| | | | | | 1st: | Logistic Regress | sion + BioBERT-l | nf on Abstracts C | Only dataset | | | | | | | |
|----------------|------------|-----------------|---------------------|----------|----------|------------------|------------------|-------------------|--------------|----------|----------|----------|----------|----------|----------|--|
| | | | Class Probabilities | | | | | | | | | | | | | |
| File name | True class | Predicted class | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| GASiC | 6 | 6 | 0.006284 | 0.145777 | 0.009627 | 0.014563 | 0.003566 | 0.016422 | 0.757478 | 0.00136 | 0.002523 | 0.011926 | 0.003431 | 0.009654 | 0.017389 | |
| dnAQET | 12 | 8 | 0.018867 | 0.008171 | 0.040666 | 0.022074 | 0.030763 | 0.198723 | 0.006893 | 0.010366 | 0.32712 | 0.007976 | 0.005949 | 0.008889 | 0.313543 | |
| cutPrimers | 7 | 7 | 0.009079 | 0.001325 | 0.012951 | 0.003926 | 0.13041 | 0.038804 | 0.001291 | 0.717128 | 0.061387 | 0.000908 | 0.020559 | 0.000623 | 0.00161 | |
| GAAS | 6 | 6 | 0.011007 | 0.016848 | 0.07465 | 0.07408 | 0.020568 | 0.089614 | 0.495348 | 0.003848 | 0.021684 | 0.098524 | 0.029838 | 0.00633 | 0.057662 | |
| Taxonomer | 1 | 1 | 0.009986 | 0.271101 | 0.097945 | 0.174403 | 0.005347 | 0.016809 | 0.221108 | 0.005443 | 0.008441 | 0.074018 | 0.008226 | 0.098549 | 0.008624 | |
| Kart | 0 | 7 | 0.211702 | 0.03278 | 0.023405 | 0.005538 | 0.104598 | 0.238852 | 0.006895 | 0.308635 | 0.028997 | 0.003002 | 0.005367 | 0.013748 | 0.016481 | |
| SKESA | 5 | 5 | 0.034007 | 0.017243 | 0.012919 | 0.021518 | 0.020089 | 0.783664 | 0.005078 | 0.015307 | 0.016305 | 0.00347 | 0.008157 | 0.007164 | 0.055077 | |
| Vipie | 3 | 3 | 0.016142 | 0.010324 | 0.246063 | 0.328641 | 0.063413 | 0.067301 | 0.017041 | 0.034831 | 0.074814 | 0.096003 | 0.012079 | 0.024247 | 0.0091 | |
| Bambino | 11 | 11 | 0.076174 | 0.018134 | 0.148029 | 0.035126 | 0.035372 | 0.04552 | 0.025163 | 0.007971 | 0.041547 | 0.105575 | 0.118287 | 0.298236 | 0.044866 | |
| EasyQC | 8 | 8 | 0.0287 | 0.009983 | 0.04229 | 0.006598 | 0.044542 | 0.023321 | 0.008519 | 0.073392 | 0.591387 | 0.025905 | 0.009248 | 0.126121 | 0.009995 | |
| VirSorter | 3 | 3 | 0.025176 | 0.019317 | 0.234195 | 0.251869 | 0.025937 | 0.118889 | 0.026368 | 0.010905 | 0.025117 | 0.214125 | 0.023866 | 0.010122 | 0.014115 | |
| Sailfish | 6 | 6 | 0.048227 | 0.038246 | 0.024281 | 0.057272 | 0.012185 | 0.065204 | 0.635541 | 0.022386 | 0.025266 | 0.012062 | 0.011554 | 0.016867 | 0.030909 | |
| AlienTrimmer | 7 | 7 | 0.064901 | 0.037077 | 0.056127 | 0.0358 | 0.099157 | 0.140443 | 0.038347 | 0.412065 | 0.026957 | 0.015124 | 0.027145 | 0.020109 | 0.026748 | |
| Bowtie | 0 | 0 | 0.623738 | 0.015835 | 0.005906 | 0.0173 | 0.079654 | 0.127342 | 0.005097 | 0.083393 | 0.01492 | 0.001438 | 0.00238 | 0.003663 | 0.019334 | |
| ATLAS-SNP2 | 10 | 10 | 0.055503 | 0.090562 | 0.040557 | 0.055628 | 0.105386 | 0.019752 | 0.238457 | 0.025807 | 0.032926 | 0.016272 | 0.297578 | 0.011067 | 0.010503 | |
| Minimus | 5 | 5 | 0.036126 | 0.005224 | 0.006345 | 0.014908 | 0.011493 | 0.669398 | 0.006507 | 0.037078 | 0.010287 | 0.004283 | 0.000766 | 0.004955 | 0.19263 | |
| Centrifuge | 1 | 1 | 0.168118 | 0.433096 | 0.026829 | 0.054197 | 0.038473 | 0.105509 | 0.052949 | 0.034962 | 0.014264 | 0.016185 | 0.007152 | 0.040289 | 0.007978 | |
| Kraken | 1 | 1 | 0.233615 | 0.43941 | 0.003699 | 0.019257 | 0.045612 | 0.028827 | 0.169287 | 0.030644 | 0.002734 | 0.007683 | 0.006009 | 0.00298 | 0.010243 | |
| ALLPATHS | 5 | 5 | 0.02022 | 0.003882 | 0.005752 | 0.006448 | 0.010403 | 0.811109 | 0.005403 | 0.002352 | 0.007246 | 0.002743 | 0.003763 | 0.004523 | 0.116156 | |
| Savant | 9 | 11 | 0.060023 | 0.048093 | 0.040956 | 0.040744 | 0.019286 | 0.025573 | 0.020332 | 0.006333 | 0.049663 | 0.16319 | 0.082393 | 0.422103 | 0.021311 | |
| cuBIASTp | 0 | 0 | 0.555738 | 0.004839 | 0.023686 | 0.013474 | 0.137921 | 0.045635 | 0.000668 | 0.108391 | 0.078219 | 0.01245 | 0.008011 | 0.005386 | 0.005581 | |
| PhageFinder | 2 | 2 | 0.053997 | 0.053858 | 0.37695 | 0.068846 | 0.067299 | 0.07664 | 0.026315 | 0.02736 | 0.01229 | 0.022151 | 0.183631 | 0.019128 | 0.011533 | |
| SOAP2 | 4 | 4 | 0.297098 | 0.014128 | 0.014155 | 0.01647 | 0.33522 | 0.041145 | 0.005799 | 0.107011 | 0.042481 | 0.004607 | 0.011242 | 0.076291 | 0.034352 | |
| Rnnotator | 5 | 5 | 0.037699 | 0.109627 | 0.03257 | 0.057399 | 0.026442 | 0.201119 | 0.101432 | 0.008796 | 0.05682 | 0.127854 | 0.05095 | 0.069761 | 0.11953 | |
| consed | 11 | 8 | 0.110208 | 0.003534 | 0.046484 | 0.012867 | 0.075703 | 0.148668 | 0.003771 | 0.103105 | 0.23463 | 0.014786 | 0.00567 | 0.173637 | 0.066936 | |
| VirFind | 2 | 2 | 0.014809 | 0.00784 | 0.518889 | 0.283137 | 0.016836 | 0.065043 | 0.007586 | 0.010355 | 0.025141 | 0.014999 | 0.013097 | 0.014473 | 0.007795 | |
| MePIC | 3 | 3 | 0.008998 | 0.149591 | 0.164941 | 0.330846 | 0.020128 | 0.016108 | 0.109875 | 0.0262 | 0.008377 | 0.102437 | 0.01286 | 0.044639 | 0.005 | |
| Minimap2 | 0 | 0 | 0.389964 | 0.038825 | 0.005822 | 0.016416 | 0.220307 | 0.185615 | 0.009703 | 0.032296 | 0.013076 | 0.007669 | 0.032911 | 0.009413 | 0.037983 | |
| SPADES | 5 | 5 | 0.030626 | 0.05886 | 0.02864 | 0.034792 | 0.013847 | 0.574441 | 0.01764 | 0.008202 | 0.018118 | 0.015464 | 0.008847 | 0.043875 | 0.146647 | |
| metaSPAdes | 5 | 1 | 0.02123 | 0.329781 | 0.017134 | 0.037844 | 0.003383 | 0.304928 | 0.122598 | 0.002087 | 0.002083 | 0.0252 | 0.008409 | 0.072041 | 0.053281 | |
| VERSE | 2 | 2 | 0.034449 | 0.012956 | 0.614713 | 0.14071 | 0.01549 | 0.051017 | 0.022198 | 0.008724 | 0.006504 | 0.037114 | 0.012753 | 0.025409 | 0.017962 | |
| SSPACE | 5 | 5 | 0.045579 | 0.017302 | 0.018868 | 0.03685 | 0.044848 | 0.66307 | 0.006115 | 0.040417 | 0.030545 | 0.01796 | 0.02655 | 0.017899 | 0.033998 | |
| PyroBayes | 10 | 4 | 0.296619 | 0.020297 | 0.010567 | 0.023266 | 0.36415 | 0.015626 | 0.012826 | 0.032807 | 0.019896 | 0.003185 | 0.188026 | 0.003531 | 0.009205 | |
| VCAKE | 5 | 5 | 0.088793 | 0.035406 | 0.012225 | 0.014688 | 0.133416 | 0.372512 | 0.025975 | 0.164233 | 0.036025 | 0.002127 | 0.004775 | 0.008547 | 0.101279 | |
| TAGdb | 4 | 5 | 0.08543 | 0.063454 | 0.043669 | 0.041447 | 0.054988 | 0.372003 | 0.025843 | 0.012533 | 0.065037 | 0.029752 | 0.071099 | 0.102739 | 0.032004 | |
| VirusDetect | 3 | 3 | 0.02001 | 0.005685 | 0.329639 | 0.403579 | 0.013775 | 0.127177 | 0.012733 | 0.014098 | 0.020294 | 0.025833 | 0.01334 | 0.002646 | 0.011192 | |
| Baa. pl | 12 | 12 | 0.174251 | 0.03724 | 0.055345 | 0.070583 | 0.031048 | 0.082388 | 0.058362 | 0.014078 | 0.07519 | 0.017876 | 0.10665 | 0.079402 | 0.197586 | |
| H-BLAST | 12 | 0 | 0.702891 | 0.03724 | 0.03925 | 0.023799 | 0.031046 | 0.038199 | 0.004887 | 0.014496 | 0.034342 | 0.02279 | 0.048207 | 0.013124 | 0.008897 | |
| ViraMiner | 3 | 3 | 0.011595 | 0.140731 | 0.318807 | 0.320139 | 0.035290 | 0.064659 | 0.046748 | 0.015247 | 0.01291 | 0.016636 | 0.006862 | 0.013124 | 0.007232 | |
| MetaShot | 3 | 3 | 0.009229 | 0.140731 | 0.021124 | 0.070402 | 0.016533 | 0.004639 | 0.381123 | 0.015247 | 0.003006 | 0.013706 | 0.0034 | 0.021902 | 0.007232 | |
| SPACE-LongRead | 5 | 5 | 0.052467 | 0.429747 | 0.021124 | 0.070402 | 0.004693 | 0.600729 | 0.361123 | 0.005291 | 0.003006 | 0.013706 | 0.0034 | 0.027231 | 0.013832 | |
| CSN | 9 | 9 | 0.104634 | 0.044451 | 0.04462 | 0.046734 | 0.083589 | 0.000729 | 0.012926 | 0.014647 | 0.016118 | 0.014545 | 0.016911 | 0.015125 | 0.055139 | |
| FQC | 8 | 8 | 0.062932 | 0.045231 | 0.078025 | 0.064392 | 0.034537 | 0.059691 | 0.150314 | 0.017023 | 0.680847 | 0.231706 | 0.142197 | 0.026356 | 0.016061 | |
| | 0 | 2 | | | 0.053347 | 0.016512 | | 0.023965 | 0.004156 | | 0.003454 | | | 0.070321 | | |
| PhiSpy | 2 | 0 | 0.018295 | 0.079672 | | | 0.023222 | | | 0.005377 | | 0.018119 | 0.0526 | | 0.009024 | |
| DeepVariant | 10 | 0 | 0.352201 | 0.046511 | 0.051593 | 0.079604 | 0.14243 | 0.097001 | 0.015391 | 0.025667 | 0.032736 | 0.015063 | 0.047987 | 0.031861 | 0.061954 | |

| | | | | | 2nd: L | ogistic Regressi | ion + BERTS2L o | n Abstracts+Me | thods dataset | | | | | | | |
|----------------|------------|-----------------|----------|----------|----------|------------------|-----------------|---------------------|---------------|----------|----------|----------|----------|----------|----------|--|
| | | | | | | | | Class Probabilities | | | | | | | | |
| File name | True class | Predicted class | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| GASiC | 6 | 6 | 0.001228 | 0.170926 | 0.000277 | 0.001127 | 0.000172 | 0.000282 | 0.820224 | 0.000013 | 0.000877 | 0.000916 | 0.000135 | 0.003281 | 0.000543 | |
| dnAQET | 12 | 12 | 0.000231 | 0.001116 | 0.000174 | 0.001127 | 0.00141 | 0.00225 | 0.000681 | 0.00003 | 0.002138 | 0.000755 | 0.000052 | 0.002847 | 0.98719 | |
| cutPrimers | 7 | 7 | 0.000835 | 0.000231 | 0.000298 | 0.000031 | 0.014462 | 0.005393 | 0.000708 | 0.967736 | 0.004059 | 0.000055 | 0.005989 | 0.000057 | 0.000146 | |
| GAAS | 6 | 6 | 0.010279 | 0.032949 | 0.00086 | 0.007477 | 0.001239 | 0.000466 | 0.938606 | 0.000032 | 0.001741 | 0.000319 | 0.00027 | 0.002654 | 0.003107 | |
| Taxonomer | 1 | 3 | 0.079734 | 0.117096 | 0.042144 | 0.397748 | 0.00082 | 0.042196 | 0.103972 | 0.000109 | 0.005636 | 0.063185 | 0.032423 | 0.110507 | 0.004429 | |
| Kart | 0 | 5 | 0.215361 | 0.011961 | 0.003934 | 0.001885 | 0.247254 | 0.371024 | 0.005148 | 0.127759 | 0.005929 | 0.000287 | 0.005192 | 0.000814 | 0.003451 | |
| SKESA | 5 | 5 | 0.032296 | 0.007134 | 0.010062 | 0.064931 | 0.008685 | 0.805882 | 0.004666 | 0.00888 | 0.014459 | 0.001418 | 0.003412 | 0.033791 | 0.004385 | |
| Vipie | 3 | 2 | 0.008563 | 0.012994 | 0.375415 | 0.123261 | 0.021953 | 0.122 | 0.0317 | 0.00394 | 0.137987 | 0.072529 | 0.016771 | 0.060058 | 0.01283 | |
| Bambino | 11 | 11 | 0.021715 | 0.001997 | 0.0536 | 0.033095 | 0.055318 | 0.029065 | 0.034528 | 0.009999 | 0.022929 | 0.03435 | 0.201242 | 0.500512 | 0.00165 | |
| EasyQC | 8 | 8 | 0.036743 | 0.045958 | 0.073213 | 0.013719 | 0.015465 | 0.175424 | 0.007917 | 0.027327 | 0.345074 | 0.05704 | 0.014088 | 0.162183 | 0.025849 | |
| VirSorter | 3 | 3 | 0.001482 | 0.024898 | 0.267142 | 0.3286 | 0.003108 | 0.08903 | 0.067903 | 0.001182 | 0.001054 | 0.16447 | 0.00181 | 0.043705 | 0.005616 | |
| Sailfish | 6 | 6 | 0.052116 | 0.045973 | 0.010819 | 0.009207 | 0.026877 | 0.115238 | 0.607361 | 0.033362 | 0.043186 | 0.004285 | 0.004071 | 0.00942 | 0.038086 | |
| AlienTrimmer | 7 | 10 | 0.021329 | 0.001825 | 0.134717 | 0.030734 | 0.173465 | 0.226634 | 0.008307 | 0.156801 | 0.016972 | 0.000796 | 0.227133 | 0.000208 | 0.001079 | |
| Bowtie | 0 | 0 | 0.821899 | 0.011607 | 0.000946 | 0.003264 | 0.101733 | 0.035328 | 0.004151 | 0.01692 | 0.001616 | 0.000057 | 0.001227 | 0.000234 | 0.001019 | |
| ATLAS-SNP2 | 10 | 10 | 0.042396 | 0.028526 | 0.009671 | 0.006987 | 0.02283 | 0.009701 | 0.03896 | 0.001046 | 0.031849 | 0.001998 | 0.79845 | 0.00681 | 0.000776 | |
| Minimus | 5 | 5 | 0.005647 | 0.01498 | 0.006136 | 0.012012 | 0.036977 | 0.870921 | 0.000225 | 0.013853 | 0.006413 | 0.00134 | 0.001016 | 0.001225 | 0.029255 | |
| Centrifuge | 1 | 1 | 0.039966 | 0.623248 | 0.026782 | 0.05627 | 0.00294 | 0.075489 | 0.127264 | 0.003056 | 0.003225 | 0.011203 | 0.008371 | 0.020639 | 0.001547 | |
| Kraken | 1 | 1 | 0.303847 | 0.642227 | 0.001481 | 0.001373 | 0.019362 | 0.002537 | 0.024194 | 0.001491 | 0.001642 | 0.000154 | 0.000778 | 0.000263 | 0.000651 | |
| ALLPATHS | 5 | 5 | 0.0047 | 0.021675 | 0.029631 | 0.031444 | 0.003379 | 0.884092 | 0.007034 | 0.001881 | 0.001135 | 0.001924 | 0.001456 | 0.004324 | 0.007325 | |
| Savant | 9 | 11 | 0.072163 | 0.048866 | 0.038571 | 0.006756 | 0.021895 | 0.025531 | 0.005673 | 0.002704 | 0.160589 | 0.113908 | 0.017633 | 0.438068 | 0.047641 | |
| cuBIASTp | 0 | 0 | 0.696 | 0.047335 | 0.00474 | 0.002798 | 0.048434 | 0.07276 | 0.005067 | 0.035712 | 0.009169 | 0.00573 | 0.02229 | 0.034027 | 0.015939 | |
| PhageFinder | 2 | 2 | 0.006068 | 0.092833 | 0.37682 | 0.212219 | 0.015697 | 0.049097 | 0.159708 | 0.001956 | 0.004217 | 0.003425 | 0.052675 | 0.000942 | 0.024341 | |
| SOAP2 | 4 | 4 | 0.336831 | 0.005281 | 0.0046 | 0.009686 | 0.493407 | 0.05542 | 0.011122 | 0.045935 | 0.004218 | 0.001302 | 0.010437 | 0.019897 | 0.001865 | |
| Rnnotator | 5 | 5 | 0.055167 | 0.038464 | 0.013069 | 0.064477 | 0.031752 | 0.519514 | 0.071843 | 0.0018 | 0.039842 | 0.091941 | 0.005392 | 0.008131 | 0.058608 | |
| consed | 11 | 5 | 0.025441 | 0.003186 | 0.034748 | 0.012196 | 0.16345 | 0.255613 | 0.004779 | 0.216485 | 0.099383 | 0.008923 | 0.046171 | 0.115621 | 0.014003 | |
| VirFind | 2 | 2 | 0.007732 | 0.015705 | 0.293099 | 0.122162 | 0.022825 | 0.201109 | 0.020746 | 0.008287 | 0.020659 | 0.008641 | 0.086636 | 0.188608 | 0.00379 | |
| MePIC | 3 | 2 | 0.001307 | 0.038503 | 0.495576 | 0.233098 | 0.017181 | 0.028254 | 0.08324 | 0.003718 | 0.010911 | 0.07485 | 0.004907 | 0.004681 | 0.003775 | |
| Minimap2 | 0 | 0 | 0.831048 | 0.022696 | 0.000292 | 0.005308 | 0.013543 | 0.105558 | 0.006372 | 0.007515 | 0.002223 | 0.001419 | 0.001813 | 0.001531 | 0.000681 | |
| SPADES | 5 | 5 | 0.035975 | 0.038029 | 0.012518 | 0.043798 | 0.004722 | 0.742932 | 0.008962 | 0.001324 | 0.012588 | 0.038564 | 0.007655 | 0.044589 | 0.008345 | |
| metaSPAdes | 5 | 1 | 0.013373 | 0.294945 | 0.048254 | 0.06194 | 0.014572 | 0.191307 | 0.021688 | 0.00036 | 0.008725 | 0.092254 | 0.025652 | 0.140994 | 0.085936 | |
| VERSE | 2 | 3 | 0.023491 | 0.014579 | 0.318916 | 0.471935 | 0.006899 | 0.050214 | 0.001582 | 0.004481 | 0.018023 | 0.042816 | 0.03805 | 0.004498 | 0.004517 | |
| SSPACE | 5 | 5 | 0.008721 | 0.002792 | 0.002569 | 0.001738 | 0.023913 | 0.792776 | 0.001075 | 0.091478 | 0.016797 | 0.001134 | 0.023681 | 0.005208 | 0.02812 | |
| PyroBayes | 10 | 10 | 0.022794 | 0.002214 | 0.043074 | 0.00086 | 0.021449 | 0.019149 | 0.002915 | 0.054456 | 0.001995 | 0.00063 | 0.828861 | 0.001409 | 0.000193 | |
| VCAKE | 5 | 5 | 0.040114 | 0.006935 | 0.004369 | 0.002485 | 0.05339 | 0.81555 | 0.003729 | 0.049023 | 0.004917 | 0.000859 | 0.001313 | 0.000332 | 0.016985 | |
| TAGdb | 4 | 4 | 0.098893 | 0.090373 | 0.015135 | 0.016848 | 0.380173 | 0.302167 | 0.004057 | 0.002438 | 0.012346 | 0.01561 | 0.049629 | 0.01051 | 0.00182 | |
| VirusDetect | 3 | 3 | 0.000543 | 0.001874 | 0.070026 | 0.874671 | 0.000948 | 0.037073 | 0.003797 | 0.000491 | 0.005143 | 0.000734 | 0.001083 | 0.000849 | 0.002769 | |
| Baa. pl | 12 | 12 | 0.093472 | 0.089018 | 0.018273 | 0.148368 | 0.059349 | 0.176209 | 0.010081 | 0.013546 | 0.108956 | 0.017486 | 0.010918 | 0.008763 | 0.24556 | |
| H-BLAST | | | 0.550142 | 0.087335 | 0.062015 | 0.058818 | 0.004765 | 0.078631 | 0.003459 | 0.002366 | 0.012593 | 0.023828 | 0.023152 | 0.060533 | 0.032364 | |
| ViraMiner | 3 | 3 | 0.007474 | 0.053081 | 0.090328 | 0.709019 | 0.013286 | 0.079072 | 0.014008 | 0.000628 | 0.002881 | 0.003041 | 0.015827 | 0.002616 | 0.00874 | |
| MetaShot | 1 | 8 | 0.022673 | 0.352592 | 0.012812 | 0.030478 | 0.000234 | 0.004786 | 0.560333 | 0.000026 | 0.002561 | 0.012932 | 0.000447 | 0.002010 | 0.000777 | |
| SPACE-LongRead | 5 | 5 | 0.076752 | 0.027401 | 0.012812 | 0.030478 | 0.005206 | 0.583119 | 0.003146 | 0.000146 | 0.000349 | 0.023956 | 0.010961 | 0.001242 | 0.082361 | |
| CSN CSN | 9 | 5 | 0.070175 | 0.027401 | 0.030285 | 0.125771 | 0.003200 | 0.363119 | 0.053452 | 0.000139 | 0.016196 | 0.02161 | 0.010961 | 0.023337 | 0.002361 | |
| FQC | 8 | 8 | 0.007609 | 0.139407 | 0.030269 | 0.005572 | 0.007499 | 0.472632 | 0.003957 | 0.001813 | 0.783581 | 0.02161 | 0.006266 | 0.162566 | 0.003739 | |
| | 2 | 2 | 0.007609 | 0.001183 | 0.5029 | 0.164535 | 0.003234 | 0.001269 | 0.002957 | 0.000343 | 0.763561 | 0.0026 | 0.006266 | 0.002038 | 0.01222 | |
| PhiSpy | 10 | 5 | 0.005337 | 0.048074 | 0.5029 | 0.164535 | 0.00042 | 0.09813 | 0.147294 | 0.000343 | 0.000394 | 0.01187 | 0.017744 | 0.002038 | 0.00092 | |
| DeepVariant | 10 | 5 | 0.016772 | 0.020088 | 0.019852 | 0.079617 | 0.10/614 | 0.391799 | 0.022577 | 0.010695 | 0.016745 | 0.004024 | 0.140443 | 0.15244 | 0.017332 | |

| | 3rd: Logistic Regression + BERTS2L on Abstracts Only dataset Class Probabilities | | | | | | | | | | | | | | |
|---------------------|---|-----------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------|----------|----------------------|----------------------|-----------|----------------------|----------------------|----------|
| | | 5 11 1 1 | | | | _ | | | | _ | _ | | | | 0.000284 |
| File name GASiC | True class | Predicted class | 0.000415 | 0.130358 | 0.000092 | 0.000705 | 0.000055 | 0.00011 | 0.865322 | 0.000003 | 0.000382 | 0.000391 | 0.000049 | 0.001834 | |
| dnAQET | | 6 | | 0.000611 | | 0.000705 | | | 0.000236 | | | 0.000391 | | | 0.000264 |
| | 12 | 12 | 0.000115 | 0.00083 | 0.000061 0.000086 | 0.000446 0.000003 | 0.000611 0.008148 | 0.001911 | 0.000236 | 0.000012 0.985114 | 0.001532 0.001271 | 0.000421 | 0.000024 0.002573 | 0.001872 0.000013 | 0.992147 |
| cutPrimers | , | , | 0.000192 | | 0.000416 | | | 0.002344 | 0.000143 | | | 0.000013 | 0.002573 | | 0.002039 |
| GAAS Taxonomer | 0 | 3 | 0.008321 0.051087 | 0.019305 0.082518 | 0.000416 | 0.008571 0.54358 | 0.000674 0.000324 | 0.000242 | 0.957626 | 0.000011 0.000036 | 0.001132 0.003037 | 0.000143 | 0.00013 | 0.001391 | 0.002038 |
| Kart | 0 | 5 | 0.031087 | 0.002316 | 0.020064 | 0.000776 | 0.192321 | 0.409944 | 0.007243 | 0.131149 | 0.003037 | 0.00014 | 0.018439 | 0.000464 | 0.002674 |
| SKESA | 5 | 5 | 0.241081 | 0.008704 | 0.003356 | 0.000776 | 0.192321 | 0.409944 | 0.003323 | 0.131149 | 0.00356 | 0.00014 | 0.003588 | 0.000464 | 0.001399 |
| Vipie | 3 | 2 | 0.019324 | 0.002717 | 0.411004 | 0.027498 | 0.002007 | 0.163119 | 0.001249 | 0.003948 | 0.147018 | 0.000323 | 0.001133 | 0.017316 | 0.001319 |
| Bambino | 11 | 11 | 0.00493 | 0.006303 | 0.411004 | 0.079299 | 0.073976 | 0.033224 | 0.032369 | 0.002348 | 0.020134 | 0.039992 | 0.014062 | 0.496024 | 0.010774 |
| | 11 | 8 | 0.013867 | 0.039467 | 0.049353 | 0.017354 | 0.073976 | 0.202952 | 0.005219 | 0.006293 | 0.39516 | 0.039992 | 0.213939 | 0.496024 | 0.000722 |
| EasyQC VirSorter | 0 | 2 | 0.025161 | 0.039467 | 0.309885 | 0.007359 | 0.001056 | 0.202952 | 0.005219 | 0.020163 | 0.000705 | 0.0478827 | 0.01117 | 0.145752 | 0.021242 |
| | 3 | 6 | | | | | | | | | | | | | |
| Sailfish | 0 | - | 0.027083 | 0.021824 | 0.006342 | 0.004293 | 0.013198 | 0.071618 | 0.794547 | 0.013533 | 0.021186 | 0.001986 | 0.002204 | 0.003268 | 0.018917 |
| AlienTrimmer | / | 10 | 0.011184 | 0.000765 | 0.19091 | 0.014933 | 0.131885 | 0.230405 | 0.004875 | 0.160962 | 0.010315 | 0.000437 | 0.242872 | 0.000085 | 0.000372 |
| Bowtie | 0 | 0 | 0.906169 | 0.004469 | 0.000649 | 0.001763 | 0.05998 | 0.01653 | 0.002495 | 0.006475 | 0.000558 | 0.000014 | 0.000488 | 0.00011 | 0.0003 |
| ATLAS-SNP2 | 10 | 10 | 0.027151 | 0.019447 | 0.005888 | 0.003697 | 0.01635 | 0.006297 | 0.022555 | 0.000476 | 0.021153 | 0.000853 | 0.871185 | 0.004685 | 0.000263 |
| Minimus | 5 | 5 | 0.002105 | 0.008179 | 0.003116 | 0.00512 | 0.016547 | 0.930561 | 0.000046 | 0.005115 | 0.002665 | 0.000496 | 0.00046 | 0.000305 | 0.025286 |
| Centrifuge | 1 | 1 | 0.022756 | 0.761714 | 0.018361 | 0.025716 | 0.001091 | 0.05021 | 0.091932 | 0.001299 | 0.001394 | 0.006684 | 0.00449 | 0.013502 | 0.000851 |
| Kraken | 1 | 1 | 0.264761 | 0.706851 | 0.001018 | 0.000644 | 0.008749 | 0.000687 | 0.015409 | 0.000558 | 0.000605 | 0.000056 | 0.000343 | 0.000086 | 0.000231 |
| ALLPATHS | 5 | 5 | 0.001761 | 0.009688 | 0.017804 | 0.011836 | 0.001188 | 0.948683 | 0.002518 | 0.00052 | 0.000369 | 0.000662 | 0.00044 | 0.00168 | 0.002851 |
| Savant | 9 | 11 | 0.065441 | 0.047727 | 0.032637 | 0.002713 | 0.017071 | 0.016685 | 0.003301 | 0.001547 | 0.170963 | 0.112127 | 0.014321 | 0.484 | 0.031466 |
| cuBIASTp | 0 | 0 | 0.772849 | 0.037484 | 0.002808 | 0.000985 | 0.035793 | 0.049112 | 0.002438 | 0.028841 | 0.005595 | 0.003677 | 0.015839 | 0.036696 | 0.007883 |
| PhageFinder | 2 | 2 | 0.002662 | 0.09683 | 0.456921 | 0.153821 | 0.008781 | 0.047736 | 0.160465 | 0.001216 | 0.00244 | 0.002033 | 0.050165 | 0.000466 | 0.016466 |
| SOAP2 | 4 | 4 | 0.351819 | 0.003006 | 0.003693 | 0.005982 | 0.533462 | 0.039286 | 0.005579 | 0.036512 | 0.002207 | 0.000858 | 0.007138 | 0.009771 | 0.000686 |
| Rnnotator | 5 | 5 | 0.032982 | 0.026446 | 0.006658 | 0.038294 | 0.017445 | 0.67355 | 0.062787 | 0.000881 | 0.026692 | 0.072949 | 0.002817 | 0.004151 | 0.034348 |
| consed | 11 | 5 | 0.015768 | 0.001702 | 0.034541 | 0.009295 | 0.174987 | 0.31654 | 0.003776 | 0.185089 | 0.099388 | 0.007995 | 0.0522 | 0.086543 | 0.012174 |
| VirFind | 2 | 5 | 0.004862 | 0.014593 | 0.303753 | 0.065339 | 0.024054 | 0.306772 | 0.011943 | 0.008032 | 0.020007 | 0.005672 | 0.082732 | 0.150455 | 0.001786 |
| MePIC | 3 | 2 | 0.000552 | 0.036836 | 0.609459 | 0.158735 | 0.009809 | 0.031394 | 0.065777 | 0.003043 | 0.008947 | 0.067476 | 0.003315 | 0.002574 | 0.002081 |
| Minimap2 | 0 | 0 | 0.880048 | 0.01443 | 0.000112 | 0.004568 | 0.009173 | 0.079564 | 0.0042 | 0.00418 | 0.001042 | 0.000768 | 0.000737 | 0.000978 | 0.0002 |
| SPADES | 5 | 5 | 0.023504 | 0.02575 | 0.006238 | 0.025433 | 0.001814 | 0.834782 | 0.004495 | 0.00054 | 0.007556 | 0.025358 | 0.003833 | 0.034451 | 0.006246 |
| metaSPAdes | 5 | 1 | 0.008328 | 0.29183 | 0.033338 | 0.056112 | 0.006448 | 0.167146 | 0.012249 | 0.000128 | 0.005435 | 0.074786 | 0.021702 | 0.221678 | 0.100819 |
| VERSE | 2 | 3 | 0.01227 | 0.005742 | 0.262928 | 0.6189 | 0.002283 | 0.030102 | 0.000509 | 0.001685 | 0.010256 | 0.022585 | 0.027431 | 0.001856 | 0.003451 |
| SSPACE | 5 | 5 | 0.003324 | 0.00132 | 0.001 | 0.000414 | 0.01223 | 0.872445 | 0.000418 | 0.069415 | 0.00779 | 0.000446 | 0.014919 | 0.002908 | 0.013372 |
| PyroBayes | 10 | 10 | 0.010316 | 0.000819 | 0.040906 | 0.00028 | 0.017336 | 0.009348 | 0.00153 | 0.040872 | 0.000665 | 0.000248 | 0.876586 | 0.001038 | 0.000055 |
| VCAKE | 5 | 5 | 0.021931 | 0.002802 | 0.002604 | 0.000885 | 0.031129 | 0.900164 | 0.001876 | 0.026359 | 0.002034 | 0.000367 | 0.000616 | 0.00009 | 0.009143 |
| TAGdb | 4 | 4 | 0.062705 | 0.084 | 0.009447 | 0.011286 | 0.40691 | 0.351549 | 0.002099 | 0.001425 | 0.008169 | 0.011433 | 0.040709 | 0.009155 | 0.001113 |
| VirusDetect | 3 | 3 | 0.000108 | 0.000633 | 0.034325 | 0.931466 | 0.000296 | 0.027053 | 0.001786 | 0.000126 | 0.002145 | 0.000206 | 0.000337 | 0.000258 | 0.001263 |
| Baa. pl | 12 | 12 | 0.084351 | 0.157577 | 0.015569 | 0.169394 | 0.012794 | 0.069387 | 0.010277 | 0.00044 | 0.029528 | 0.008336 | 0.00316 | 0.004798 | 0.434392 |
| H-BLAST | 0 | 0 | 0.643251 | 0.076567 | 0.051638 | 0.036521 | 0.002333 | 0.051398 | 0.0017 | 0.001231 | 0.007372 | 0.016382 | 0.018387 | 0.069066 | 0.024154 |
| ViraMiner | 3 | 3 | 0.003609 | 0.032108 | 0.054006 | 0.824767 | 0.004329 | 0.052647 | 0.007912 | 0.000191 | 0.001241 | 0.001164 | 0.009006 | 0.001459 | 0.00756 |
| MetaShot | 1 | 6 | 0.012727 | 0.270948 | 0.008054 | 0.026945 | 0.000051 | 0.002384 | 0.670784 | 0.000042 | 0.000183 | 0.006855 | 0.000167 | 0.000477 | 0.000381 |
| ACE-LongRead | 5 | 5 | 0.072488 | 0.021711 | 0.006912 | 0.083878 | 0.001876 | 0.697233 | 0.001201 | 0.003998 | 0.012551 | 0.016471 | 0.006075 | 0.022362 | 0.053245 |
| CSN | 9 | 5 | 0.053625 | 0.159217 | 0.018691 | 0.055407 | 0.002986 | 0.560347 | 0.057864 | 0.000862 | 0.04446 | 0.013824 | 0.024841 | 0.001907 | 0.005969 |
| FQC | 8 | 8 | 0.004421 | 0.000722 | 0.007546 | 0.001971 | 0.00235 | 0.000857 | 0.001673 | 0.000271 | 0.898549 | 0.001056 | 0.002965 | 0.071996 | 0.005623 |
| PhiSpy | 2 | 2 | 0.002646 | 0.037718 | 0.533217 | 0.127634 | 0.000116 | 0.120974 | 0.156606 | 0.000142 | 0.000149 | 0.005806 | 0.013021 | 0.001111 | 0.00086 |
| DeepVariant | 10 | 5 | 0.011136 | 0.013215 | 0.012424 | 0.057744 | 0.095863 | 0.497111 | 0.013531 | 0.007404 | 0.01302 | 0.002212 | 0.129344 | 0.135977 | 0.011021 |

| | | | | | 3rd: L | ogistic Regress | ion + BERTSL4 o | n Abstracts+Met | thods dataset | | | | | | |
|----------------|------------|-----------------|----------|----------|----------|-----------------|-----------------|-----------------|------------------|----------|----------|----------|----------|----------|----------|
| | | | | | | | | Cla | ss Probabilities | | | | | | |
| File name | True class | Predicted class | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| GASiC | 6 | 6 | 0.002186 | 0.194611 | 0.001176 | 0.003603 | 0.000984 | 0.000452 | 0.781258 | 0.000057 | 0.002482 | 0.002908 | 0.000793 | 0.007044 | 0.002446 |
| dnAQET | 12 | 12 | 0.001368 | 0.005141 | 0.001153 | 0.006806 | 0.00926 | 0.019017 | 0.00827 | 0.001074 | 0.005151 | 0.009613 | 0.000838 | 0.010843 | 0.921465 |
| cutPrimers | 7 | 7 | 0.003116 | 0.001304 | 0.001701 | 0.000402 | 0.039888 | 0.012527 | 0.003565 | 0.904864 | 0.009131 | 0.000607 | 0.020964 | 0.000622 | 0.00131 |
| GAAS | 6 | 6 | 0.016925 | 0.055231 | 0.0063 | 0.018683 | 0.005119 | 0.001559 | 0.869369 | 0.00021 | 0.006415 | 0.001687 | 0.001846 | 0.007935 | 0.008721 |
| Taxonomer | 1 | 3 | 0.139324 | 0.110298 | 0.080239 | 0.255569 | 0.002843 | 0.043379 | 0.133973 | 0.000761 | 0.014812 | 0.053916 | 0.074798 | 0.07881 | 0.011277 |
| Kart | 0 | 5 | 0.182594 | 0.027512 | 0.007313 | 0.007965 | 0.252329 | 0.312391 | 0.00821 | 0.166896 | 0.01528 | 0.00153 | 0.008783 | 0.00223 | 0.006968 |
| SKESA | 5 | 5 | 0.028959 | 0.016312 | 0.023809 | 0.097947 | 0.018154 | 0.679636 | 0.009878 | 0.013301 | 0.021746 | 0.006333 | 0.008505 | 0.05878 | 0.016639 |
| Vipie | 3 | 2 | 0.02303 | 0.025151 | 0.238379 | 0.178649 | 0.027079 | 0.136159 | 0.024946 | 0.01132 | 0.137795 | 0.075232 | 0.034028 | 0.064125 | 0.024106 |
| Bambino | 11 | 11 | 0.02776 | 0.010601 | 0.034203 | 0.028222 | 0.045428 | 0.035839 | 0.049914 | 0.032001 | 0.025109 | 0.069244 | 0.205321 | 0.429863 | 0.006495 |
| EasyQC | 8 | 8 | 0.060071 | 0.047888 | 0.0975 | 0.024221 | 0.021564 | 0.176326 | 0.018253 | 0.053164 | 0.21056 | 0.071822 | 0.057186 | 0.110978 | 0.050468 |
| VirSorter | 3 | 9 | 0.001863 | 0.100016 | 0.158857 | 0.195129 | 0.005266 | 0.059539 | 0.117027 | 0.00504 | 0.002155 | 0.266334 | 0.013993 | 0.060763 | 0.01402 |
| Sailfish | 6 | 6 | 0.051485 | 0.100382 | 0.019664 | 0.01659 | 0.066051 | 0.111636 | 0.447059 | 0.028115 | 0.039977 | 0.03554 | 0.014131 | 0.019448 | 0.049923 |
| AlienTrimmer | 7 | 2 | 0.027398 | 0.003401 | 0.216212 | 0.048166 | 0.192585 | 0.113535 | 0.023423 | 0.14607 | 0.034159 | 0.003337 | 0.188486 | 0.001088 | 0.002139 |
| Bowtie | 0 | 0 | 0.815345 | 0.010088 | 0.000973 | 0.003832 | 0.092232 | 0.053827 | 0.004143 | 0.009343 | 0.002499 | 0.000314 | 0.002708 | 0.001681 | 0.003016 |
| ATLAS-SNP2 | 10 | 10 | 0.042644 | 0.036389 | 0.025899 | 0.013563 | 0.051405 | 0.012278 | 0.058052 | 0.00187 | 0.049009 | 0.004629 | 0.691658 | 0.009184 | 0.003419 |
| Minimus | 5 | 5 | 0.022247 | 0.038526 | 0.012046 | 0.024107 | 0.06471 | 0.754901 | 0.000964 | 0.018736 | 0.013665 | 0.004705 | 0.004524 | 0.004917 | 0.035952 |
| Centrifuge | 1 | 1 | 0.049588 | 0.371938 | 0.038488 | 0.124692 | 0.007751 | 0.134122 | 0.12486 | 0.013732 | 0.011166 | 0.031156 | 0.016009 | 0.070868 | 0.00563 |
| Kraken | 1 | 1 | 0.192759 | 0.625291 | 0.005296 | 0.008997 | 0.084491 | 0.006889 | 0.04773 | 0.010448 | 0.005519 | 0.001922 | 0.005633 | 0.002727 | 0.002297 |
| ALLPATHS | 5 | 5 | 0.011147 | 0.050922 | 0.061984 | 0.093096 | 0.013709 | 0.674992 | 0.019455 | 0.004516 | 0.00405 | 0.018925 | 0.007686 | 0.021361 | 0.018158 |
| Savant | 9 | 11 | 0.085429 | 0.041285 | 0.040869 | 0.005721 | 0.031541 | 0.031987 | 0.010607 | 0.007146 | 0.152311 | 0.098823 | 0.027625 | 0.386261 | 0.080395 |
| cuBIASTp | 0 | 0 | 0.478772 | 0.086662 | 0.007826 | 0.007419 | 0.110776 | 0.125278 | 0.013076 | 0.046276 | 0.016824 | 0.011728 | 0.028692 | 0.025283 | 0.041389 |
| PhageFinder | 2 | 2 | 0.009963 | 0.068494 | 0.262658 | 0.180627 | 0.027401 | 0.030839 | 0.167227 | 0.003213 | 0.009972 | 0.007669 | 0.166388 | 0.003562 | 0.061986 |
| SOAP2 | 4 | 4 | 0.338471 | 0.008497 | 0.006721 | 0.00848 | 0.416725 | 0.088882 | 0.008784 | 0.069302 | 0.013563 | 0.00159 | 0.009431 | 0.025179 | 0.004374 |
| Rnnotator | 5 | 5 | 0.049618 | 0.024812 | 0.027835 | 0.065219 | 0.039333 | 0.299628 | 0.075434 | 0.007364 | 0.050271 | 0.215384 | 0.008785 | 0.01992 | 0.116398 |
| consed | 11 | 8 | 0.039621 | 0.021134 | 0.044214 | 0.016189 | 0.150403 | 0.15945 | 0.010855 | 0.136774 | 0.161824 | 0.018786 | 0.089739 | 0.125072 | 0.025938 |
| VirFind | 2 | 2 | 0.009329 | 0.034553 | 0.231191 | 0.139935 | 0.03002 | 0.225195 | 0.047311 | 0.021198 | 0.030009 | 0.015452 | 0.070521 | 0.138043 | 0.007245 |
| MePIC | 3 | 2 | 0.001897 | 0.037832 | 0.372411 | 0.330877 | 0.014277 | 0.018167 | 0.127339 | 0.008081 | 0.00904 | 0.058113 | 0.007429 | 0.006023 | 0.008515 |
| Minimap2 | 0 | 0 | 0.740421 | 0.037787 | 0.001094 | 0.011866 | 0.027402 | 0.121393 | 0.017048 | 0.013895 | 0.007217 | 0.005674 | 0.004784 | 0.007488 | 0.003932 |
| SPADES | 5 | 5 | 0.044654 | 0.084592 | 0.026493 | 0.04123 | 0.014474 | 0.54427 | 0.021335 | 0.007439 | 0.031461 | 0.066524 | 0.026011 | 0.074508 | 0.017008 |
| metaSPAdes | 5 | 1 | 0.019564 | 0.179907 | 0.061461 | 0.073395 | 0.020024 | 0.167495 | 0.020926 | 0.00148 | 0.01097 | 0.123555 | 0.060269 | 0.153266 | 0.107689 |
| VERSE | 2 | 3 | 0.081258 | 0.036056 | 0.275494 | 0.32432 | 0.019944 | 0.050397 | 0.004686 | 0.012653 | 0.05105 | 0.051323 | 0.060987 | 0.012789 | 0.019043 |
| SSPACE | 5 | 5 | 0.015104 | 0.008473 | 0.006721 | 0.005019 | 0.097035 | 0.487111 | 0.005585 | 0.236461 | 0.029239 | 0.007235 | 0.051 | 0.009369 | 0.041648 |
| PyroBayes | 10 | 10 | 0.033352 | 0.009452 | 0.087082 | 0.002661 | 0.042657 | 0.022203 | 0.011503 | 0.080945 | 0.01705 | 0.003714 | 0.682365 | 0.005183 | 0.001834 |
| VCAKE | .5 | 5 | 0.070322 | 0.013728 | 0.012701 | 0.00624 | 0.072649 | 0.732939 | 0.008785 | 0.042018 | 0.011886 | 0.002812 | 0.004769 | 0.001856 | 0.019295 |
| TAGdb | 4 | 5 | 0.085132 | 0.069737 | 0.018021 | 0.030578 | 0.300373 | 0.35602 | 0.005312 | 0.009489 | 0.019282 | 0.023931 | 0.052046 | 0.020899 | 0.009179 |
| VirusDetect | 3 | 3 | 0.00174 | 0.005972 | 0.15986 | 0.692931 | 0.003305 | 0.069491 | 0.018313 | 0.002843 | 0.011757 | 0.005398 | 0.011157 | 0.006517 | 0.010716 |
| Baa. pl | 12 | 12 | 0.06094 | 0.075261 | 0.019678 | 0.133965 | 0.094125 | 0.15406 | 0.033179 | 0.022449 | 0.16379 | 0.021549 | 0.031464 | 0.017205 | 0.172336 |
| H-BLAST | 12 | 0 | 0.299893 | 0.129199 | 0.067391 | 0.085257 | 0.011044 | 0.103348 | 0.006747 | 0.008658 | 0.012946 | 0.071139 | 0.04695 | 0.102168 | 0.055257 |
| ViraMiner | 3 | 3 | 0.024574 | 0.129199 | 0.107996 | 0.49411 | 0.05682 | 0.103346 | 0.006747 | 0.00658 | 0.012946 | 0.011098 | 0.04693 | 0.102166 | 0.033237 |
| MetaShot | 3 | 3 | 0.024374 | 0.442248 | 0.02294 | 0.49411 | 0.001294 | 0.008801 | 0.386276 | 0.00418 | 0.007603 | 0.021219 | 0.002797 | 0.00414 | 0.002946 |
| SPACE-LongRead | 5 | 5 | 0.02788 | 0.442248 | 0.02294 | 0.076549 | 0.001294 | 0.419516 | 0.366276 | 0.000454 | 0.002359 | 0.021219 | 0.002797 | 0.066608 | 0.136594 |
| CSN CSN | 9 | 5 | 0.073771 | 0.03802 | 0.020693 | 0.05866 | 0.019236 | 0.419516 | 0.107307 | 0.013164 | 0.019172 | 0.027793 | 0.051735 | 0.007697 | 0.136594 |
| | - | 5 | | | | | | | | | | | | | |
| FQC | 8 | 8 | 0.018295 | 0.003493 | 0.03131 | 0.006887 | 0.012886 | 0.004215 | 0.012055 | 0.003395 | 0.621761 | 0.00611 | 0.013472 | 0.227784 | 0.038336 |
| PhiSpy | 2 | 2 | 0.012001 | 0.107386 | 0.324154 | 0.239527 | 0.001746 | 0.067842 | 0.158637 | 0.000893 | 0.001356 | 0.034314 | 0.040152 | 0.005248 | 0.006743 |
| DeepVariant | 10 | 5 | 0.018621 | 0.062569 | 0.030521 | 0.044119 | 0.133169 | 0.22878 | 0.062225 | 0.038028 | 0.017841 | 0.008387 | 0.202984 | 0.113721 | 0.039035 |