A: Datasheet

Algorithm: innovatrics_4

Developer: Innovatrics

Submission Date: 2018_10_30

Template size: 1076 bytes

Template time (2.5 percentile): 396 msec

Template time (median): 399 msec

Template time (97.5 percentile): 440 msec

Investigation:

Frontal mugshot ranking 156 (out of 279) -- FNIR(1600000, 0, 1) = 0.0123 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 147 (out of 241) -- FNIR(1600000, 0, 1) = 0.0403 vs. lowest 0.0062 from sensetime_005

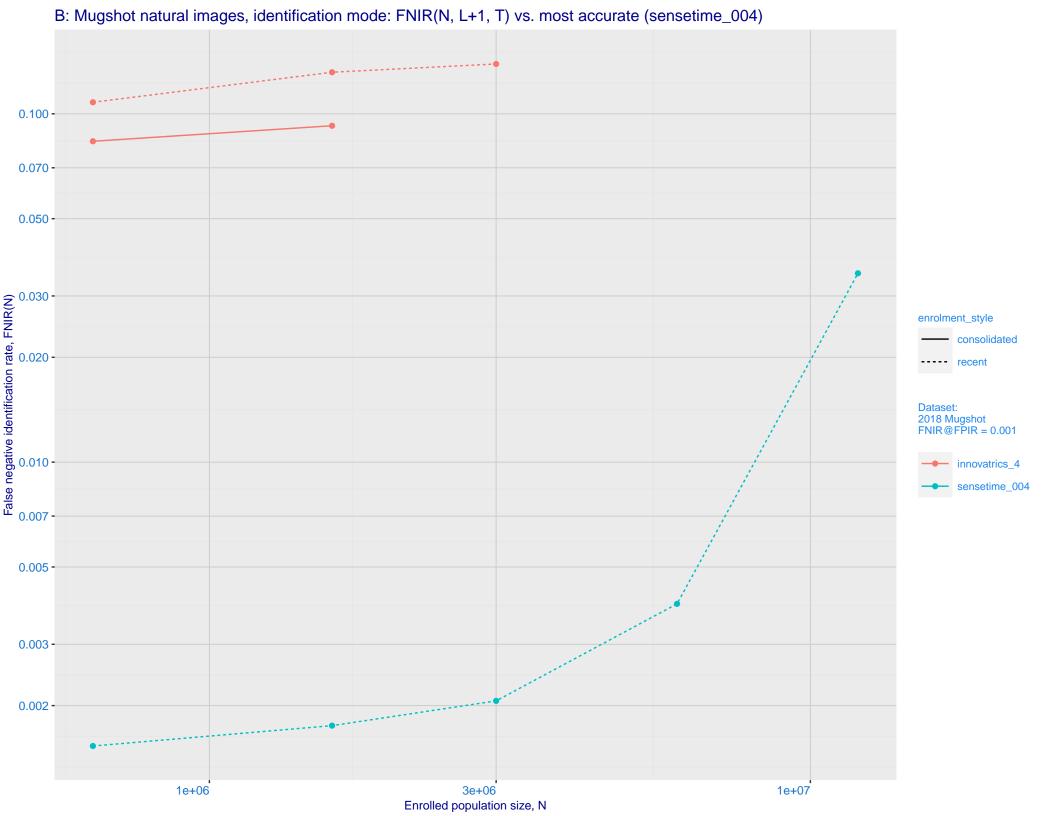
Mugshot profile ranking 164 (out of 210) -- FNIR(1600000, 0, 1) = 0.9578 vs. lowest 0.0587 from xforwardai_002

Identification:

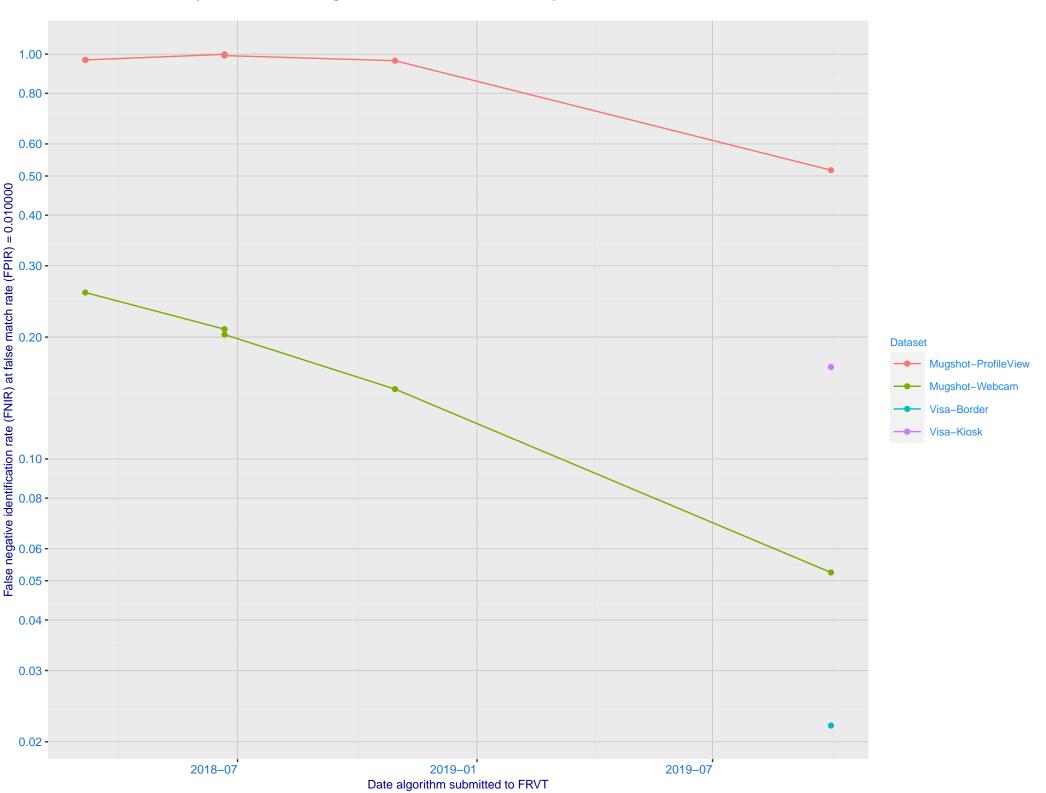
Frontal mugshot ranking 165 (out of 279) -- FNIR(1600000, T, L+1) = 0.1317, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 144 (out of 236) -- FNIR(1600000, T, L+1) = 0.2214, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 64 (out of 209) -- FNIR(1600000, T, L+1) = 0.9804, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000

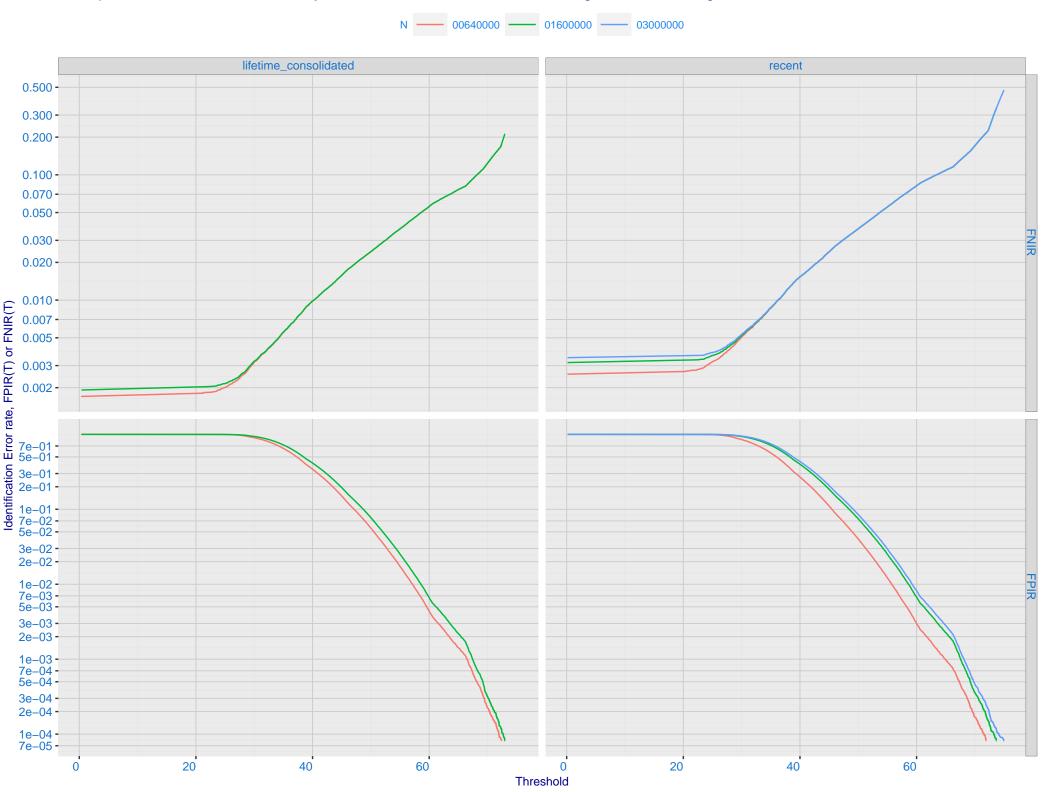


C: Evolution of accuracy for INNOVATRICS algorithms on three datasets 2018 – present

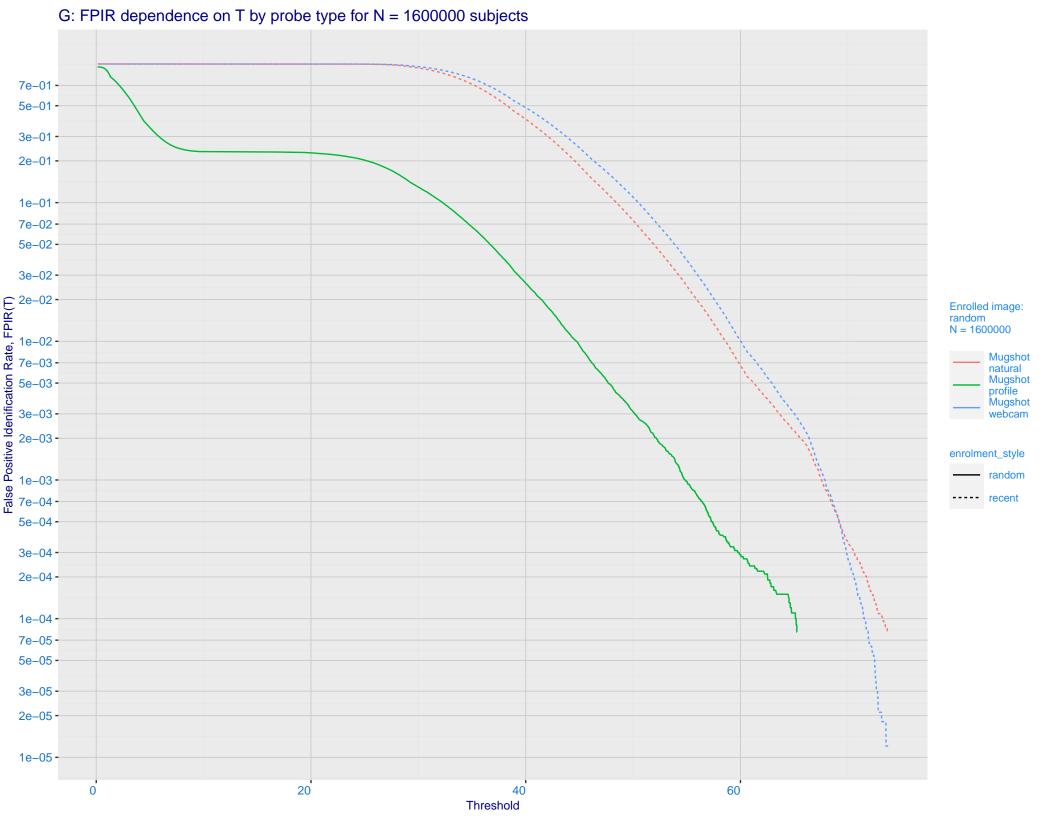


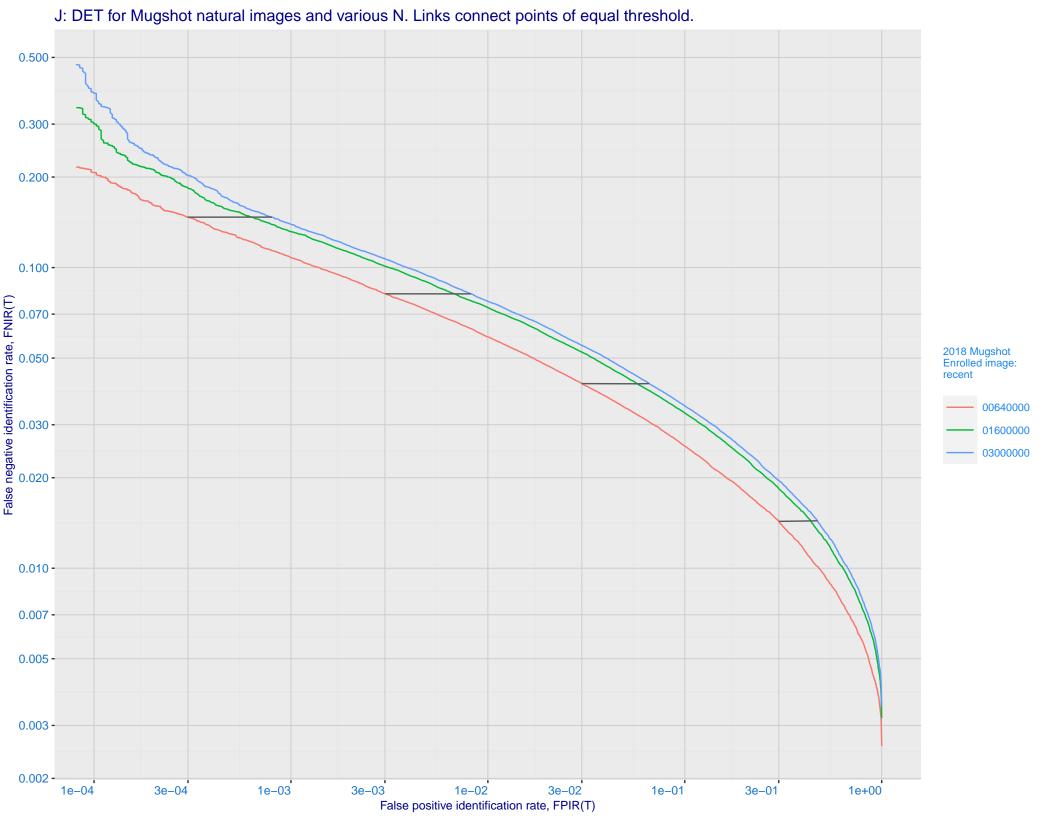
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration** Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.000 - 0.500 - 0.500 - 0.200 - 0.100 - 0. enrolment_style consolidated-ONE-MATE random-ONE-MATE recent-ONE-MATE unconsolidated-ALL-MATES unconsolidated-ANY-MATE 0.070 -0.050 sensetime 004 0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -

E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images

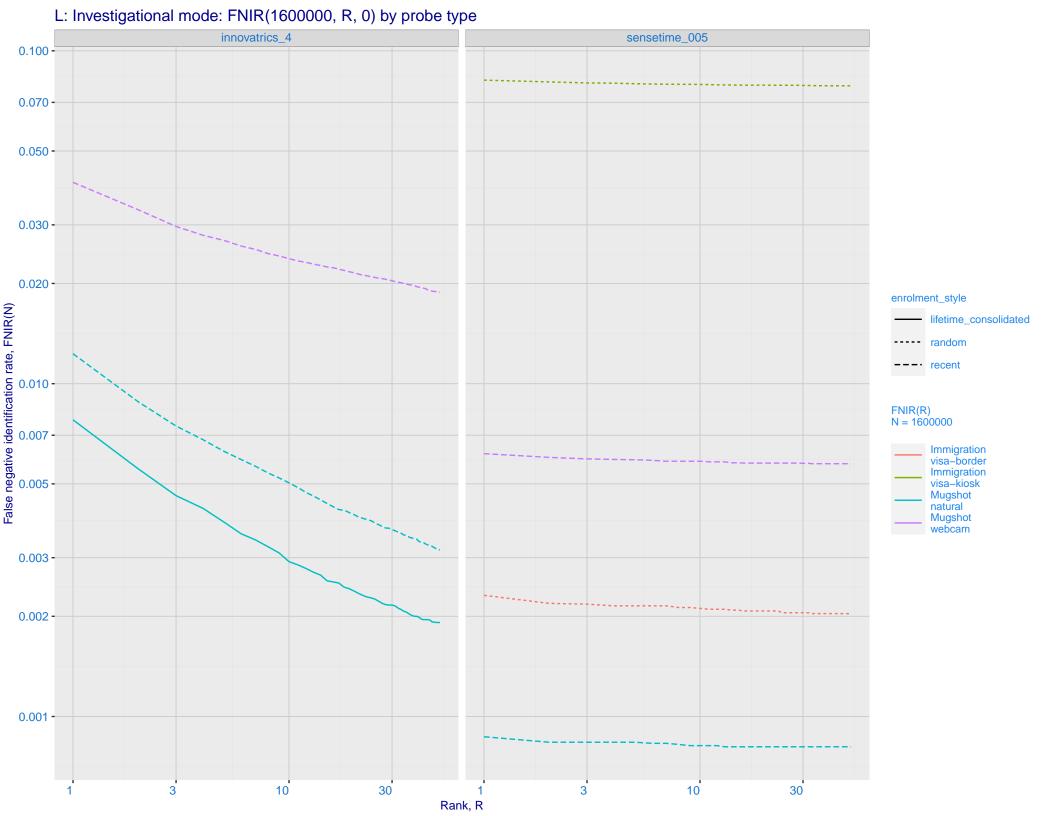


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 -7e-02 -5e-02 -3e-02 -3e-02 -1e-02 -**Enrolled images:** recent N = 1600000 Mugshot natural Mugshot webcam 7e-03 -5e-03 -3e-03 -2e-03 -1e-03 -7e-04 -5e-04 -3e-04 -2e-04 -1e-04 -7e-05 -5e-05 -3e-05 -2e-05 -1e-05 -1e-05 3e-05 1e-04 3e-04 1e-03 3e-03 1e-02 3e-02 1e-01 3e-01 False Positive Idenification Rate, FPIR(T)

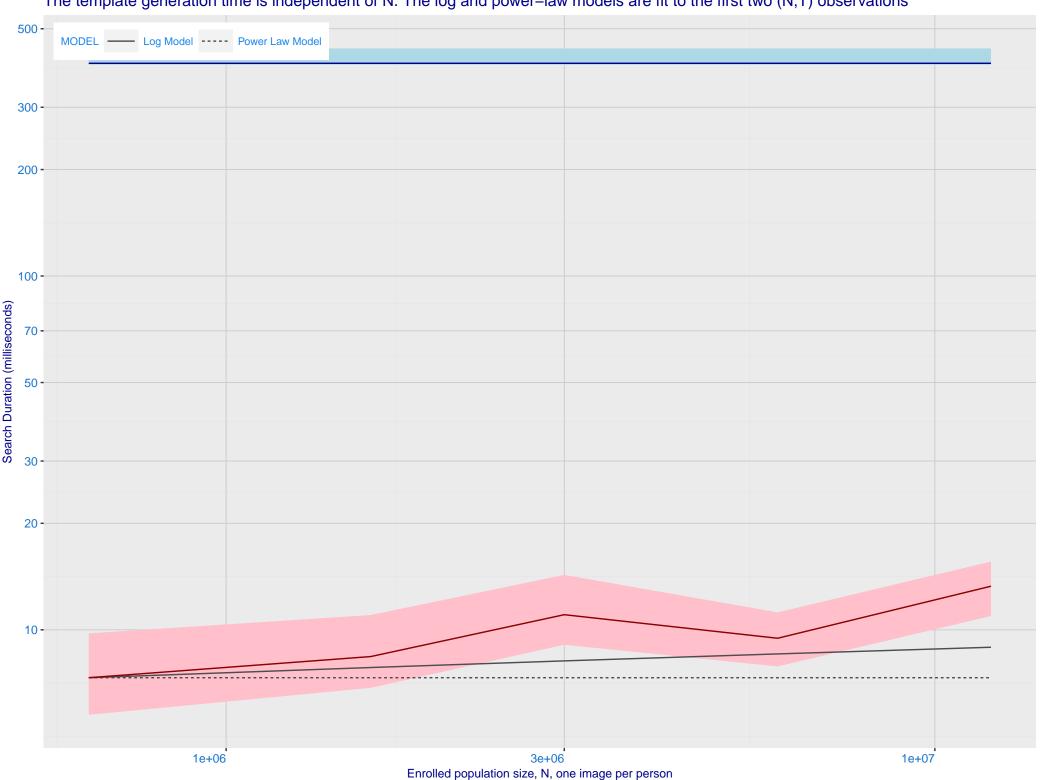




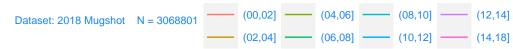
K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.100 0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -Ealse negative identification rate, FNIR(N) 0.002 - 0.001 - 0.000 - 0.050 - 0.050 - 0.030 - 0. enrolment_style consolidated ---- random --- recent Mugshot Mugshot webcam natural FNIR@Rank = 1 innovatrics_4 sensetime_005 0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -1e+06 3e+06 1e+07 1e+06 3e+06 1e+07 Enrolled population size, N

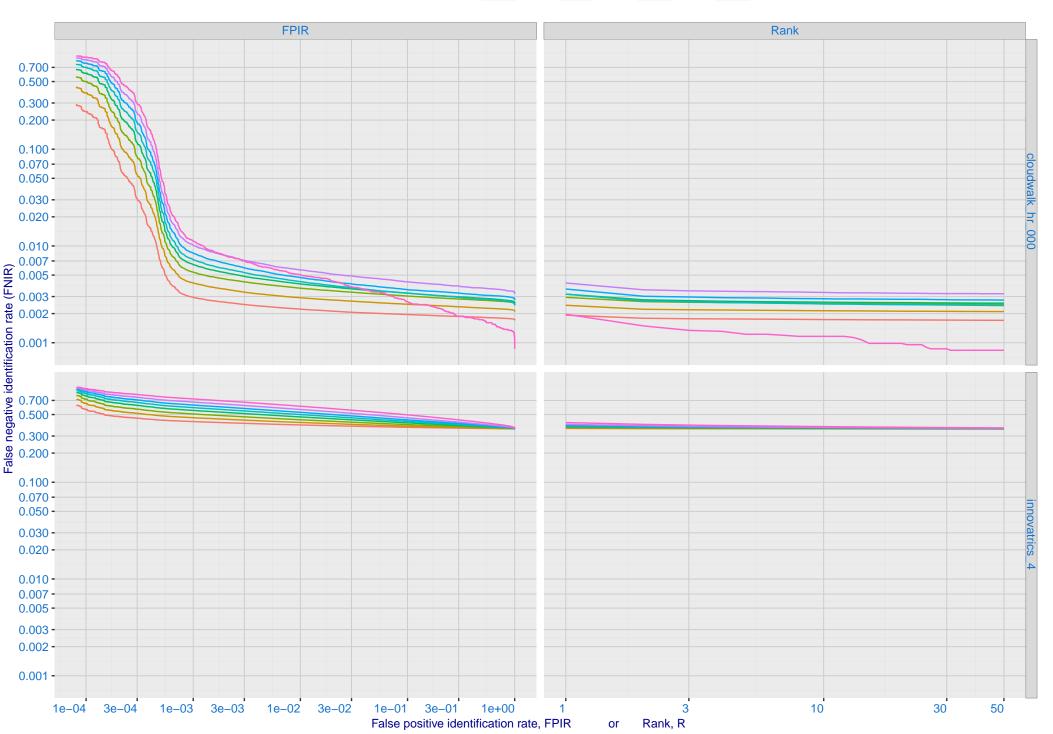


M: Template duration; search duration vs. N. The blue and pink ribbon covers 95 percent of observed measurements. The template generation time is independent of N. The log and power–law models are fit to the first two (N,T) observations



Q: Identification FNIR(N, T, L+1) and Investigational FNIR(N, 0, R) under ageing





R: Decline of genuine scores with ageing, with some eventually dropping below typical thresholds shown by the horizontal lines

