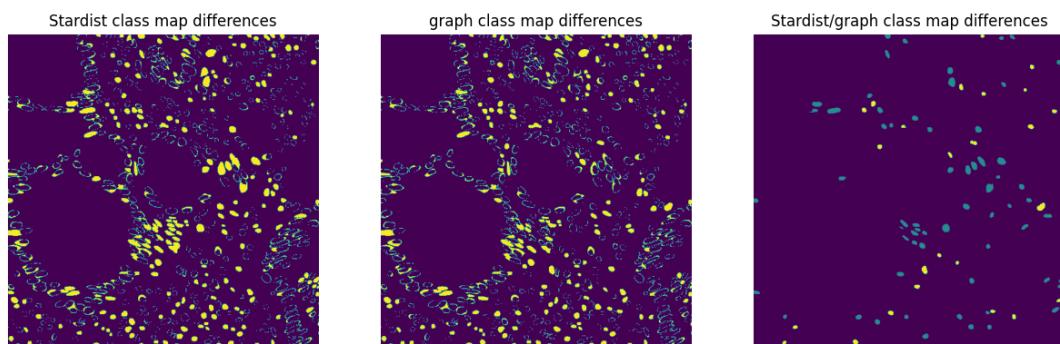
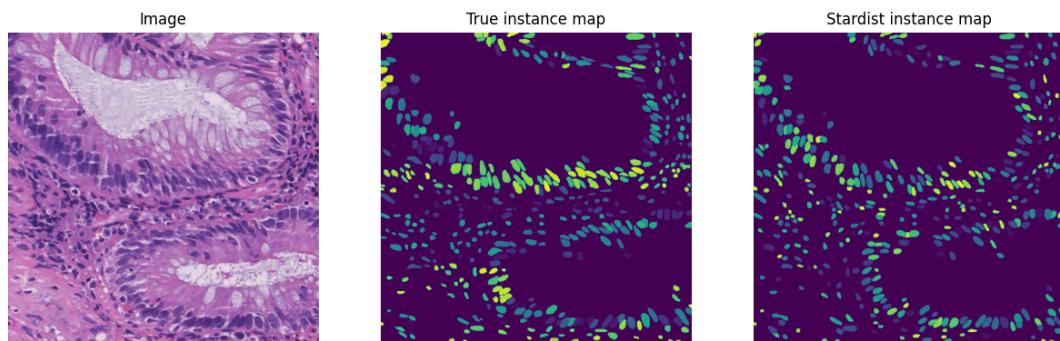


Image 5



Personal segmentation Metrics

Metric	Value
FP	49
TP	382
FN	73
Precision	0.8863109048723898
Recall	0.8395604395604396
Accuracy	0.7579365079365079
F1	0.8623024830699775
n_true	455
n_pred	431
mean_true_score	0.6639601487379808
mean_matched_score	0.7908425855386944
panoptic_quality	0.6819455252274972

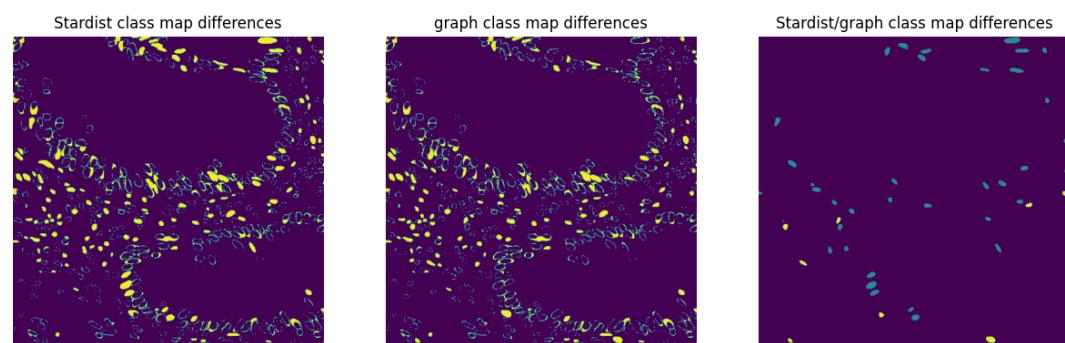
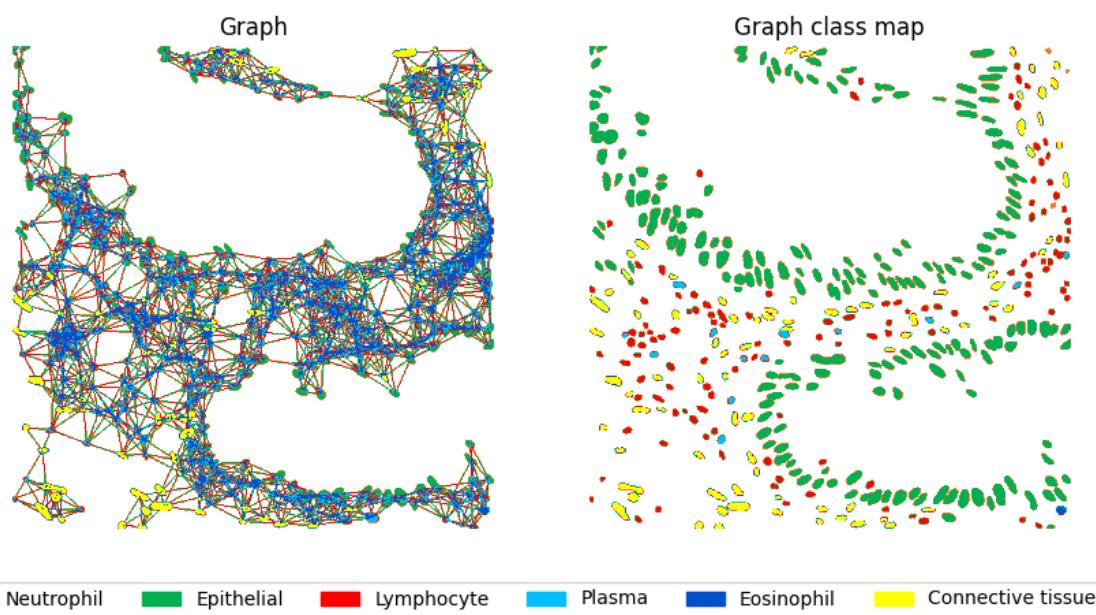
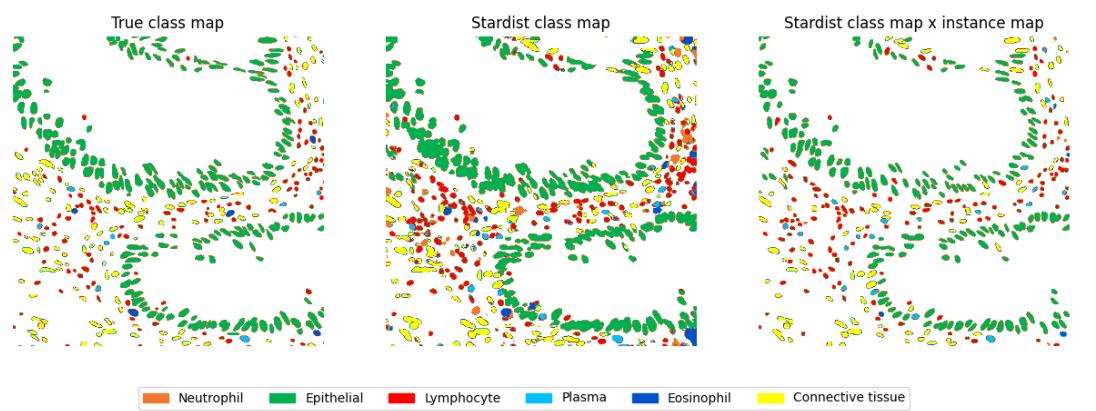
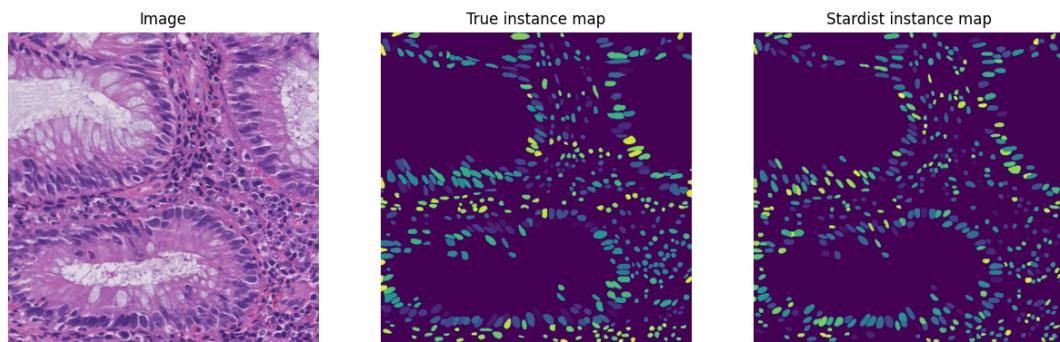
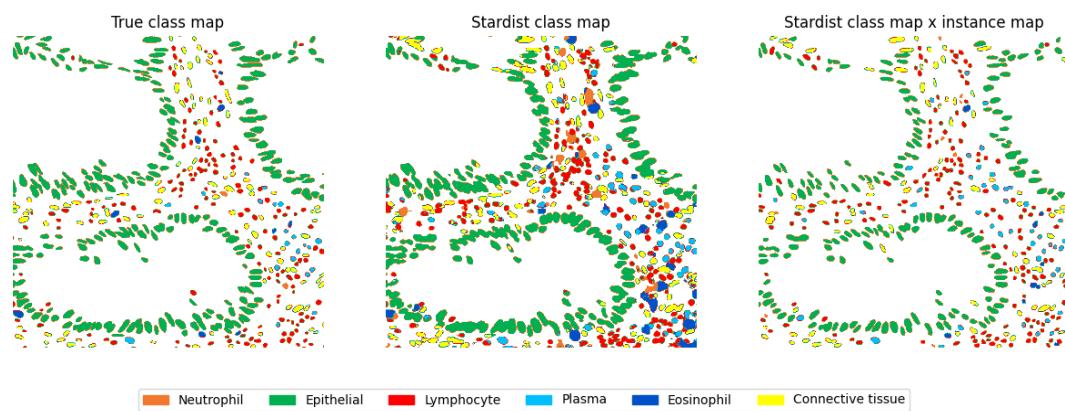


Image 6



Personal segmentation Metrics

Metric	Value
FP	60
TP	440
FN	79
Precision	0.88
Recall	0.8477842003853564
Accuracy	0.7599309153713298
F1	0.8635917566241413
n_true	519
n_pred	500
mean_true_score	0.6750925758670521
mean_matched_score	0.7963023792613636
panoptic_quality	0.6876801705103042



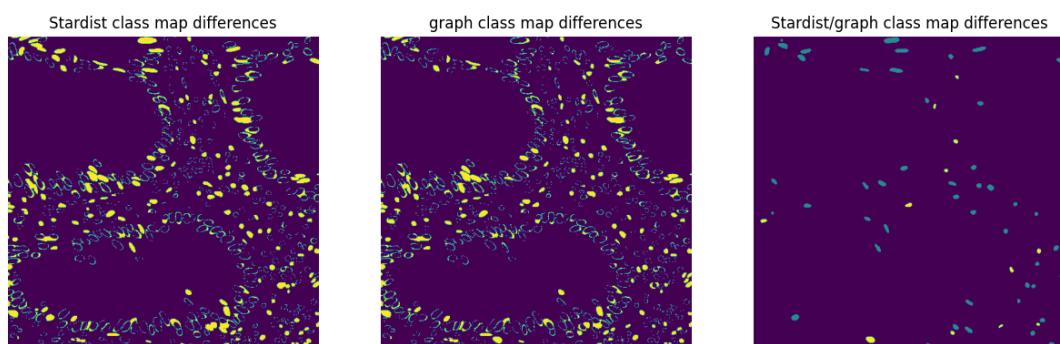
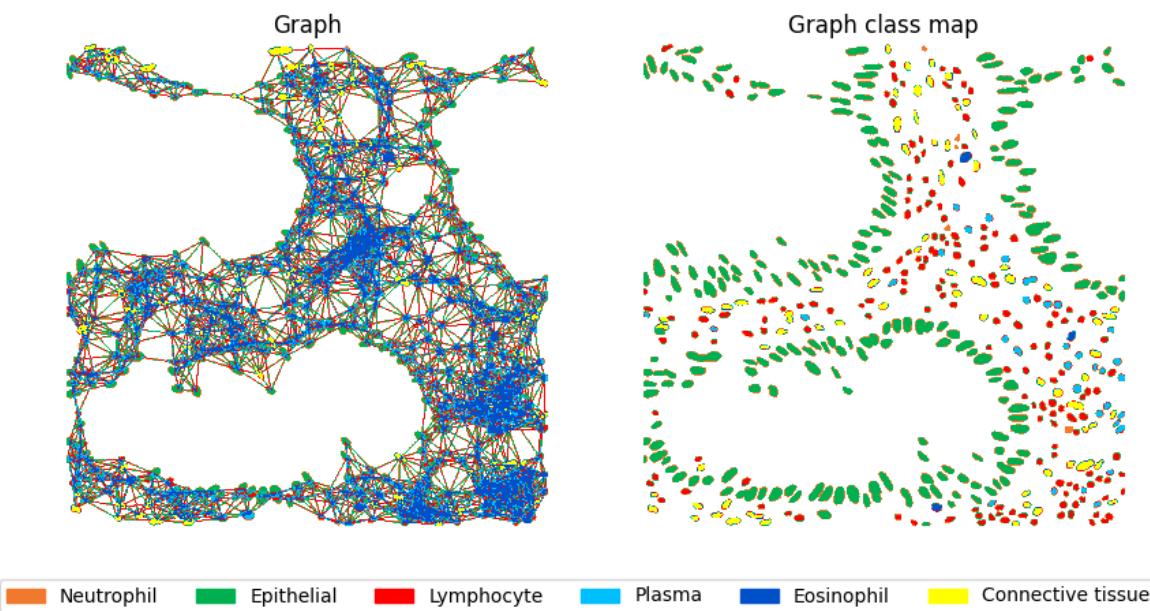
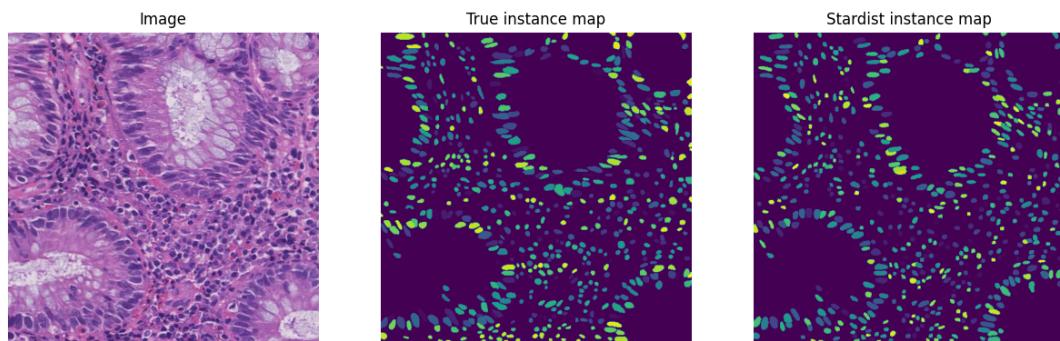


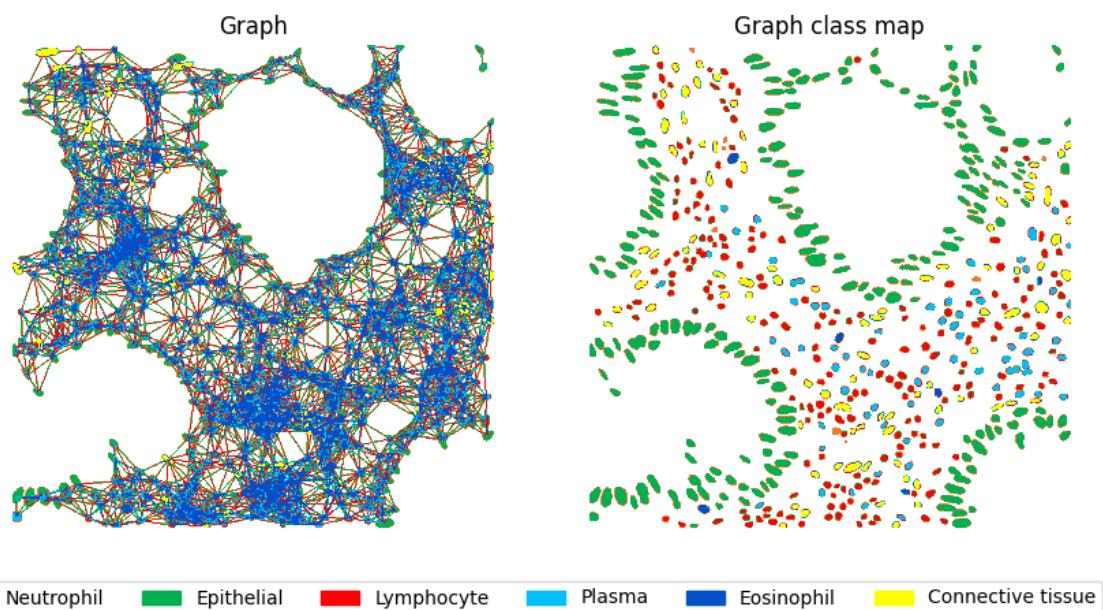
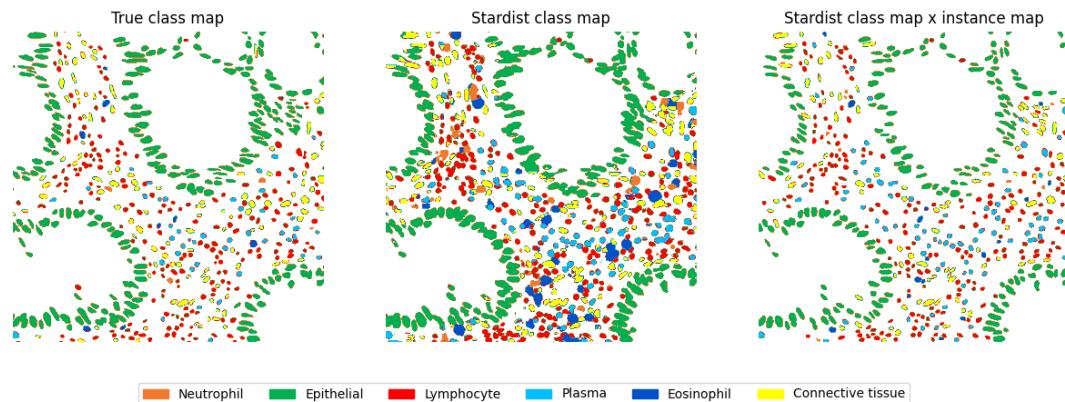
Image 7



Personal segmentation Metrics

Metric	Value
FP	75
TP	521

Metric	Value
FN	81
Precision	0.8741610738255033
Recall	0.8654485049833887
Accuracy	0.7695716395864106
F1	0.8697829716193656
n_true	602
n_pred	596
mean_true_score	0.6968072530043086
mean_matched_score	0.8051400504963412
panoptic_quality	0.7002971056904737



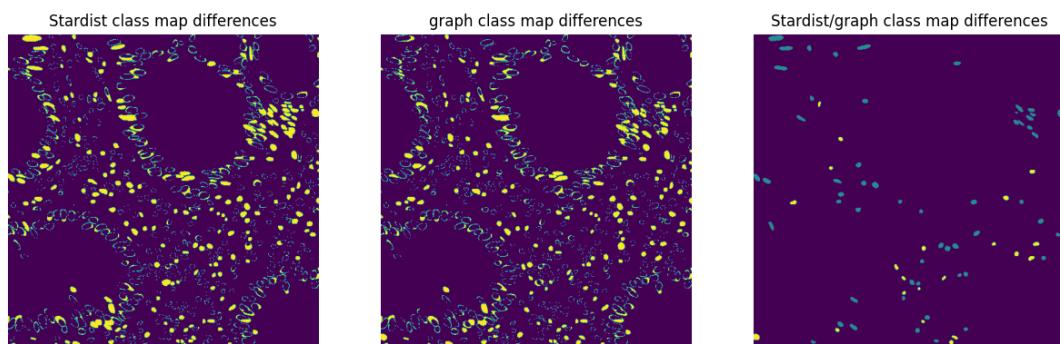
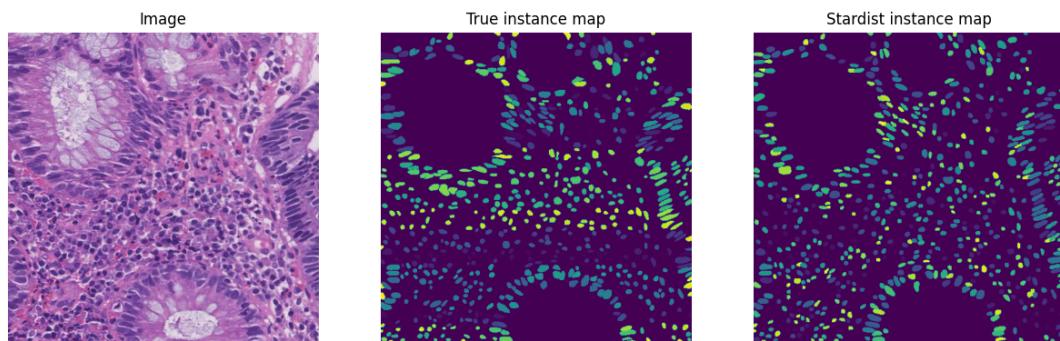


Image 8



Personal segmentation Metrics

Metric	Value
FP	94
TP	557
FN	78
Precision	0.8556067588325653
Recall	0.8771653543307086
Accuracy	0.7640603566529492
F1	0.8662519440124417
n_true	635
n_pred	651
mean_true_score	0.712043197511688
mean_matched_score	0.8117548122440249
panoptic_quality	0.7031841841678411

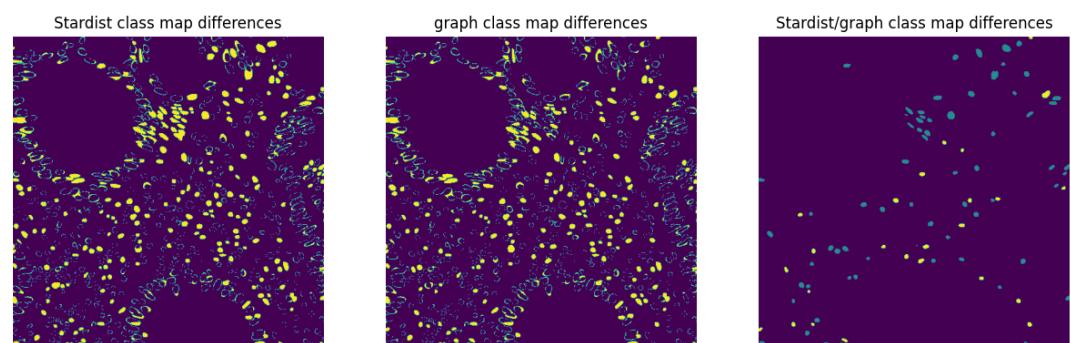
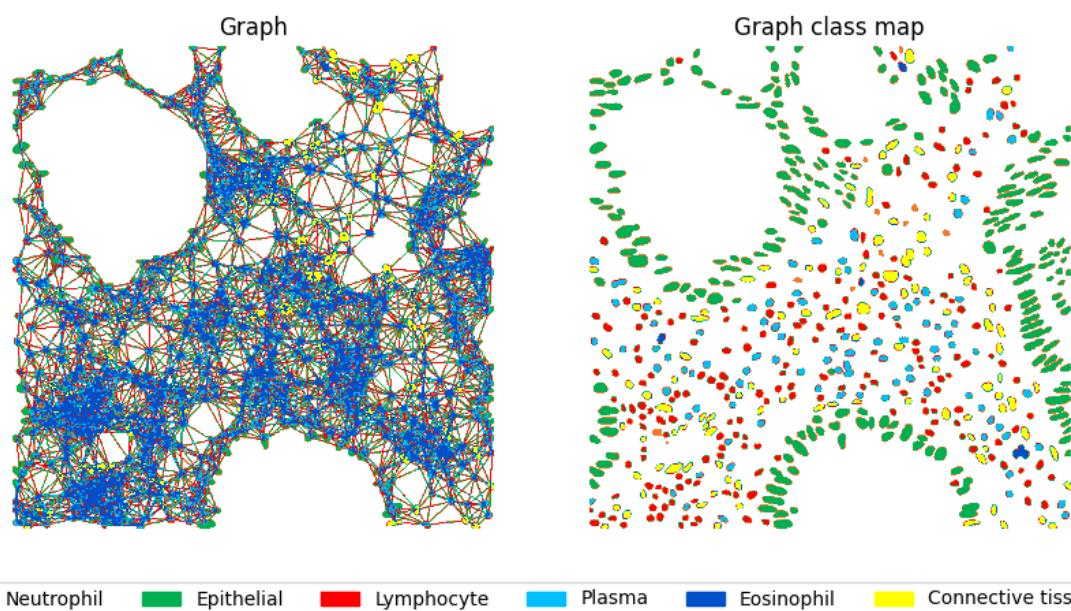
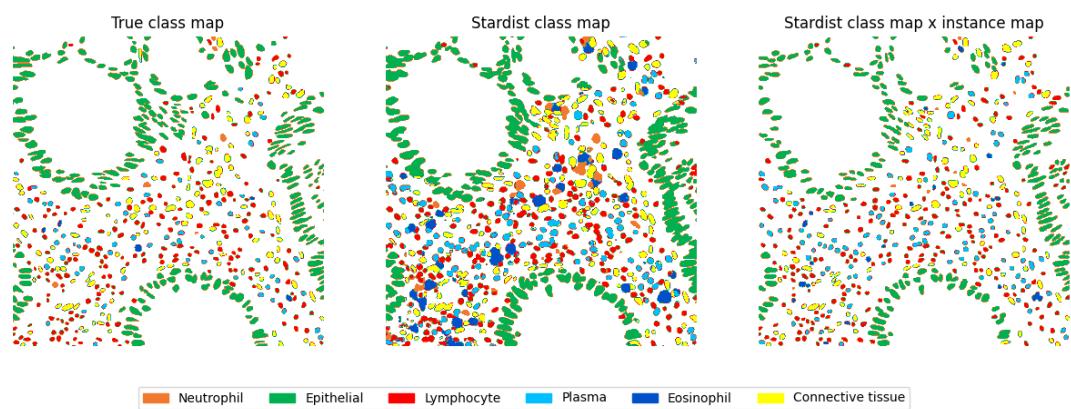
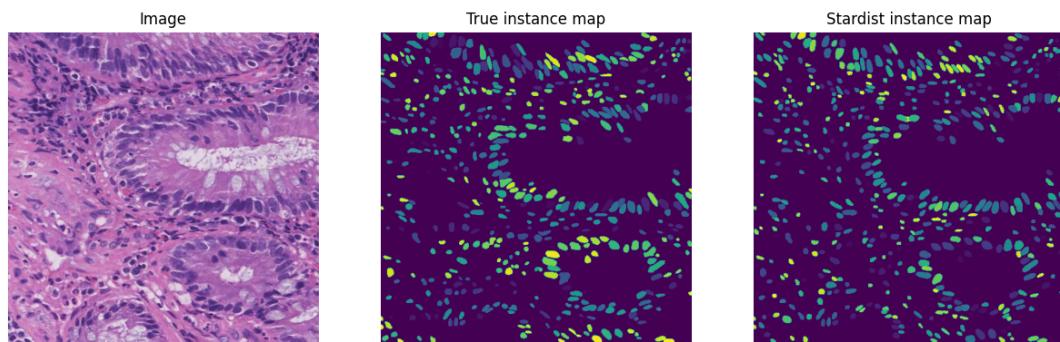
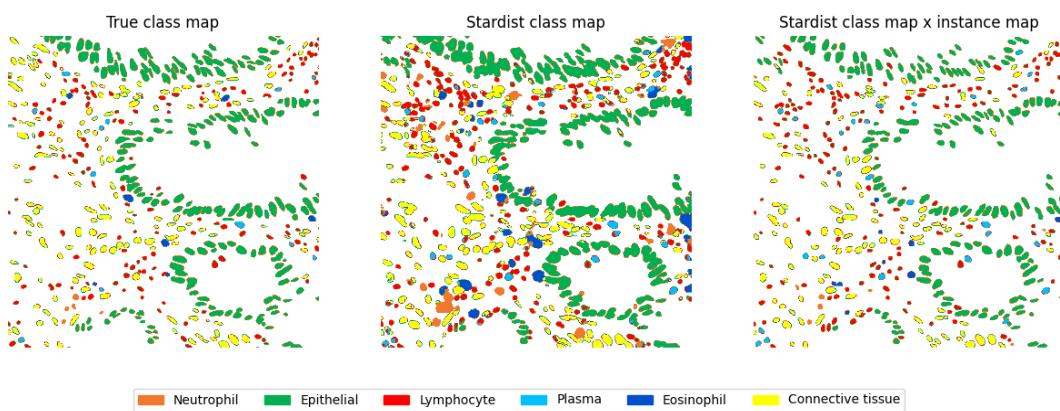


Image 9



Personal segmentation Metrics

Metric	Value
FP	66
TP	453
FN	66
Precision	0.8728323699421965
Recall	0.8728323699421965
Accuracy	0.7743589743589744
F1	0.8728323699421965
n_true	519
n_pred	519
mean_true_score	0.7016195837472905
mean_matched_score	0.803842304558154
panoptic_quality	0.7016195837472905



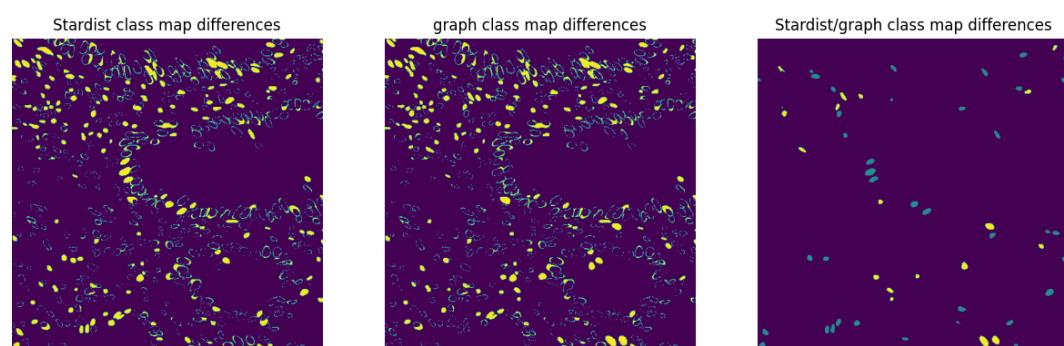
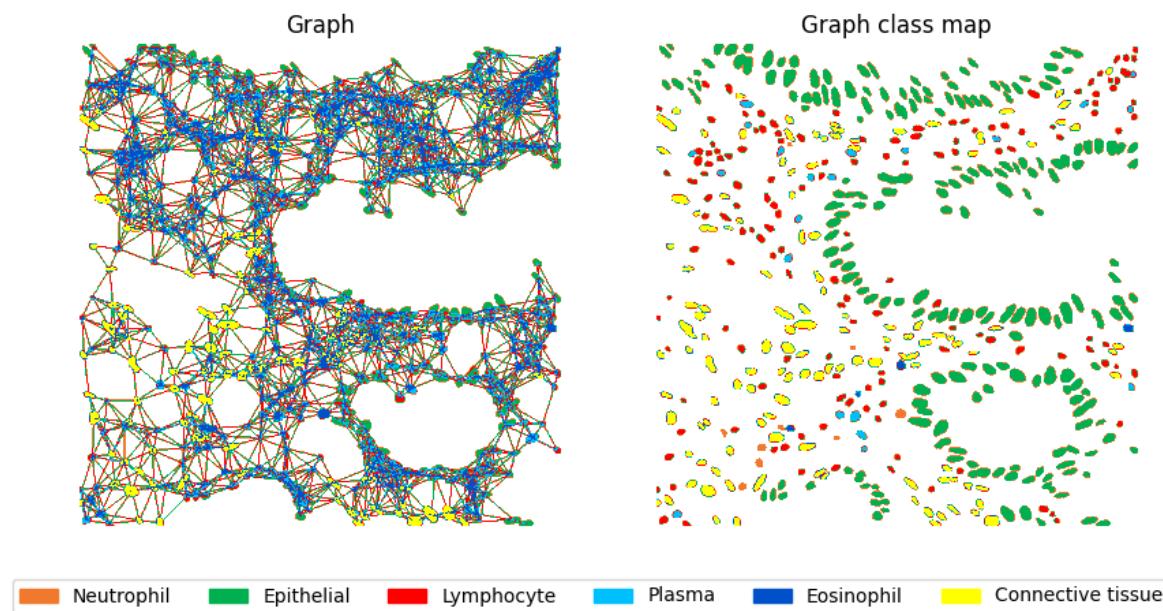
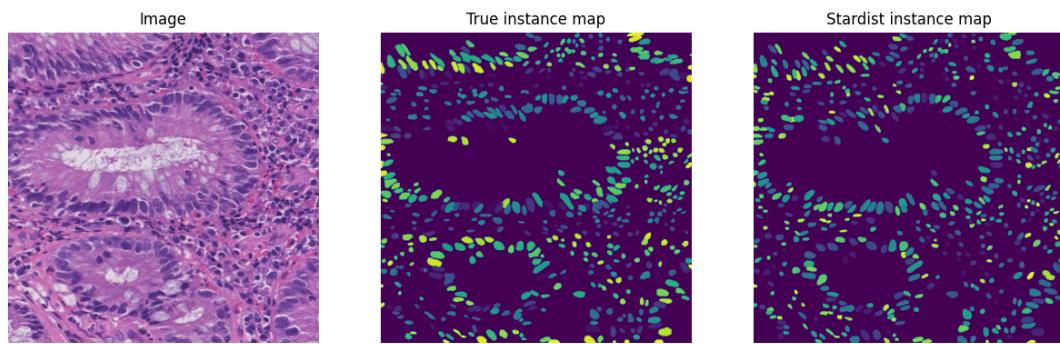


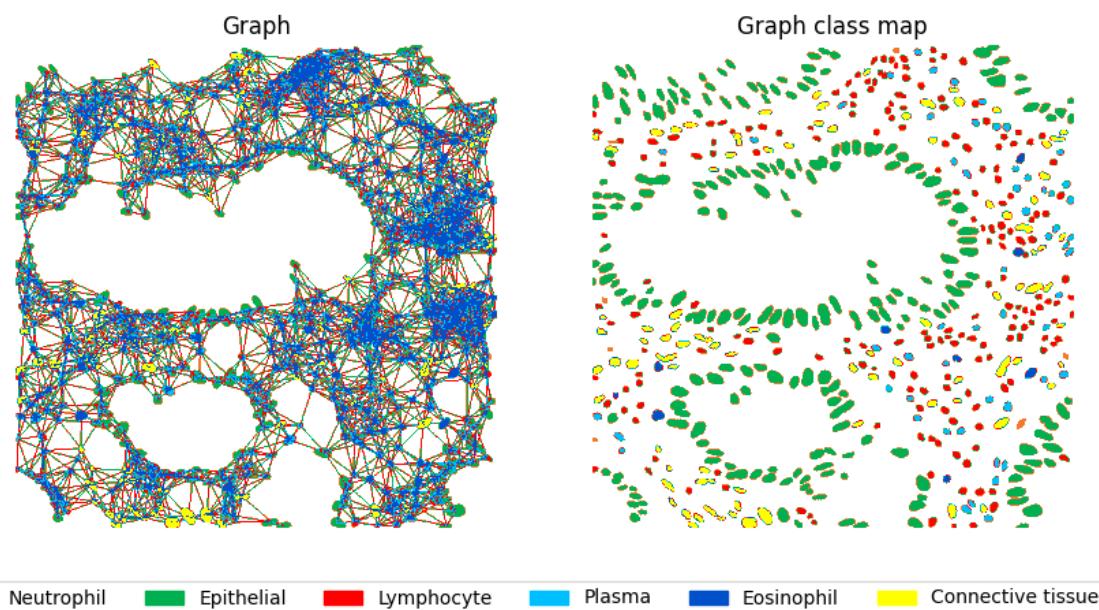
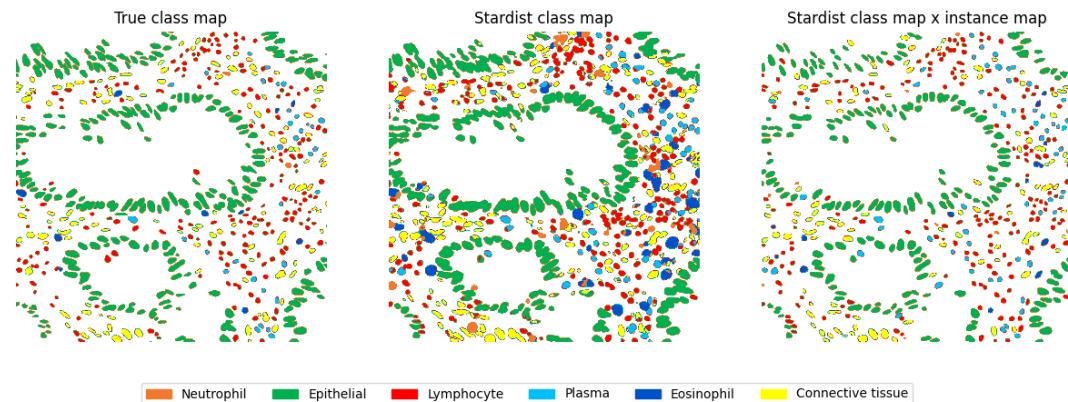
Image 10



Personal segmentation Metrics

Metric	Value
FP	60
TP	526

Metric	Value
FN	73
Precision	0.8976109215017065
Recall	0.8781302170283807
Accuracy	0.7981790591805766
F1	0.8877637130801688
n_true	599
n_pred	586
mean_true_score	0.7058445798335768
mean_matched_score	0.8038039987078185
panoptic_quality	0.7135880224815401



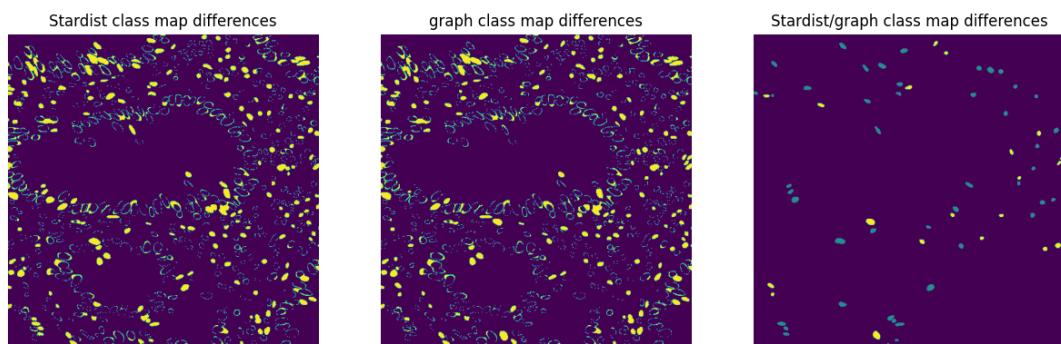
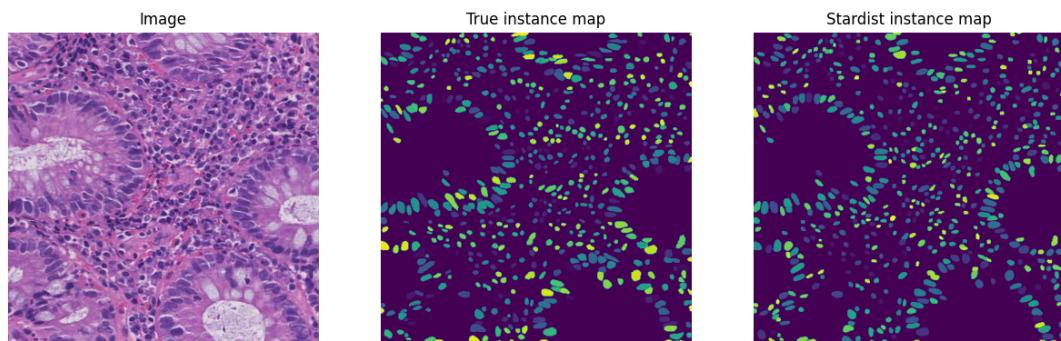


Image 11



Personal segmentation Metrics

Metric	Value
FP	66
TP	555
FN	70
Precision	0.893719806763285
Recall	0.888
Accuracy	0.8031837916063675
F1	0.8908507223113965
n_true	625
n_pred	621
mean_true_score	0.719120166015625
mean_matched_score	0.8098200067743525
panoptic_quality	0.7214287379771519

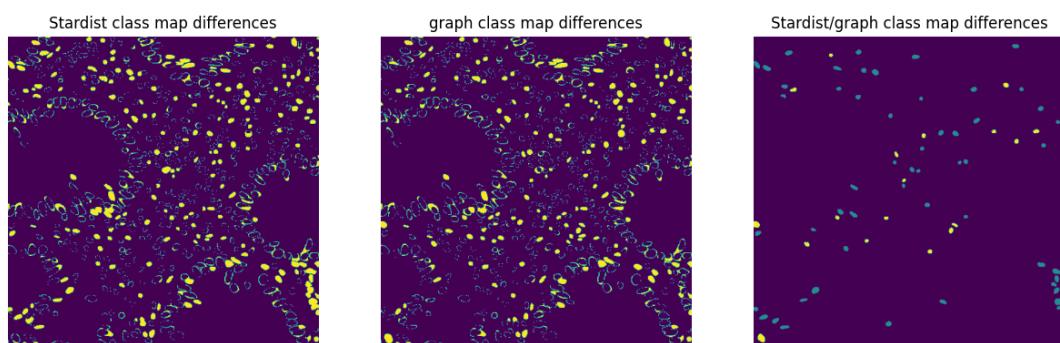
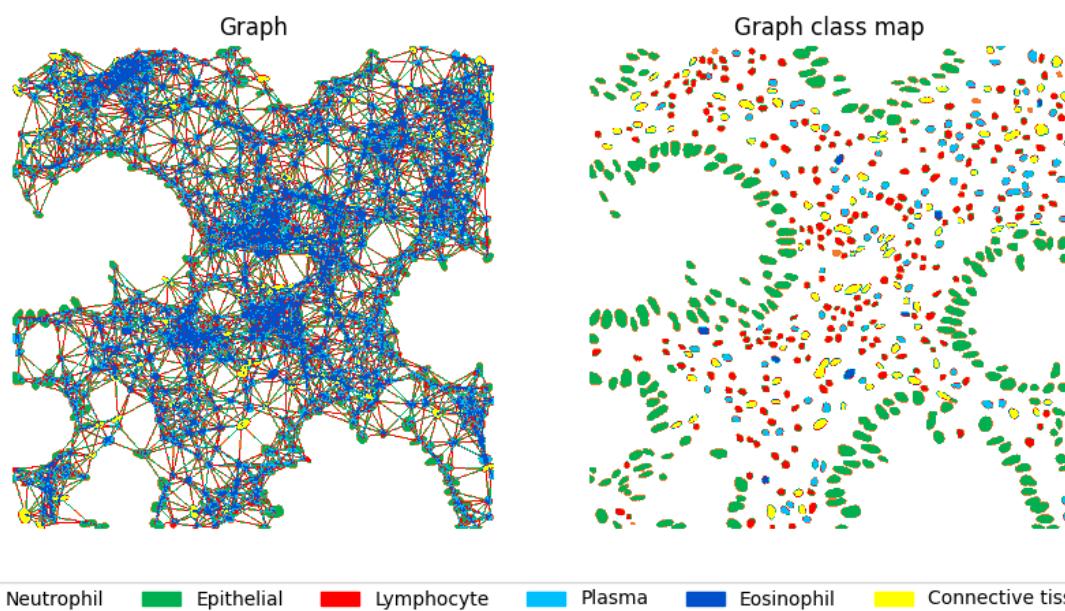
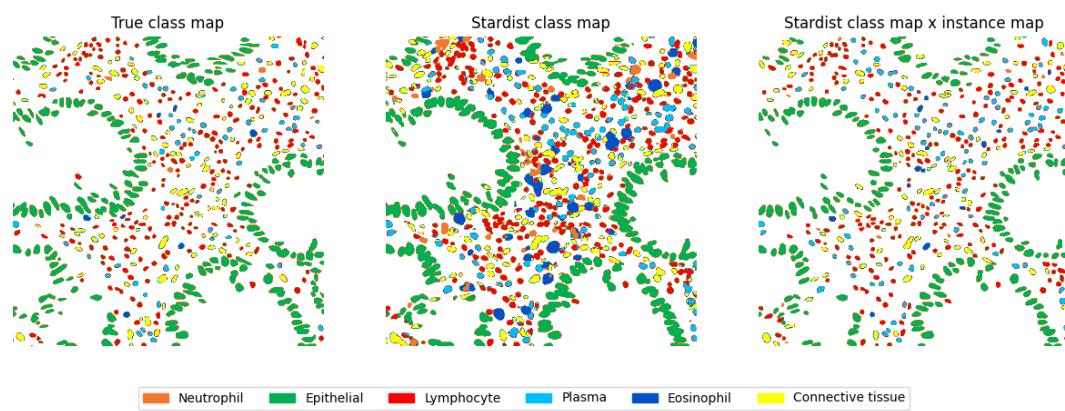
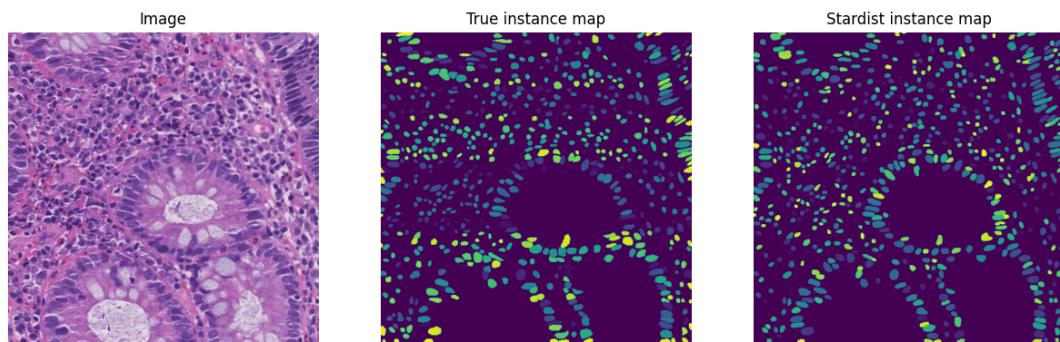
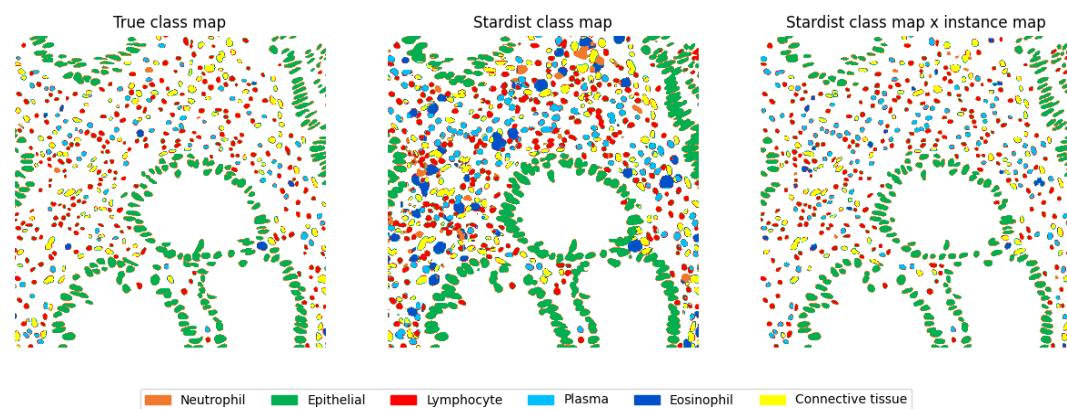


Image 12



Personal segmentation Metrics

Metric	Value
FP	83
TP	585
FN	71
Precision	0.875748502994012
Recall	0.8917682926829268
Accuracy	0.7916102841677943
F1	0.8836858006042296
n_true	656
n_pred	668
mean_true_score	0.7285018083525867
mean_matched_score	0.8169182671440972
panoptic_quality	0.7218990729294514



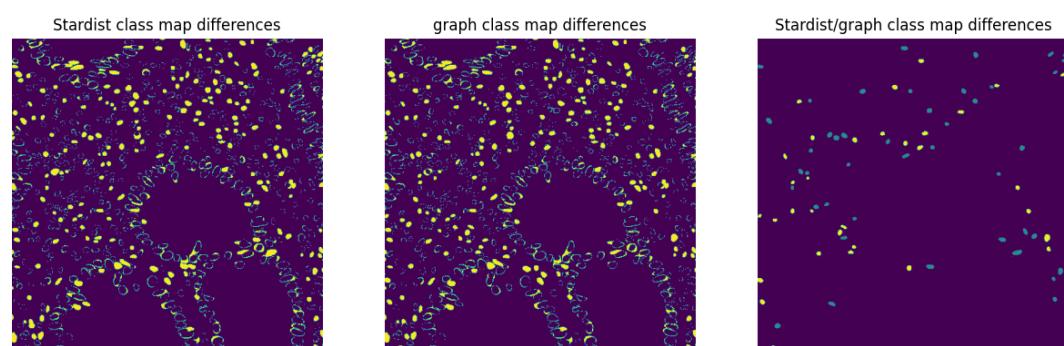
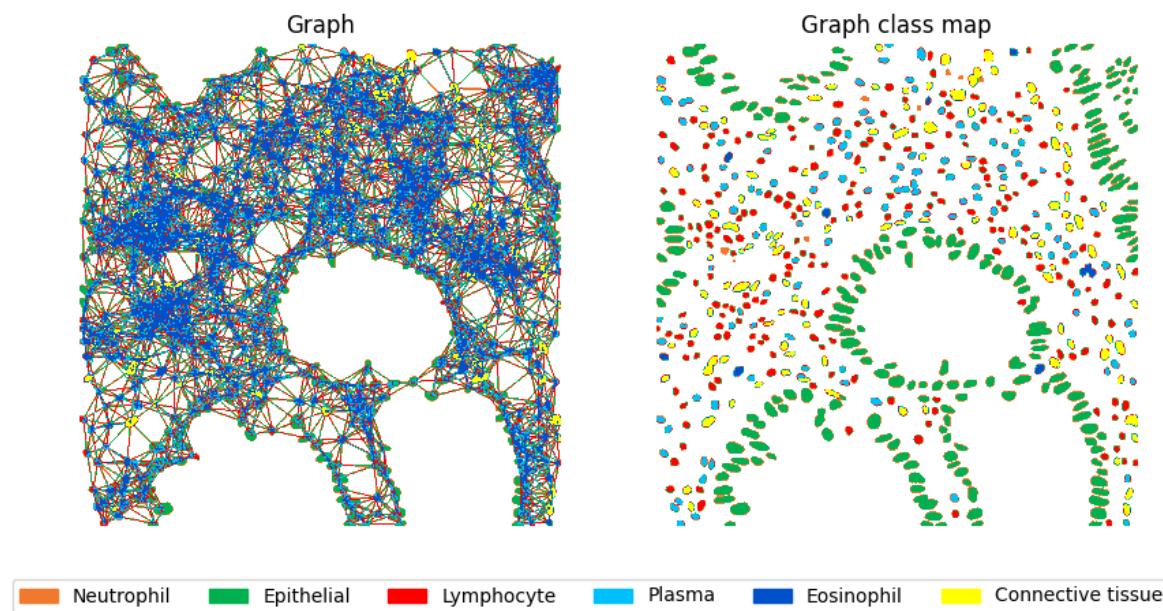
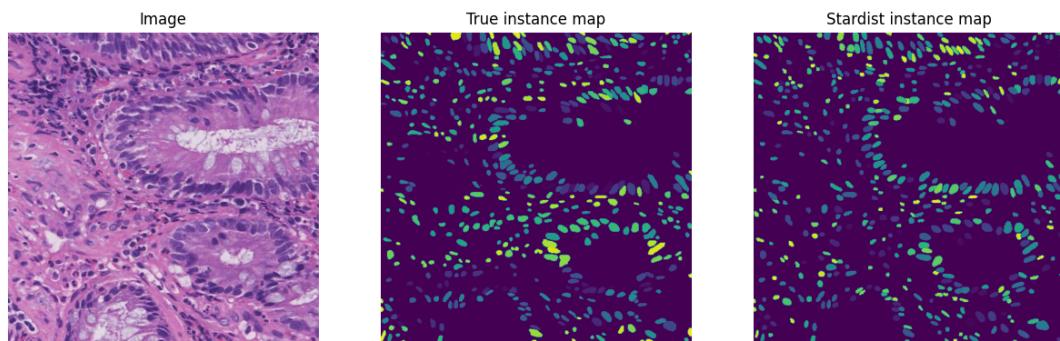


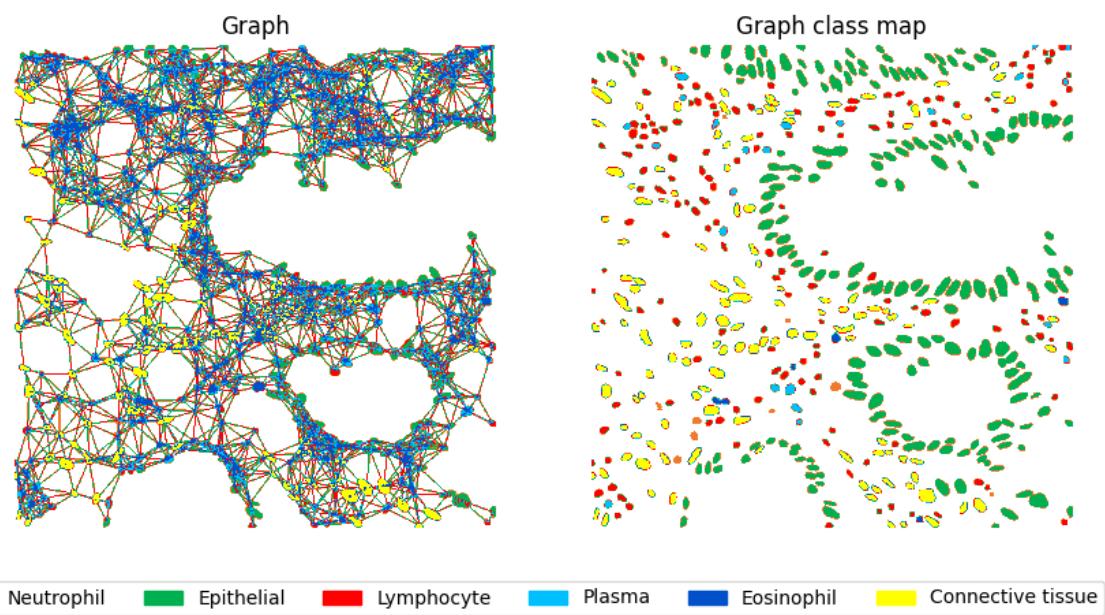
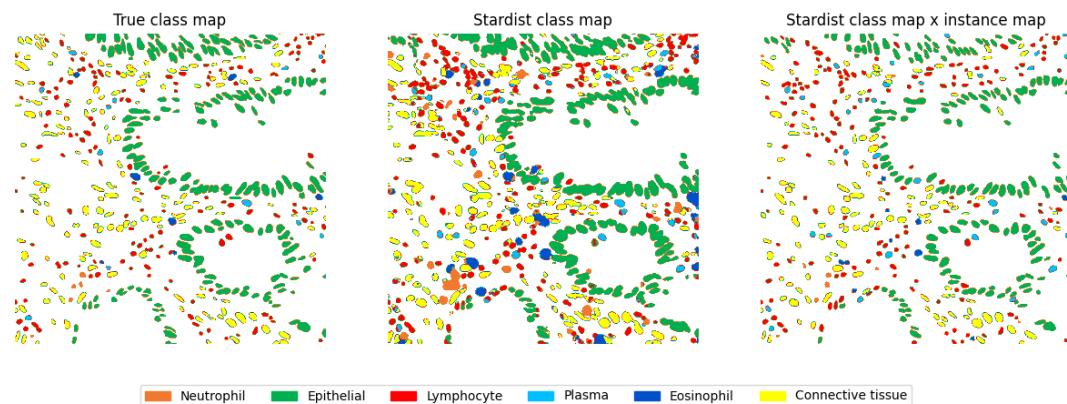
Image 13



Personal segmentation Metrics

Metric	Value
FP	65
TP	452

Metric	Value
FN	69
Precision	0.874274661508704
Recall	0.8675623800383877
Accuracy	0.7713310580204779
F1	0.8709055876685935
n_true	521
n_pred	517
mean_true_score	0.6987536644523752
mean_matched_score	0.8054218123444413
panoptic_quality	0.7014463568009393



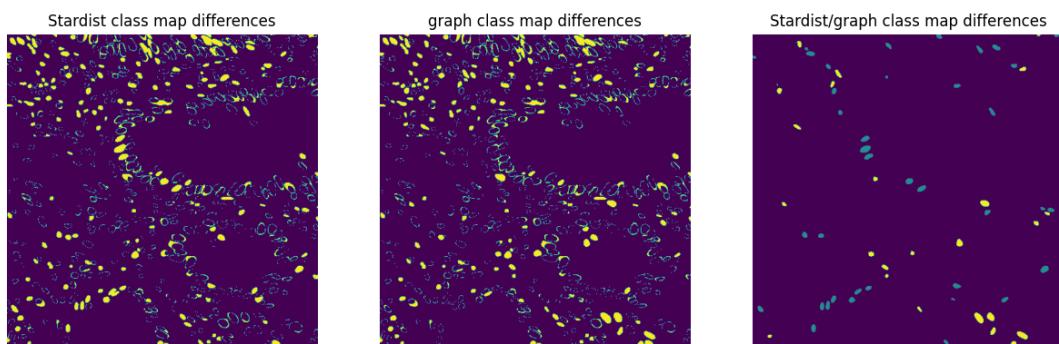
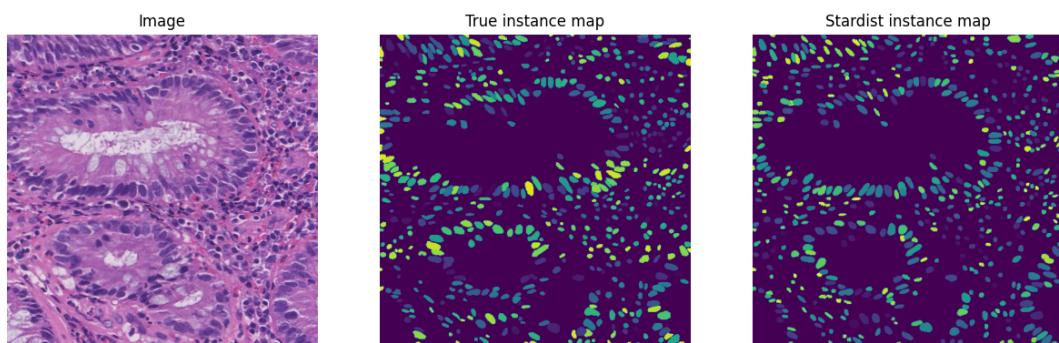


Image 14



Personal segmentation Metrics

Metric	Value
FP	61
TP	527
FN	80
Precision	0.8962585034013606
Recall	0.8682042833607908
Accuracy	0.7889221556886228
F1	0.8820083682008368
n_true	607
n_pred	588
mean_true_score	0.6982983458768791
mean_matched_score	0.8043018898430088
panoptic_quality	0.7094009974012814

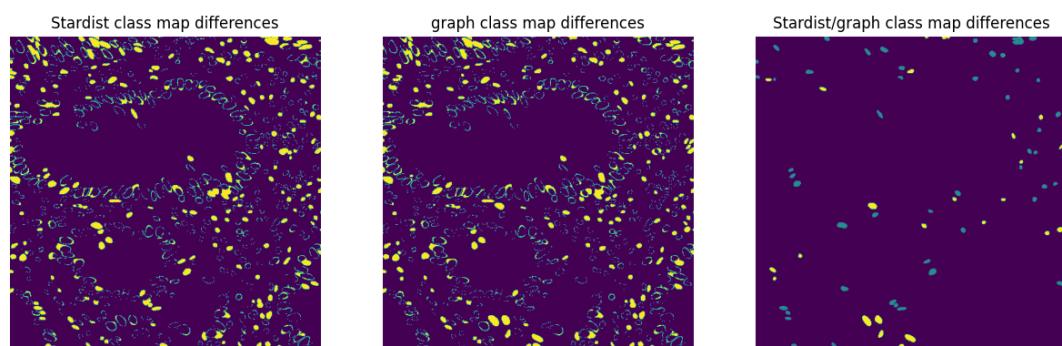
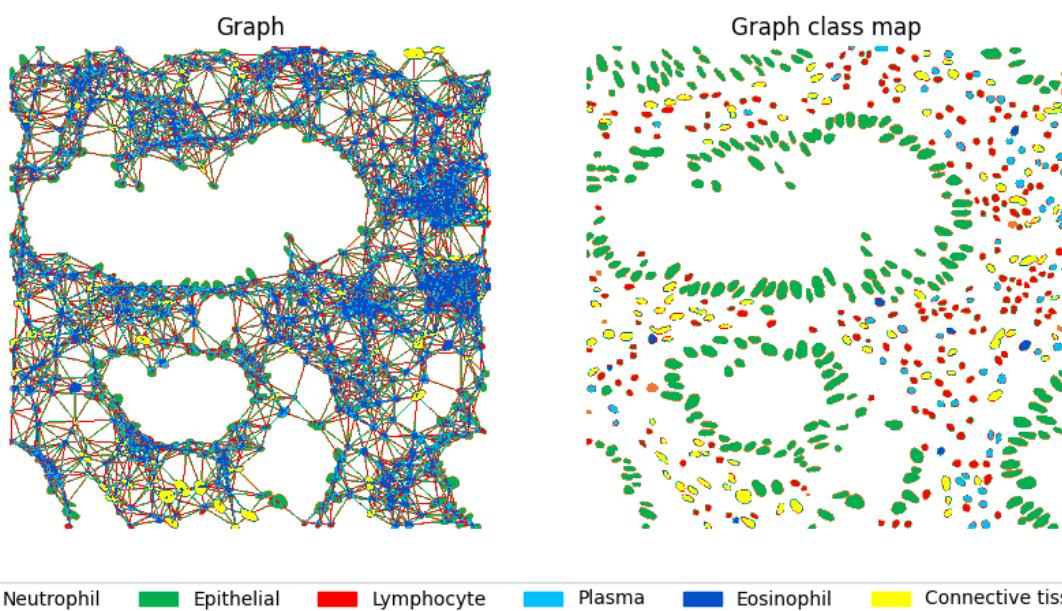
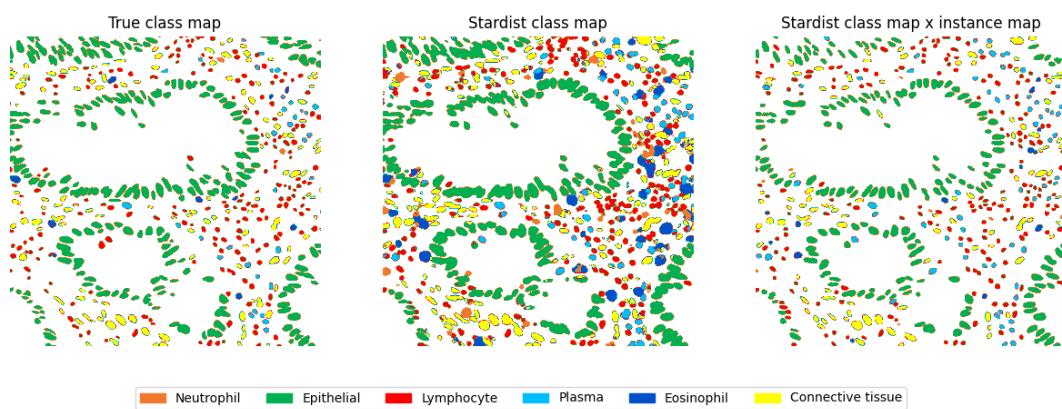
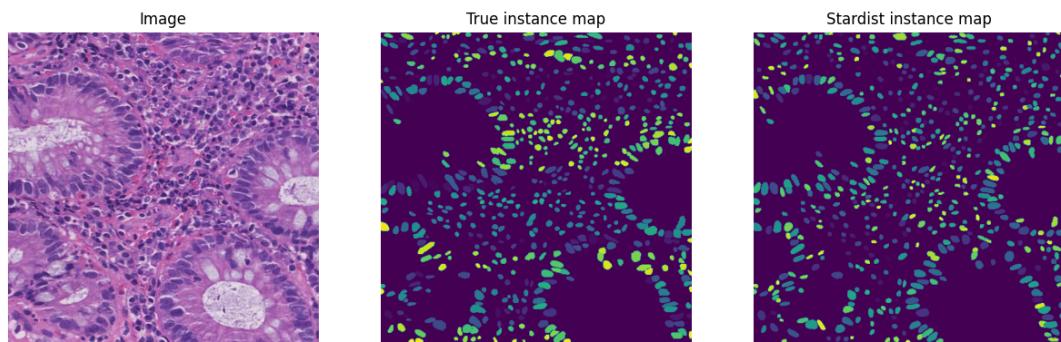
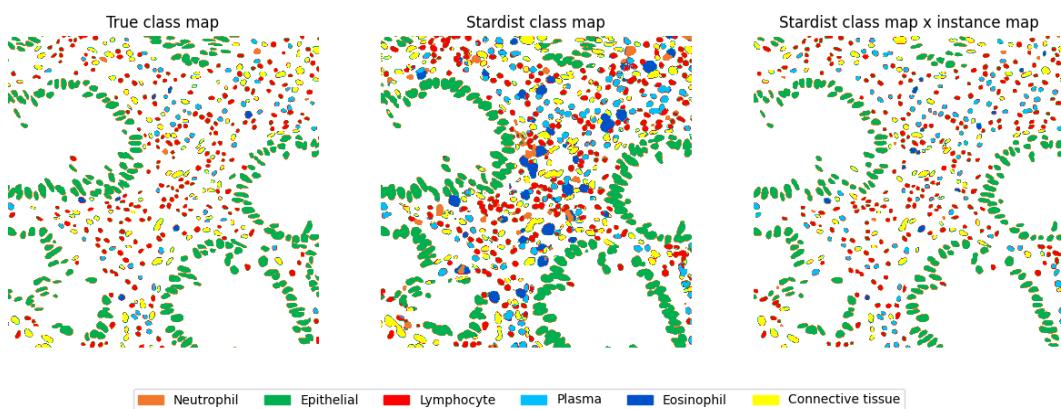


Image 15



Personal segmentation Metrics

Metric	Value
FP	60
TP	549
FN	68
Precision	0.9014778325123153
Recall	0.8897893030794165
Accuracy	0.810930576070901
F1	0.8955954323001631
n_true	617
n_pred	609
mean_true_score	0.7198640647158631
mean_matched_score	0.8090275554274818
panoptic_quality	0.7245613832458198



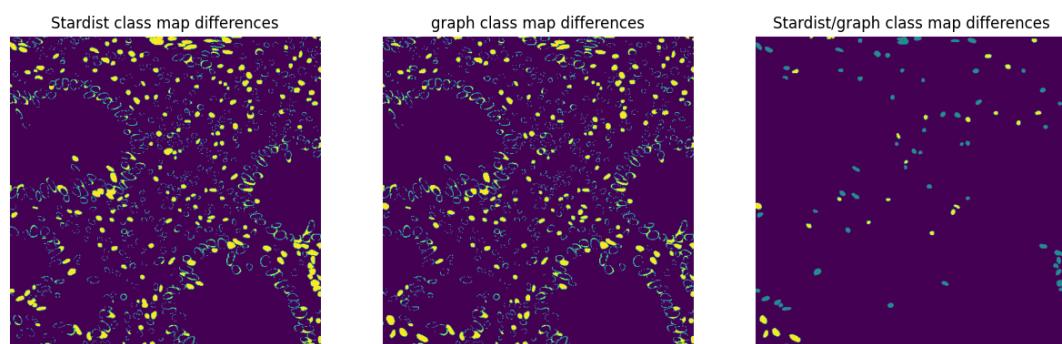
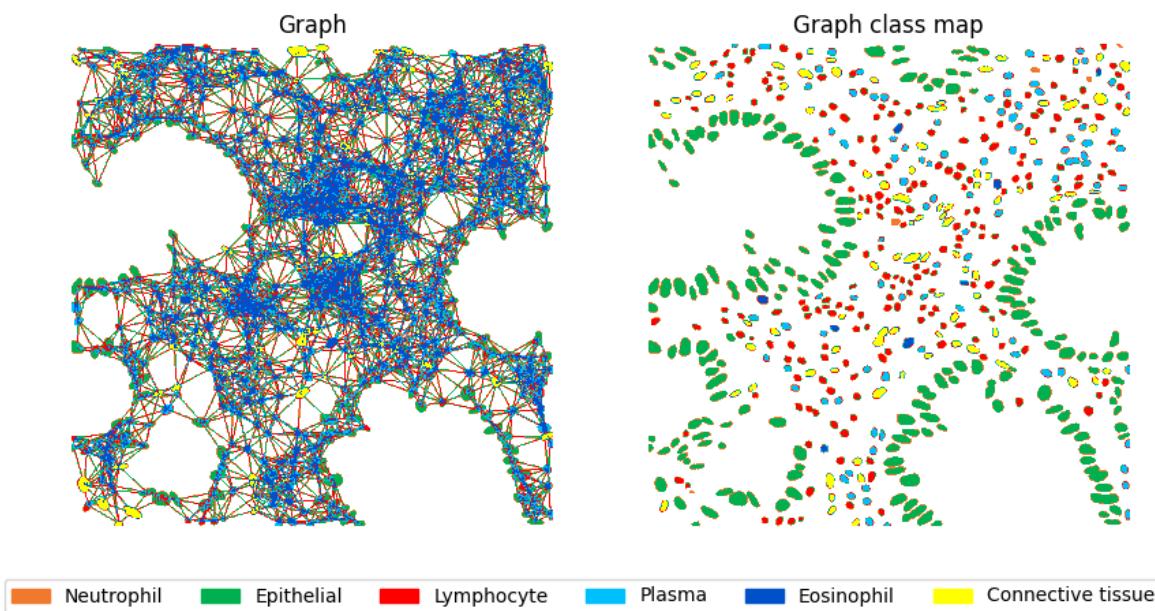
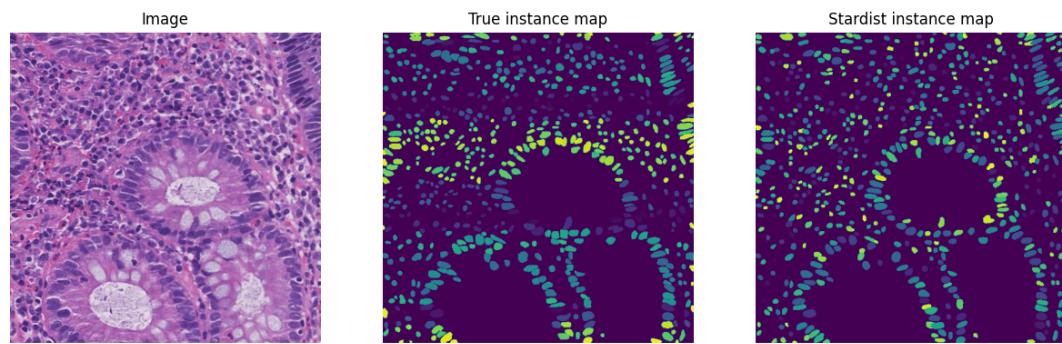


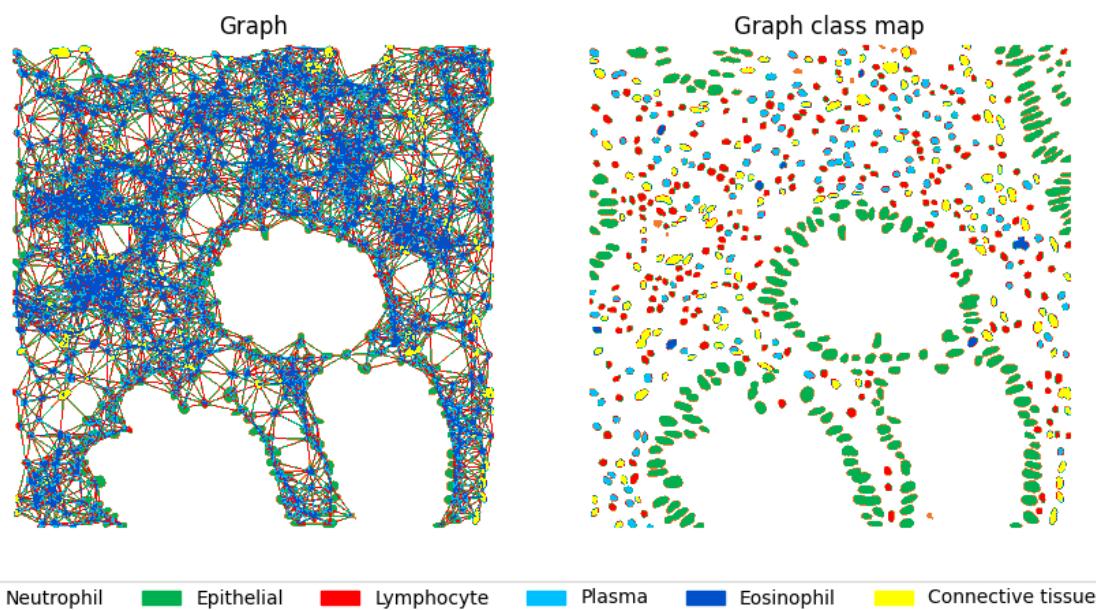
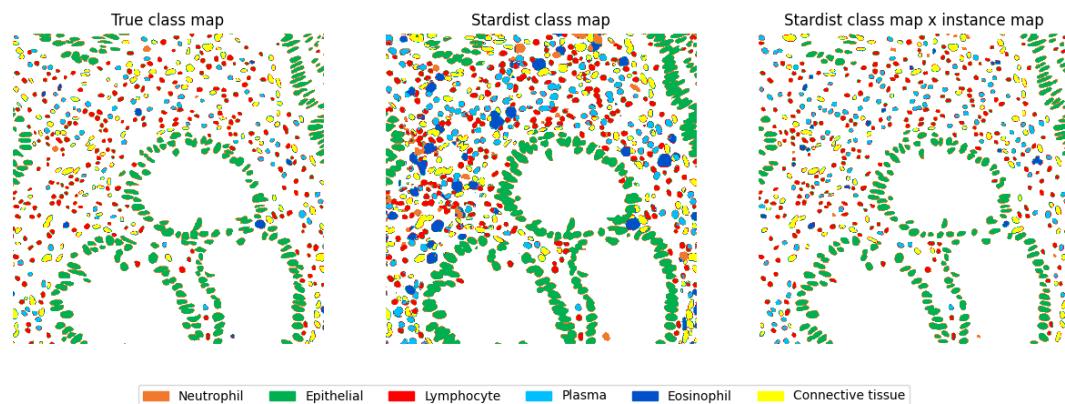
Image 16



Personal segmentation Metrics

Metric	Value
FP	83
TP	581

Metric	Value
FN	69
Precision	0.875
Recall	0.8938461538461538
Accuracy	0.7926330150068213
F1	0.8843226788432268
n_true	650
n_pred	664
mean_true_score	0.7307999830979567
mean_matched_score	0.8175903425364404
panoptic_quality	0.7230136819081764



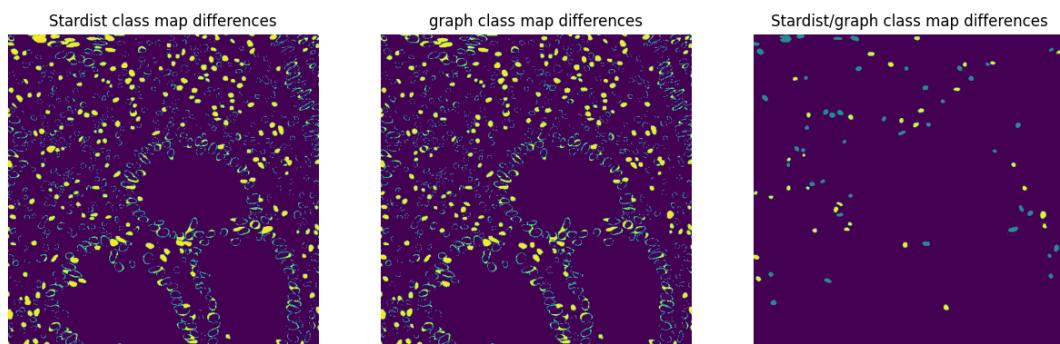
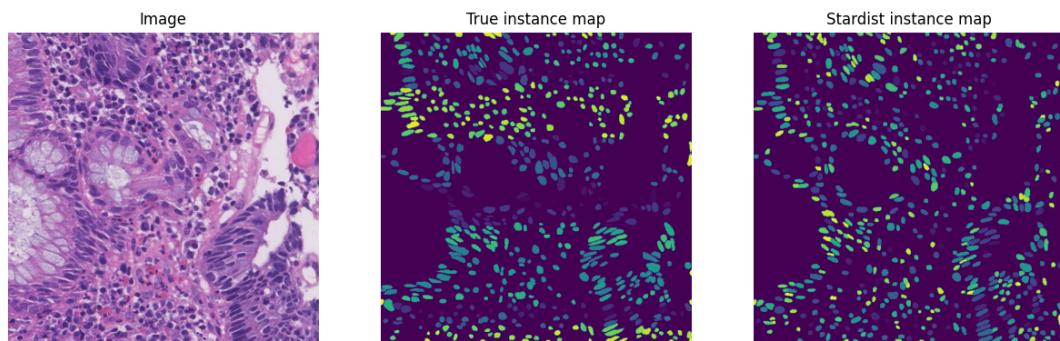


Image 17



Personal segmentation Metrics

Metric	Value
FP	96
TP	542
FN	73
Precision	0.8495297805642633
Recall	0.8813008130081301
Accuracy	0.7623066104078763
F1	0.86512370311253
n_true	615
n_pred	638
mean_true_score	0.7160209841844513
mean_matched_score	0.8124592348218405
panoptic_quality	0.7028777418570431

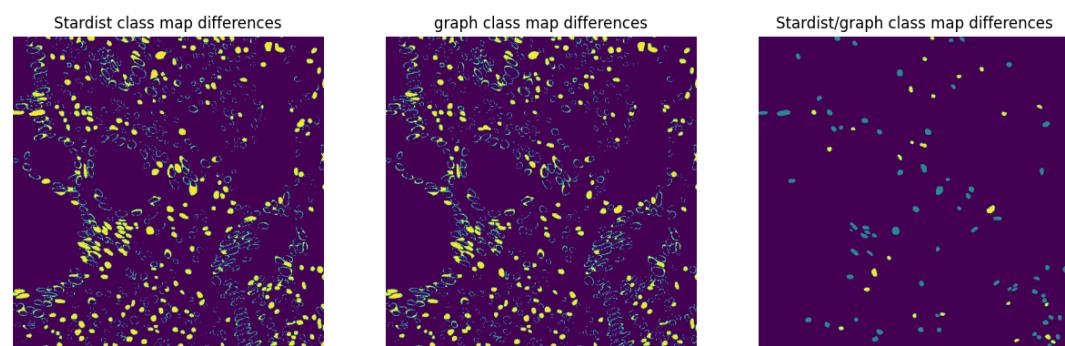
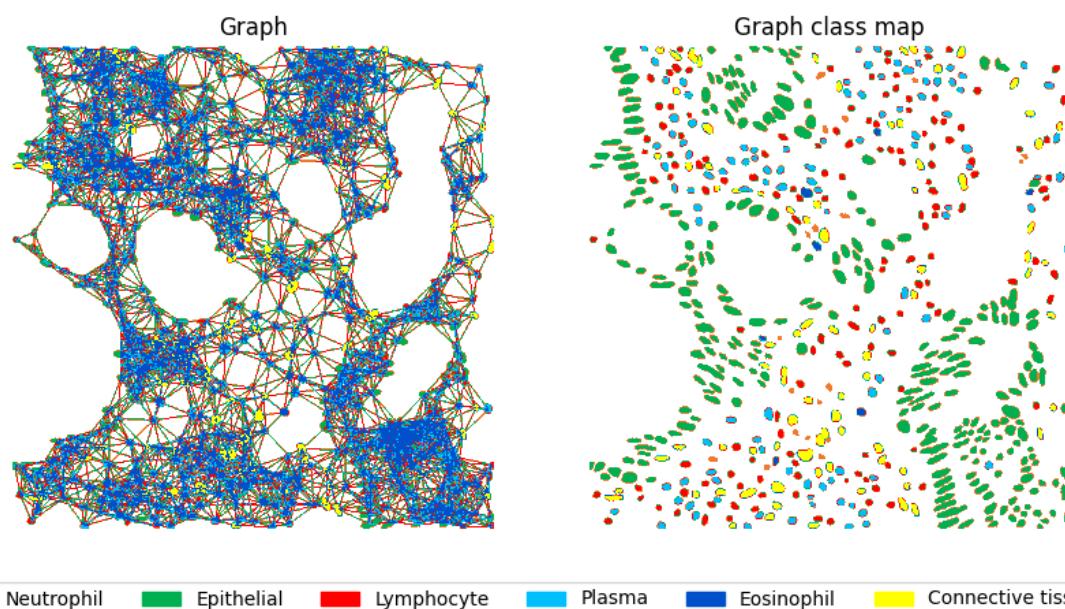
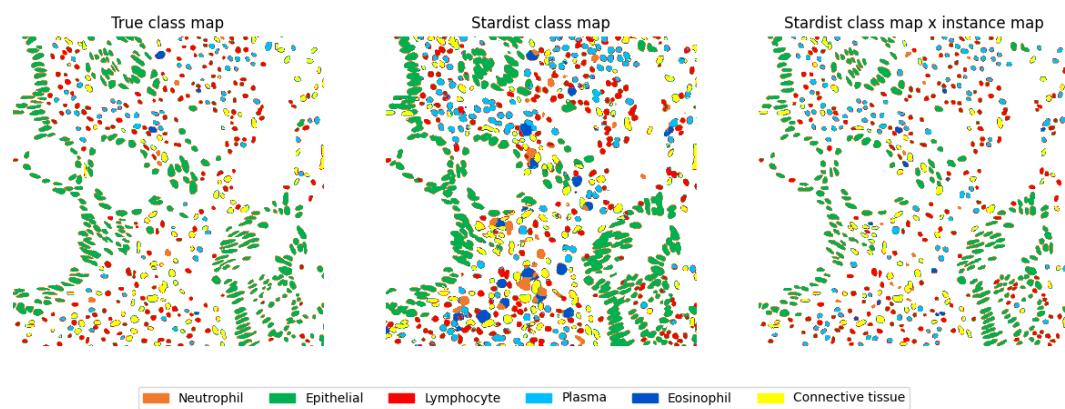
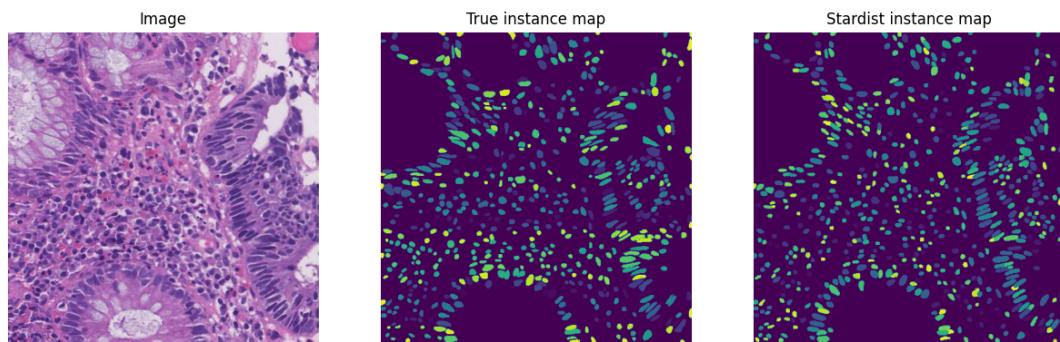
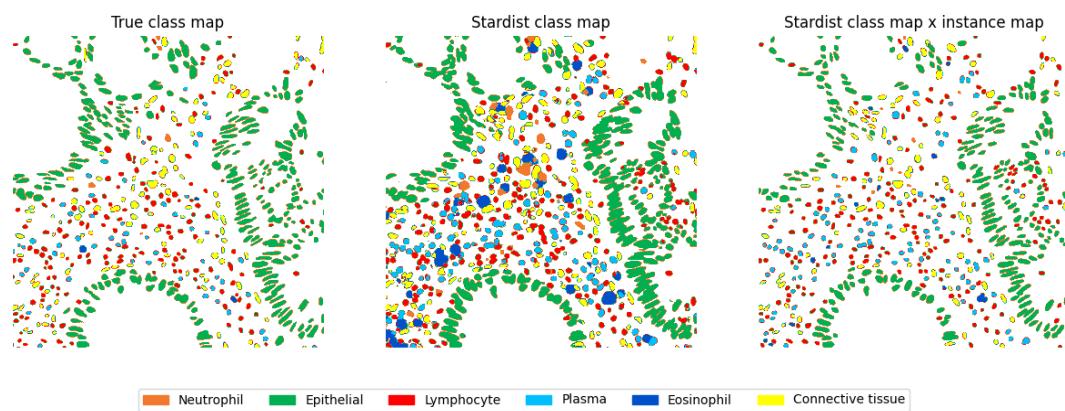


Image 18



Personal segmentation Metrics

Metric	Value
FP	103
TP	543
FN	69
Precision	0.8405572755417957
Recall	0.8872549019607843
Accuracy	0.7594405594405594
F1	0.863275039745628
n_true	612
n_pred	646
mean_true_score	0.7204940895629085
mean_matched_score	0.8120485871316758
panoptic_quality	0.7010212763314785



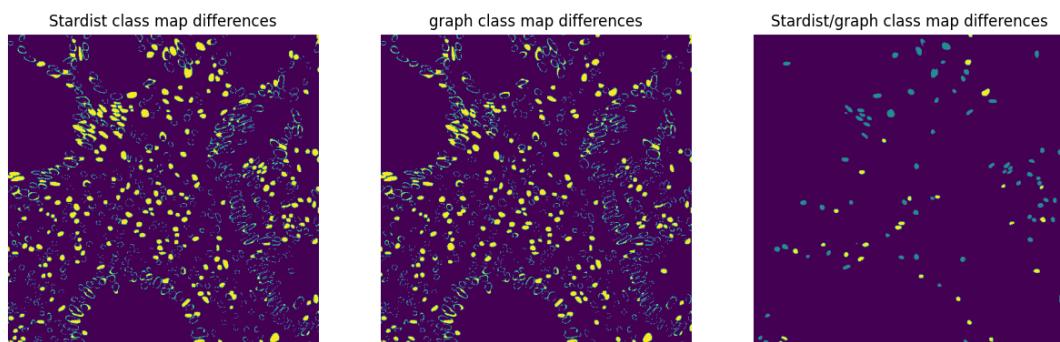
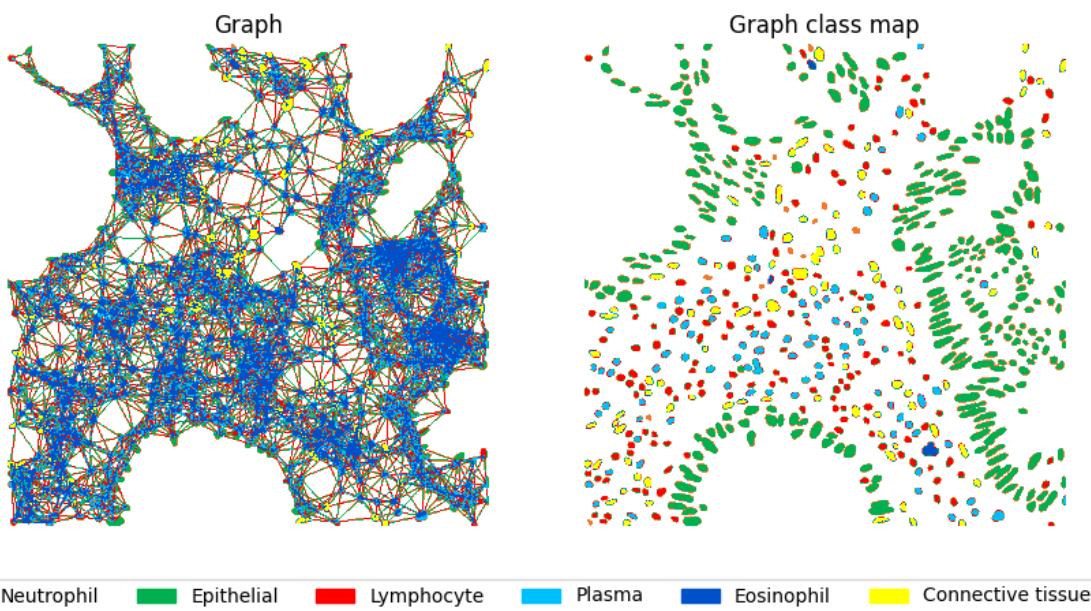
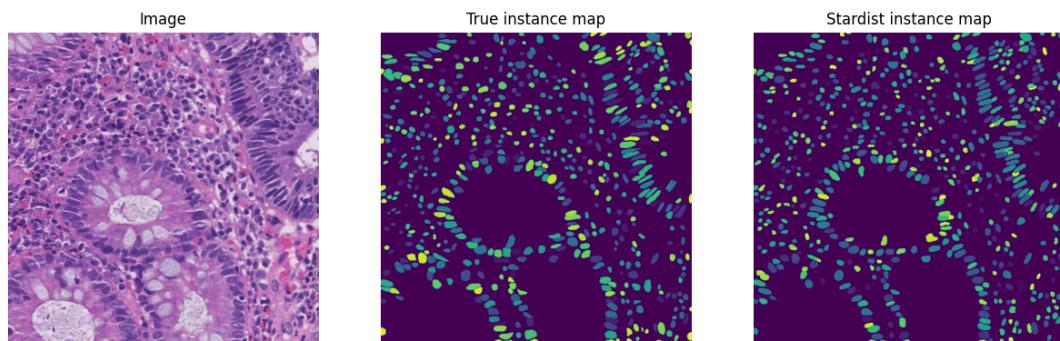


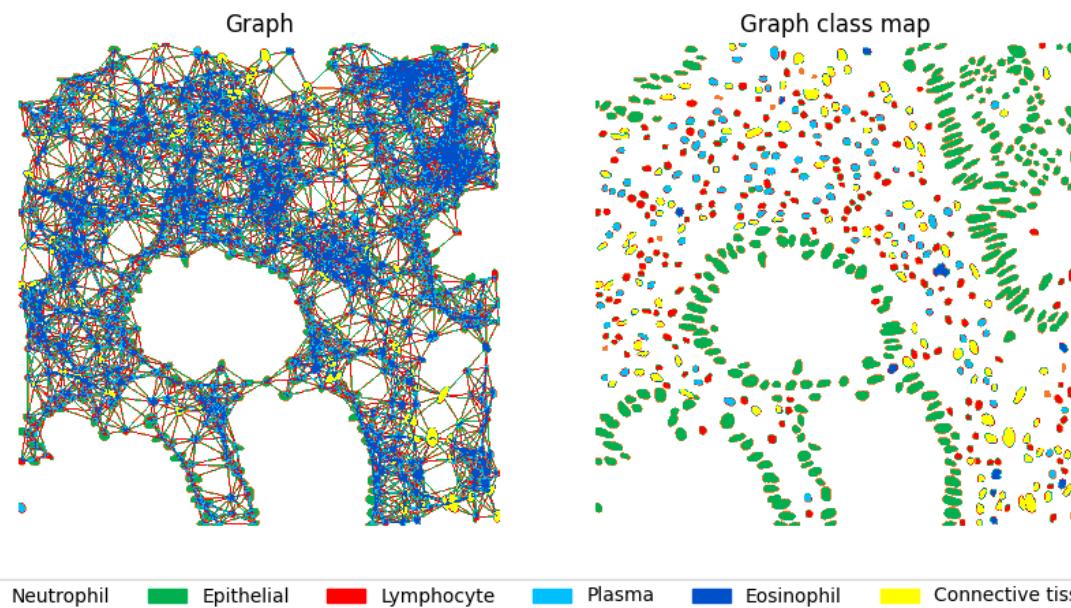
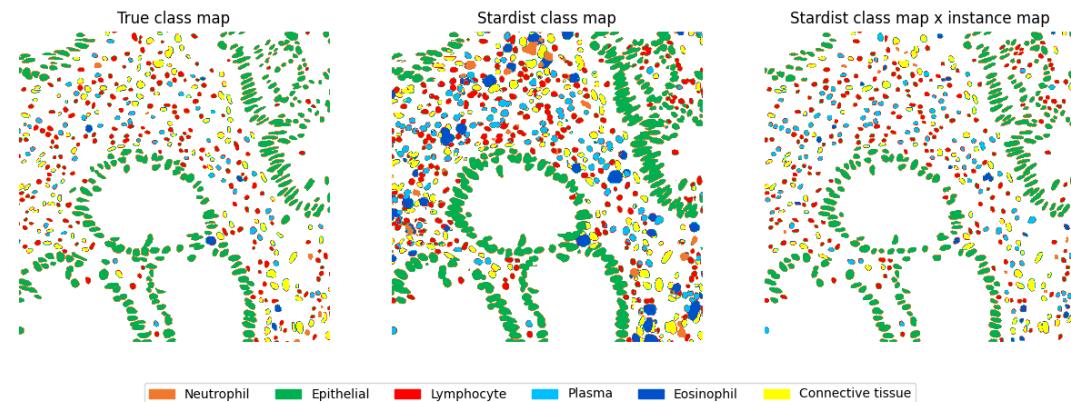
Image 19



Personal segmentation Metrics

Metric	Value
FP	91
TP	563

Metric	Value
FN	62
Precision	0.8608562691131498
Recall	0.9008
Accuracy	0.7863128491620112
F1	0.8803752931978108
n_true	625
n_pred	654
mean_true_score	0.73145380859375
mean_matched_score	0.8120046720623335
panoptic_quality	0.714868851244869



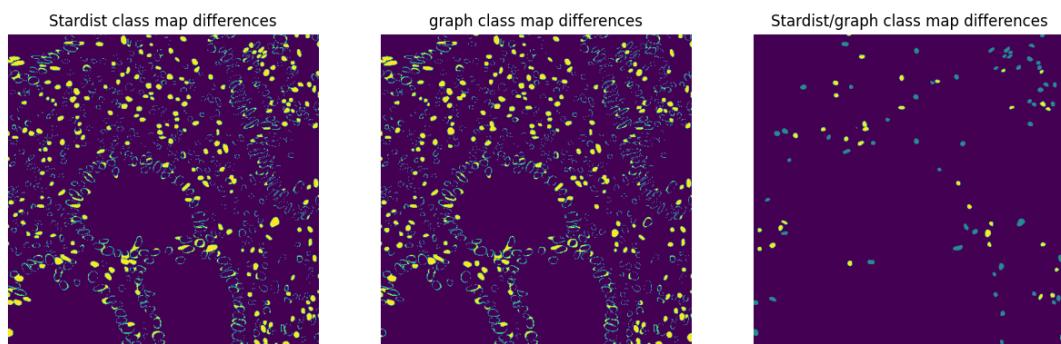
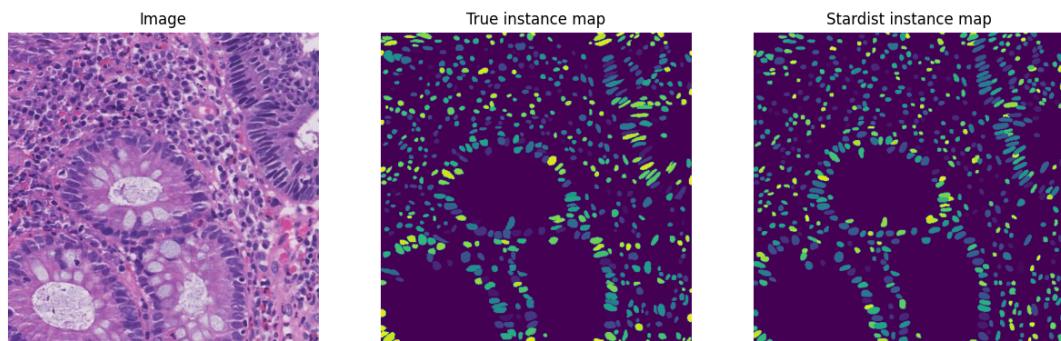


Image 20



Personal segmentation Metrics

Metric	Value
FP	92
TP	556
FN	61
Precision	0.8580246913580247
Recall	0.9011345218800648
Accuracy	0.7842031029619182
F1	0.8790513833992095
n_true	617
n_pred	648
mean_true_score	0.7320490362578504
mean_matched_score	0.8123637686530463
panoptic_quality	0.7141094946578558

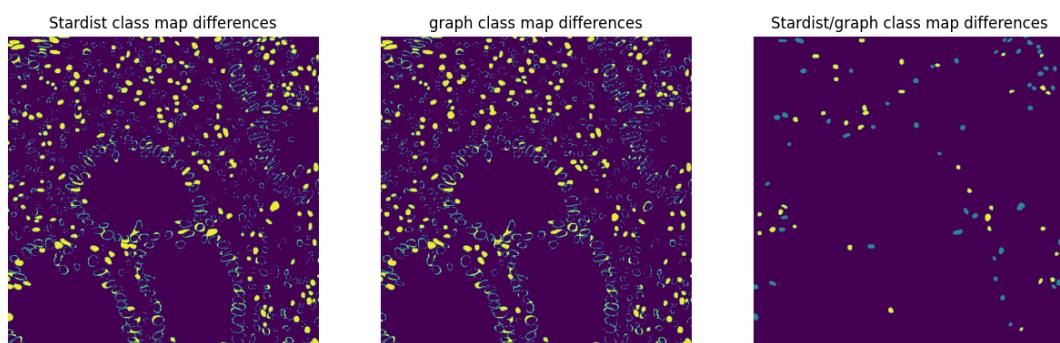
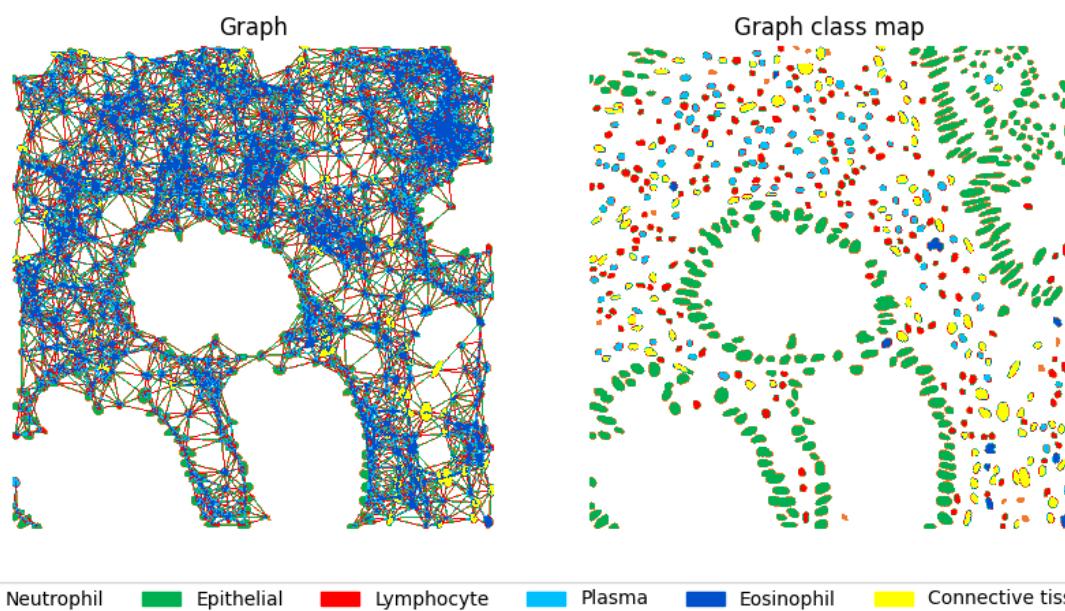
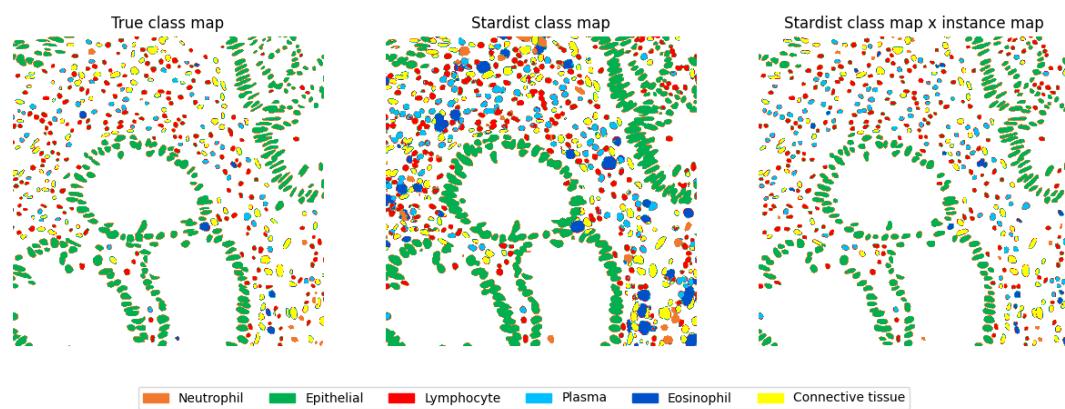
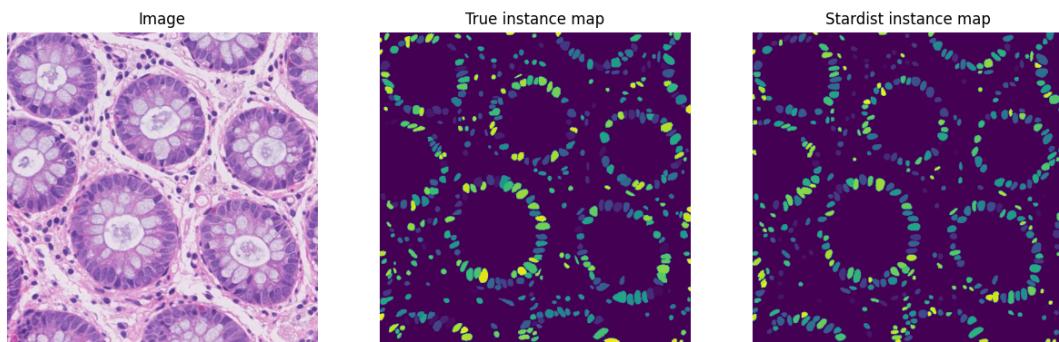
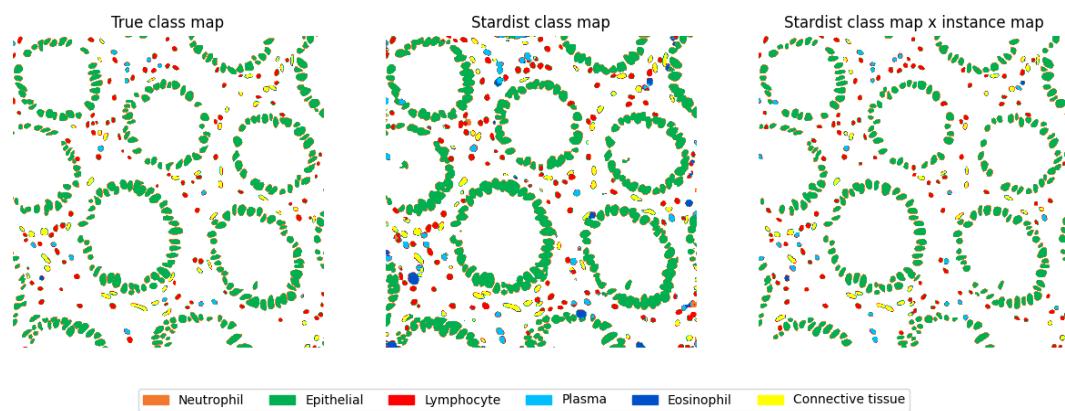


Image 21



Personal segmentation Metrics

Metric	Value
FP	38
TP	389
FN	46
Precision	0.9110070257611241
Recall	0.8942528735632184
Accuracy	0.8224101479915433
F1	0.9025522041763341
n_true	435
n_pred	427
mean_true_score	0.7133600344603089
mean_matched_score	0.7977162339080576
panoptic_quality	0.7199805452209614



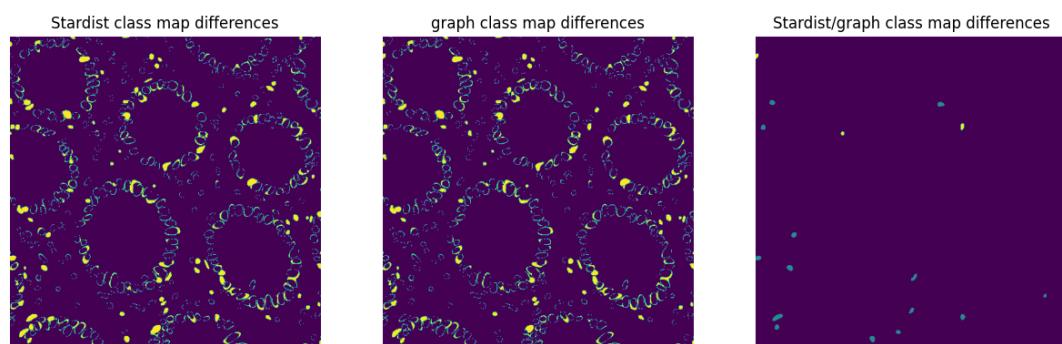
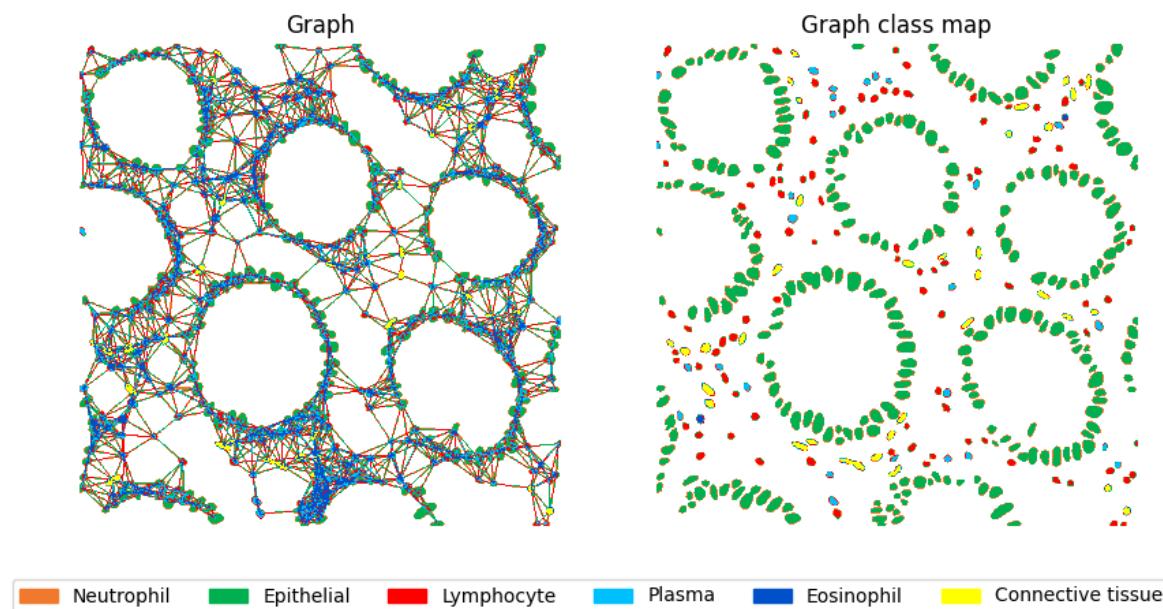
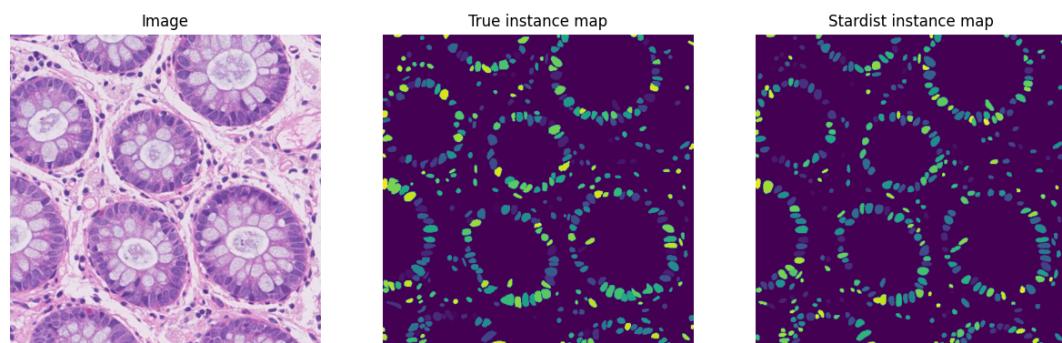


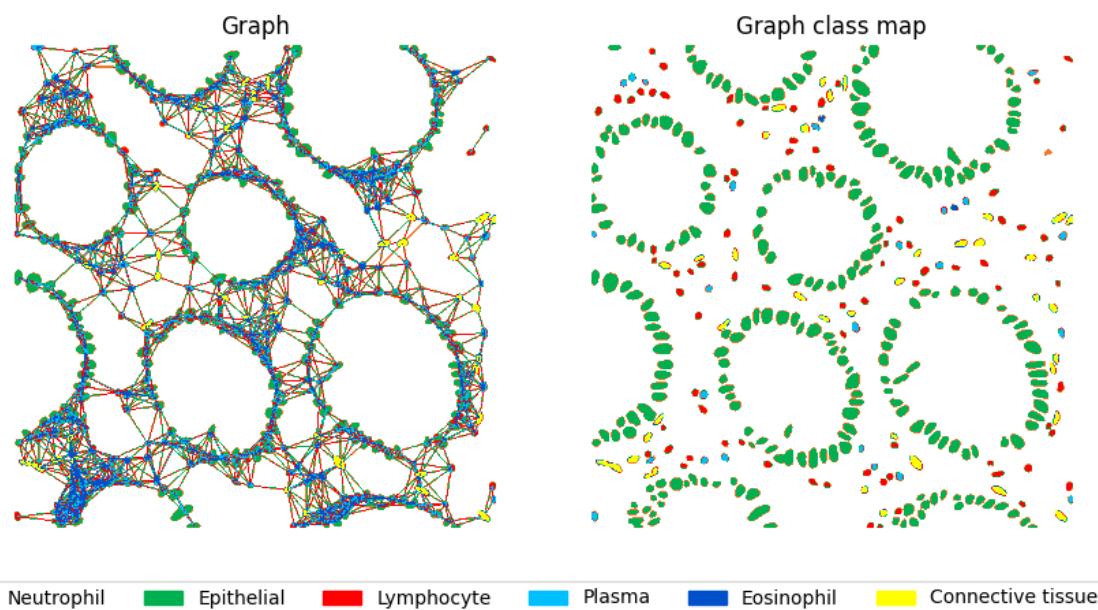
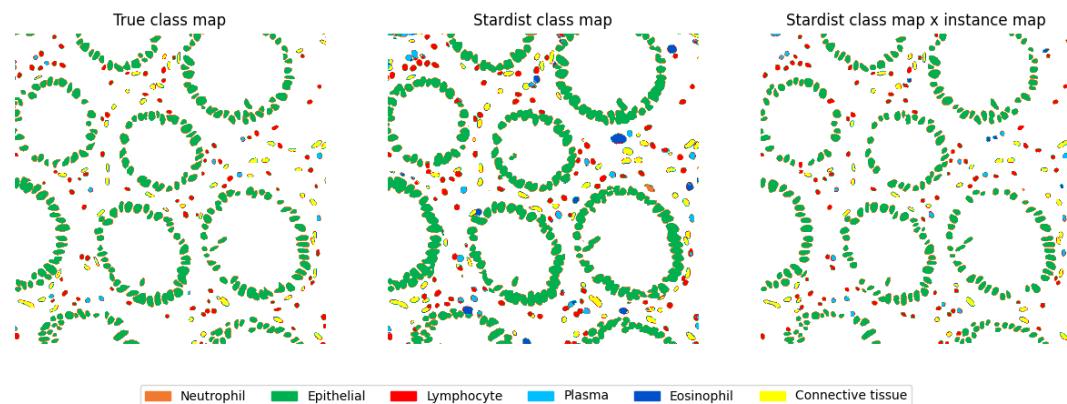
Image 22



Personal segmentation Metrics

Metric	Value
FP	30
TP	359

Metric	Value
FN	42
Precision	0.922879177377892
Recall	0.8952618453865336
Accuracy	0.8329466357308585
F1	0.9088607594936708
n_true	401
n_pred	389
mean_true_score	0.7093103270875546
mean_matched_score	0.7922937079724495
panoptic_quality	0.7200846611698971



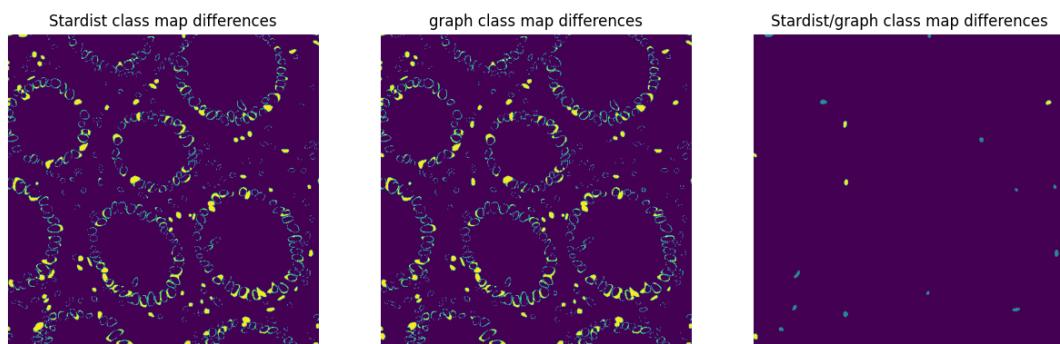
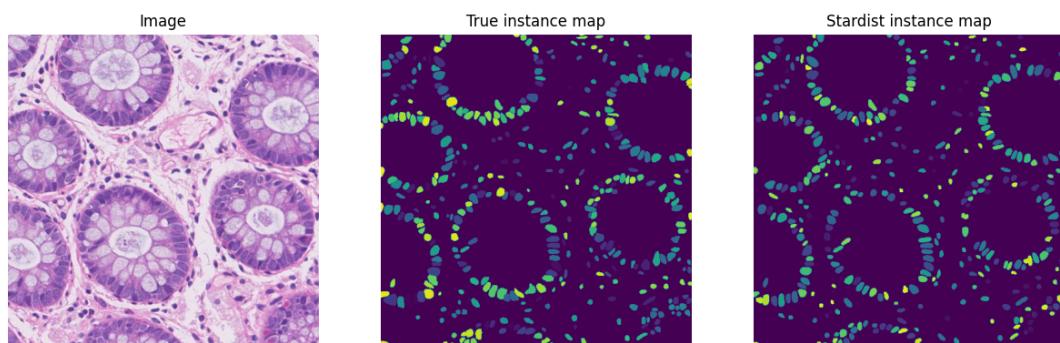


Image 23



Personal segmentation Metrics

Metric	Value
FP	25
TP	353
FN	44
Precision	0.9338624338624338
Recall	0.889168765743073
Accuracy	0.8364928909952607
F1	0.9109677419354839
n_true	397
n_pred	378
mean_true_score	0.7010153667152078
mean_matched_score	0.7883940526513811
panoptic_quality	0.7182015498991936

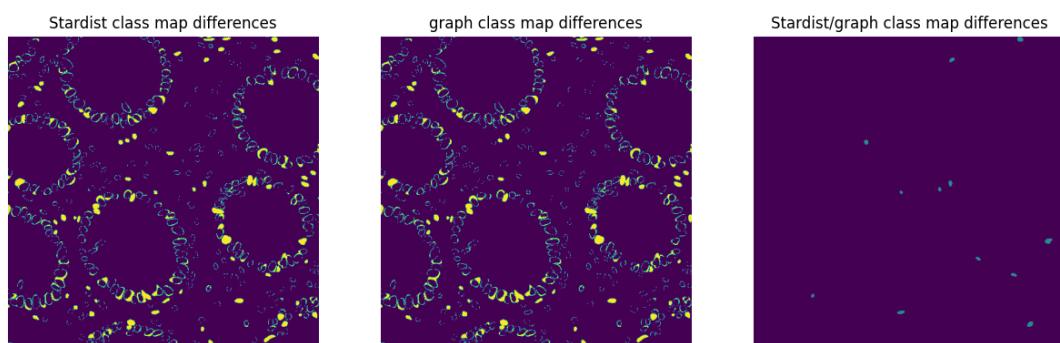
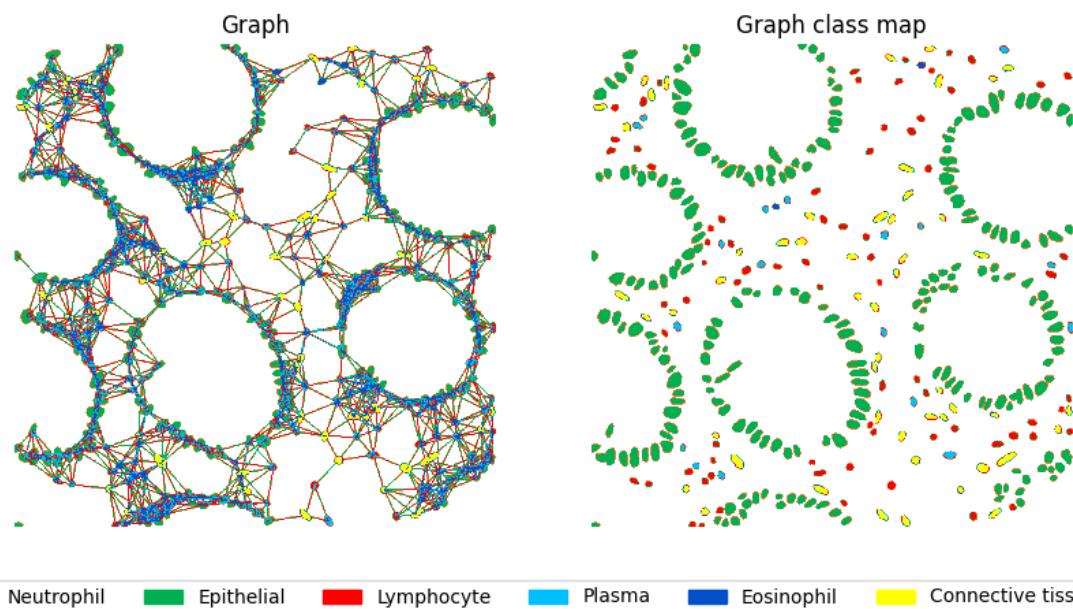
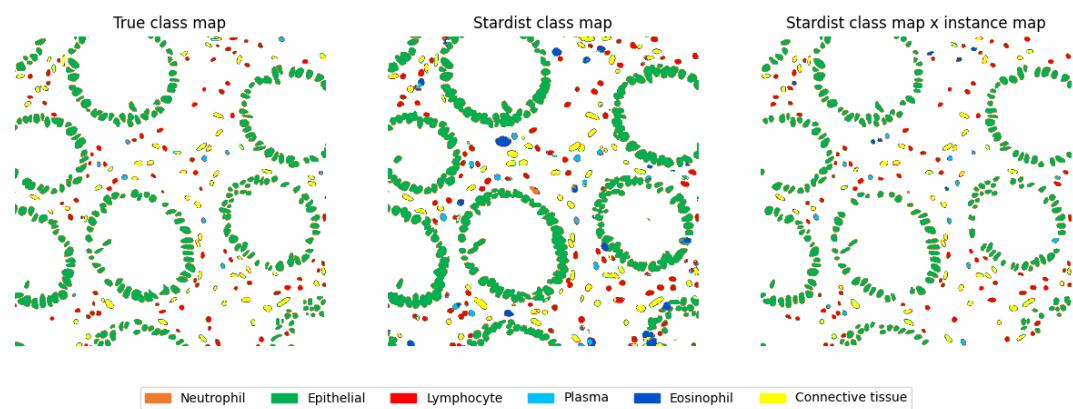
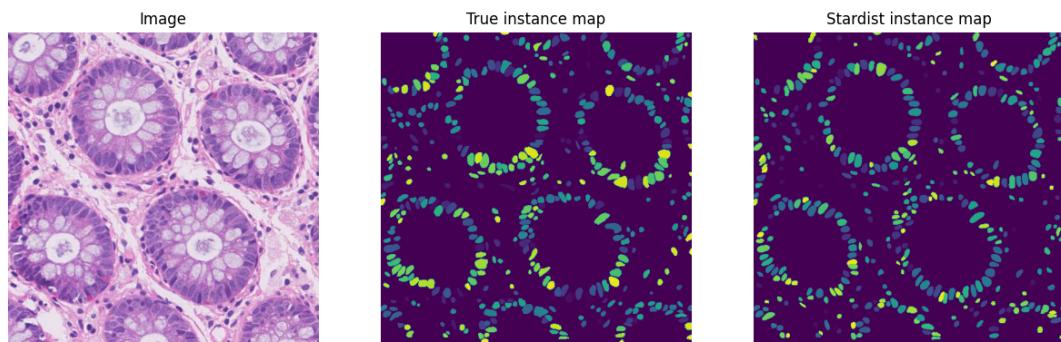
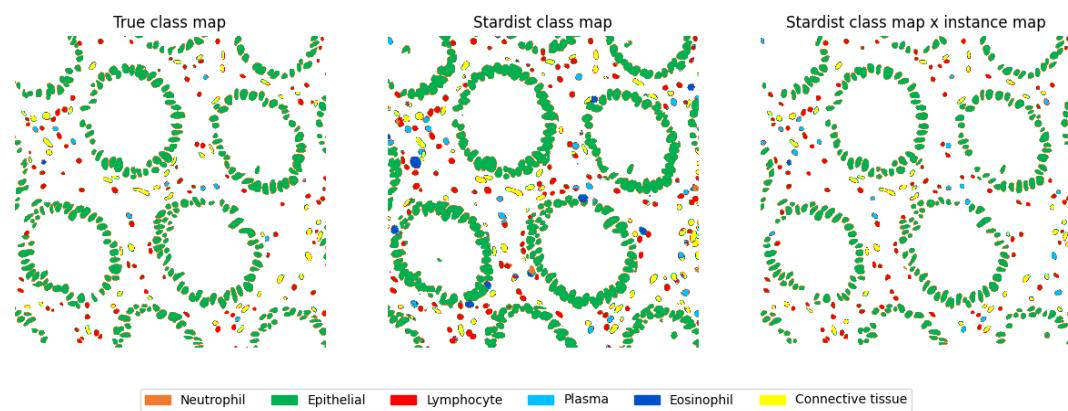


Image 24



Personal segmentation Metrics

Metric	Value
FP	44
TP	388
FN	50
Precision	0.8981481481481481
Recall	0.8858447488584474
Accuracy	0.8049792531120332
F1	0.8919540229885058
n_true	438
n_pred	432
mean_true_score	0.6970701174104594
mean_matched_score	0.786898740788096
panoptic_quality	0.7018774975305316



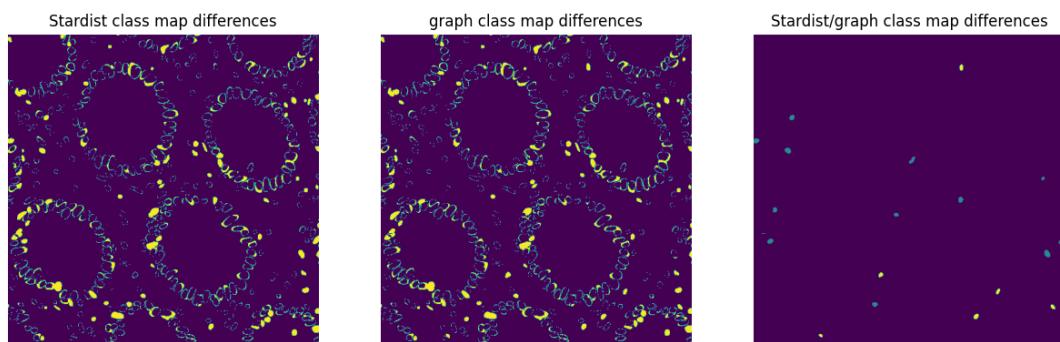
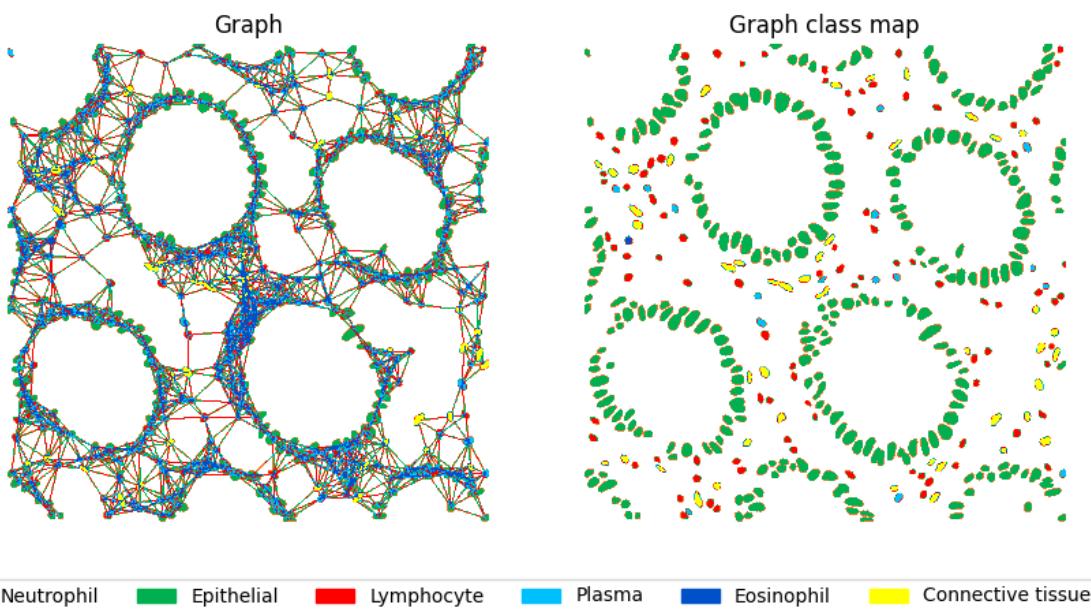
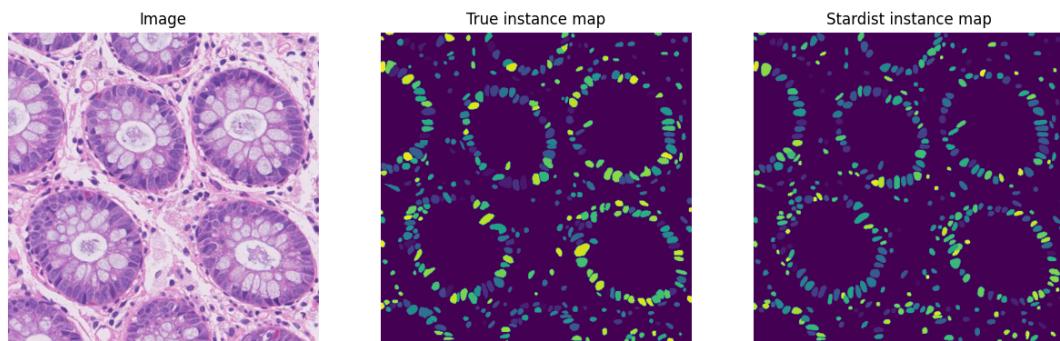


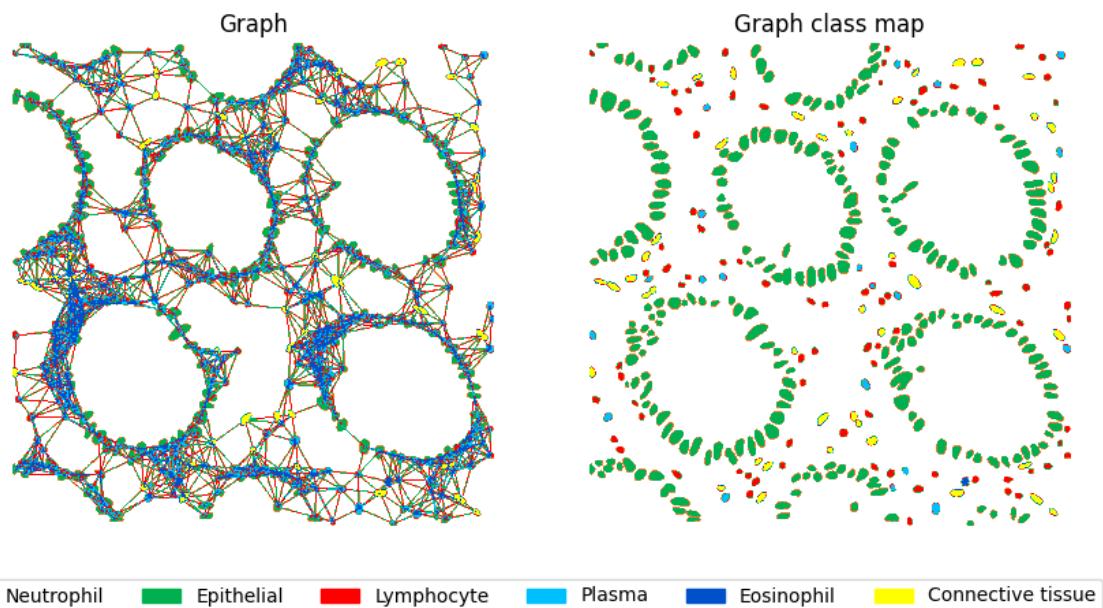
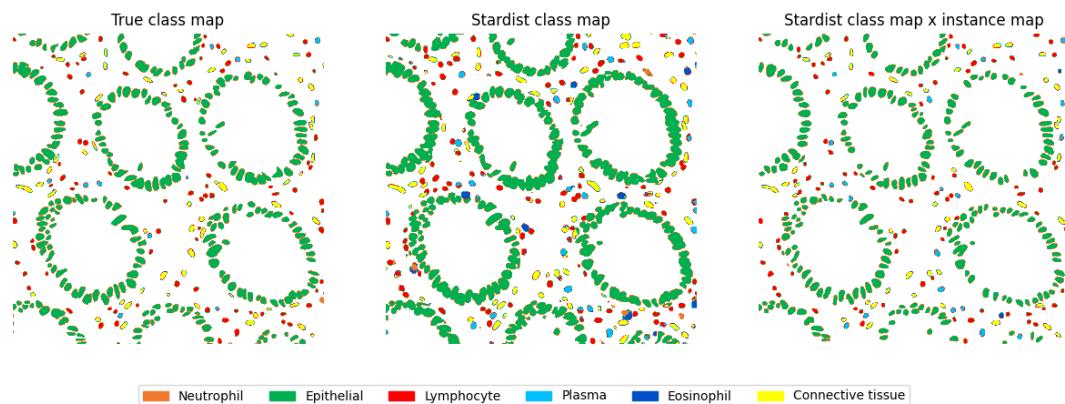
Image 25



Personal segmentation Metrics

Metric	Value
FP	44
TP	366

Metric	Value
FN	55
Precision	0.8926829268292683
Recall	0.8693586698337292
Accuracy	0.7870967741935484
F1	0.8808664259927798
n_true	421
n_pred	410
mean_true_score	0.6835079238420427
mean_matched_score	0.7862208632172131
panoptic_quality	0.6925555618231047



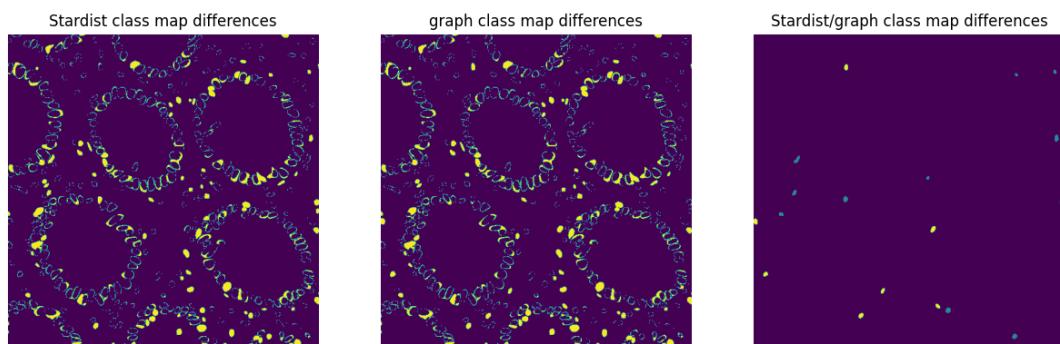
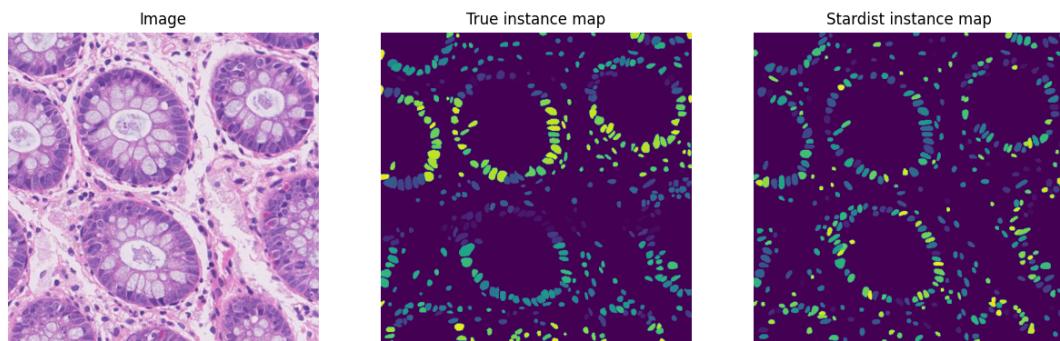


Image 26



Personal segmentation Metrics

Metric	Value
FP	43
TP	379
FN	57
Precision	0.8981042654028436
Recall	0.8692660550458715
Accuracy	0.791231732776618
F1	0.8834498834498834
n_true	436
n_pred	422
mean_true_score	0.6802926719735521
mean_matched_score	0.7826058178904188
panoptic_quality	0.6913930186024912

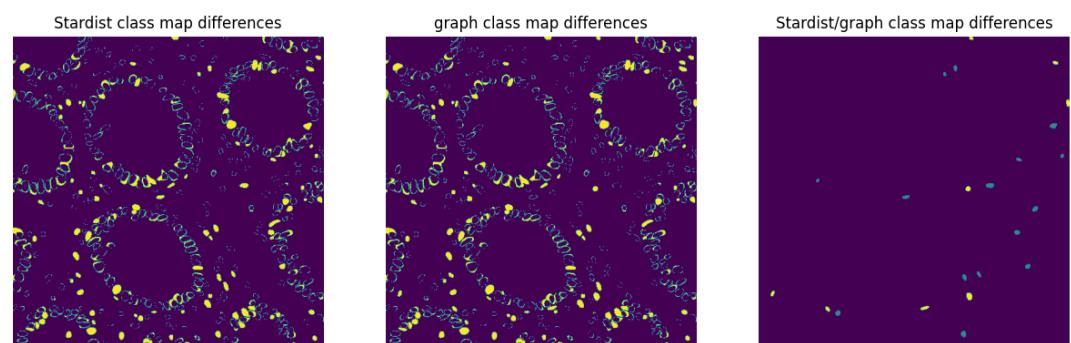
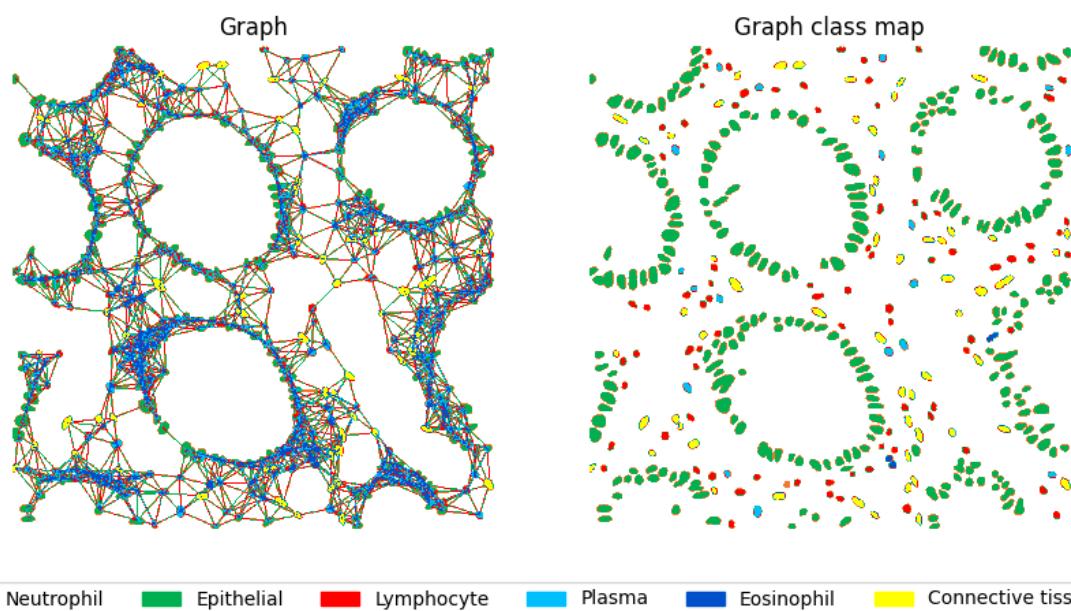
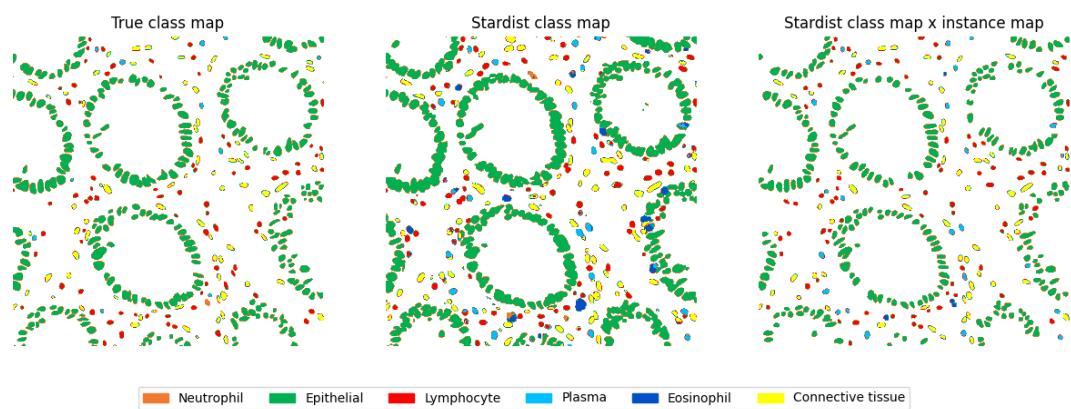
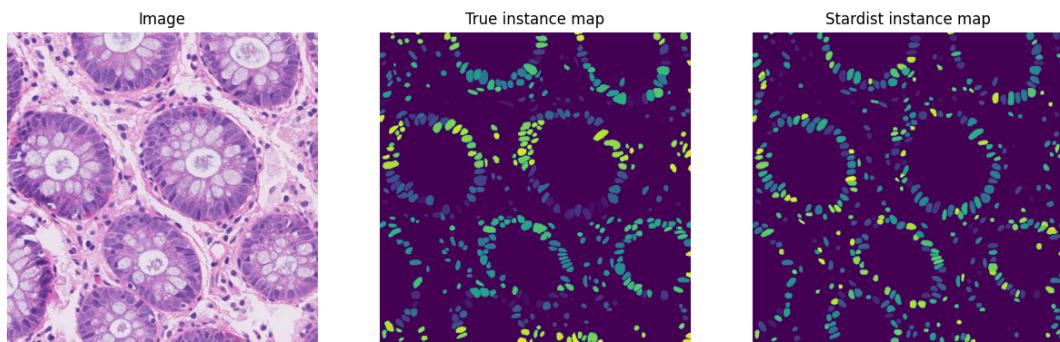
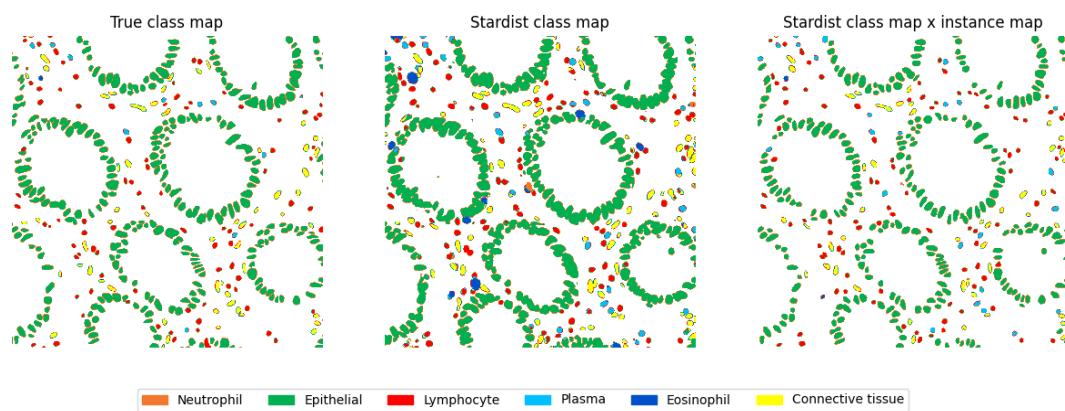


Image 27



Personal segmentation Metrics

Metric	Value
FP	51
TP	384
FN	56
Precision	0.8827586206896552
Recall	0.8727272727272727
Accuracy	0.7820773930753564
F1	0.8777142857142857
n_true	440
n_pred	435
mean_true_score	0.6891946965997869
mean_matched_score	0.7897022565205892
panoptic_quality	0.6931329520089285



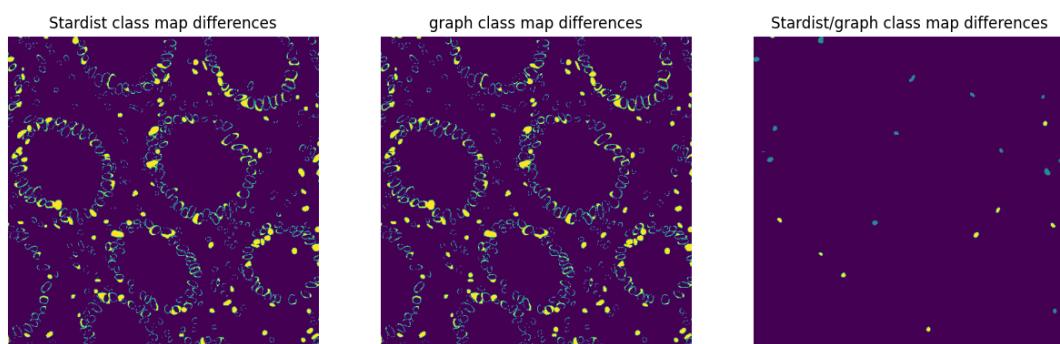
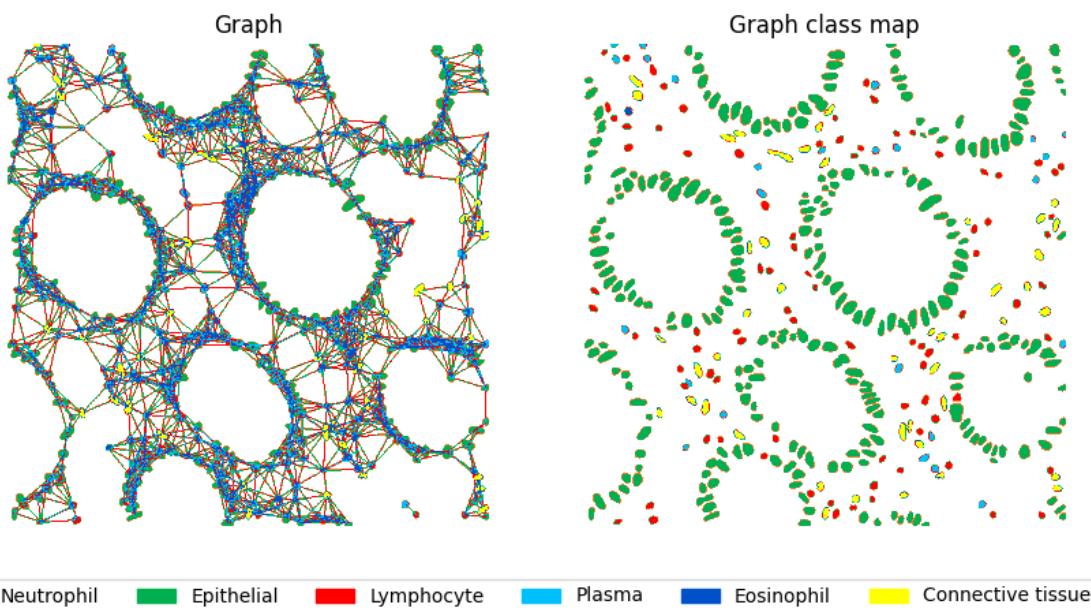
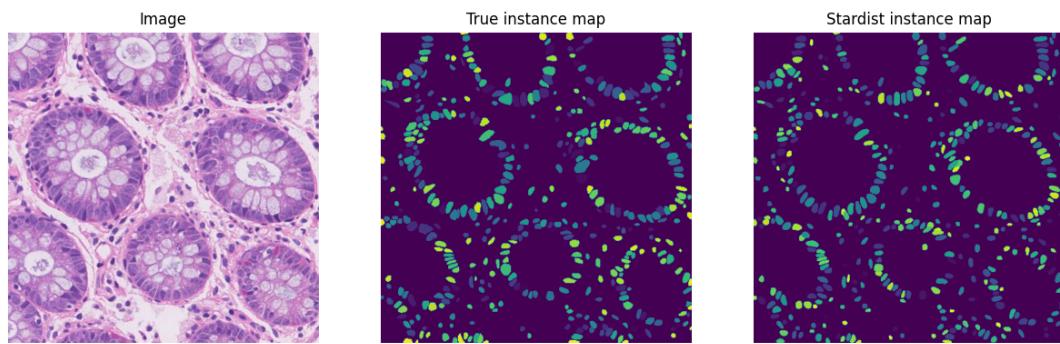


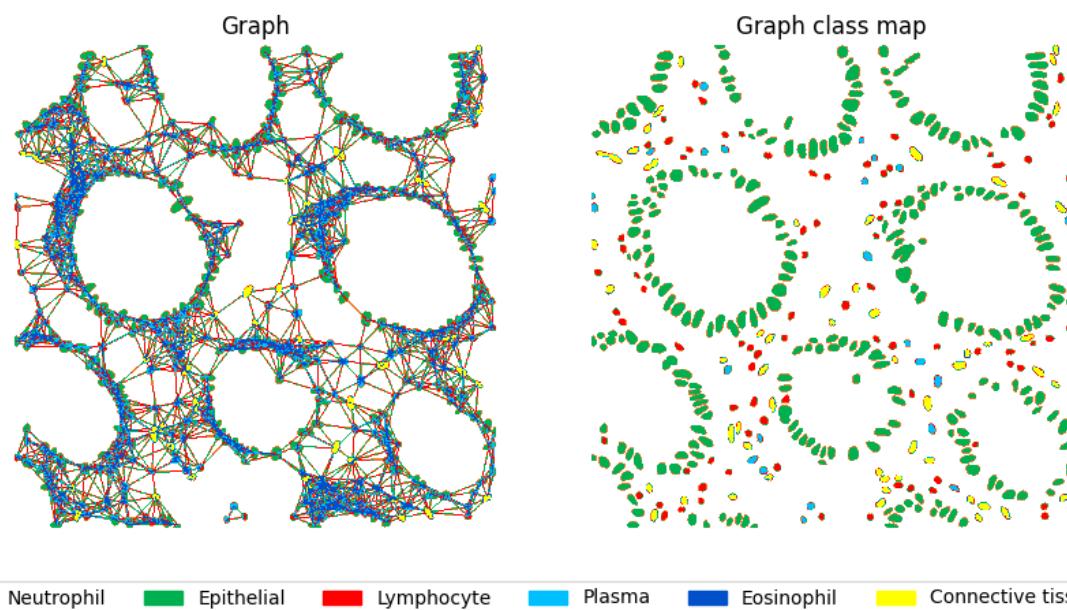
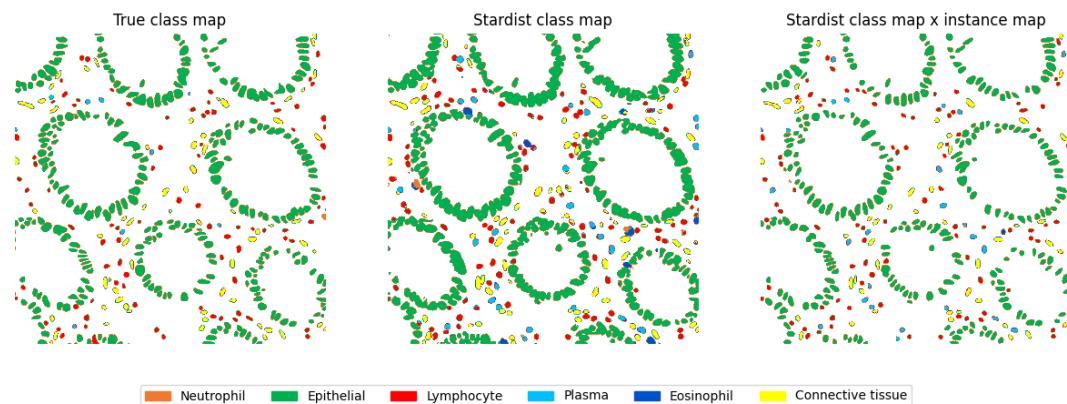
Image 28



Personal segmentation Metrics

Metric	Value
FP	43
TP	394

Metric	Value
FN	50
Precision	0.9016018306636155
Recall	0.8873873873873874
Accuracy	0.8090349075975359
F1	0.8944381384790011
n_true	444
n_pred	437
mean_true_score	0.6977656596415752
mean_matched_score	0.7863146012204553
panoptic_quality	0.7033097681744821



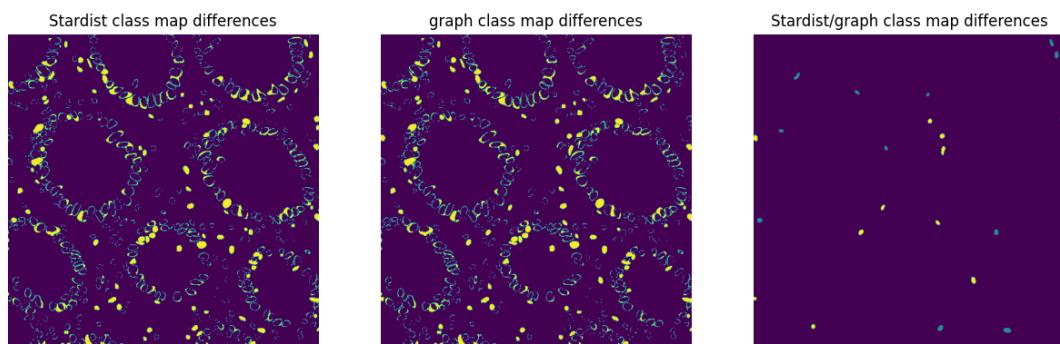
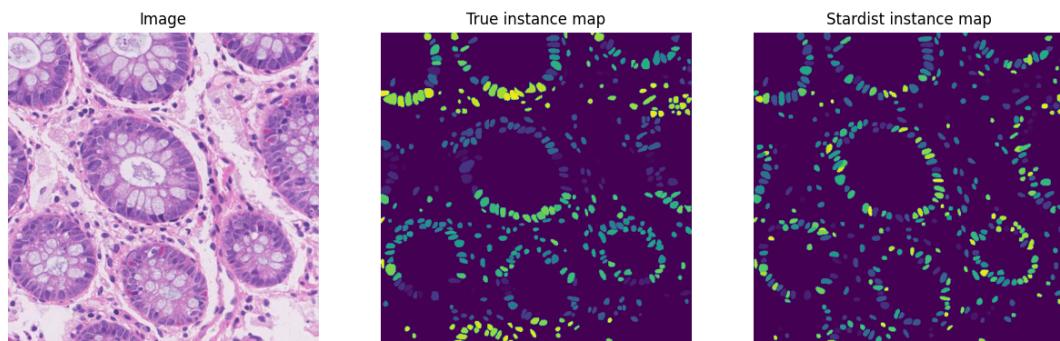


Image 29



Personal segmentation Metrics

Metric	Value
FP	45
TP	386
FN	43
Precision	0.8955916473317865
Recall	0.8997668997668997
Accuracy	0.8143459915611815
F1	0.8976744186046511
n_true	429
n_pred	431
mean_true_score	0.7106071418815559
mean_matched_score	0.7897680411067034
panoptic_quality	0.7089545671329942

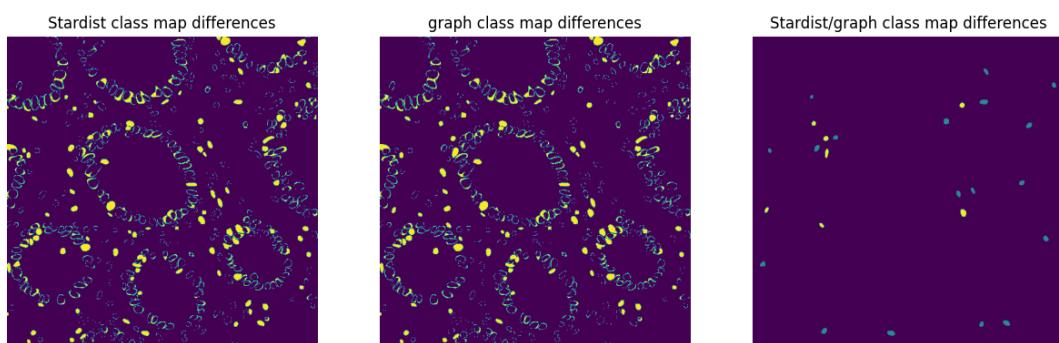
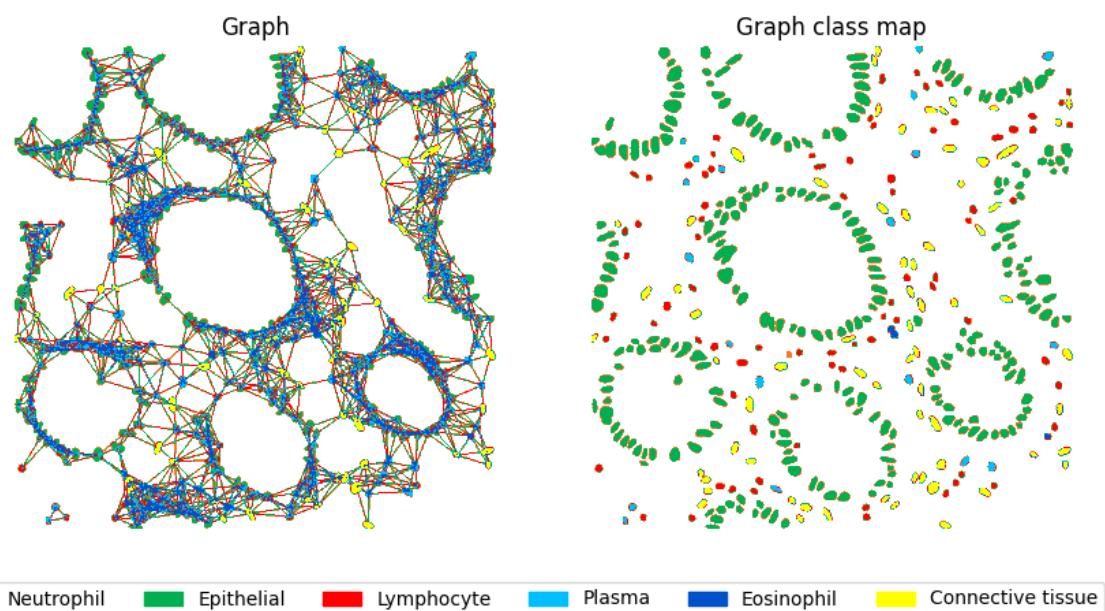
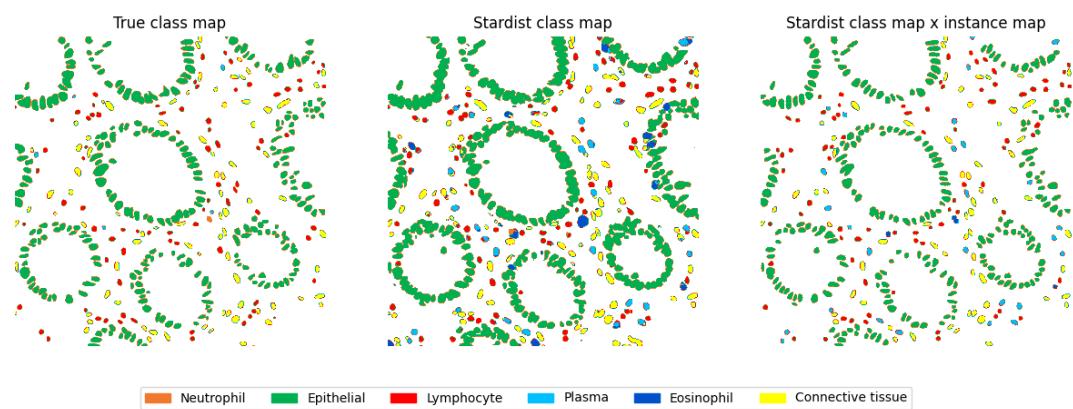
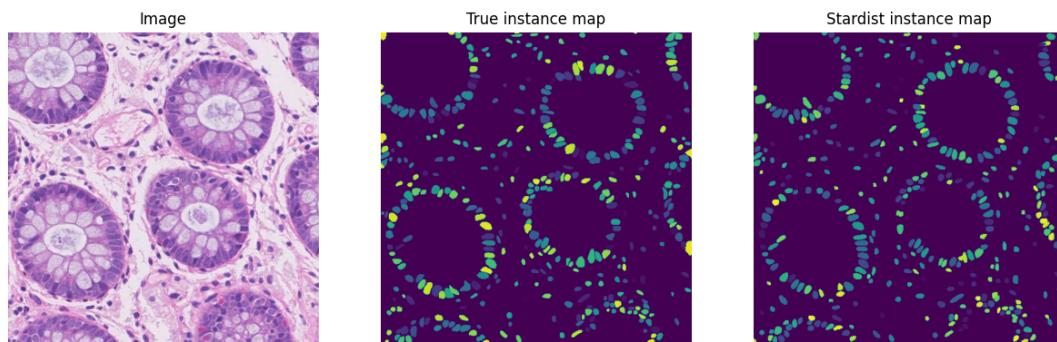


Image 30



Personal segmentation Metrics

Metric	Value
FP	34
TP	353
FN	46
Precision	0.9121447028423773
Recall	0.8847117794486216
Accuracy	0.815242494226328
F1	0.8982188295165394
n_true	399
n_pred	387
mean_true_score	0.7014908181097275
mean_matched_score	0.7929032193364908
panoptic_quality	0.7122006015923187

