A: Datasheet

Algorithm: rankone_006

Developer: Rank One Computing

Submission Date: 2019_06_03

Investigation:

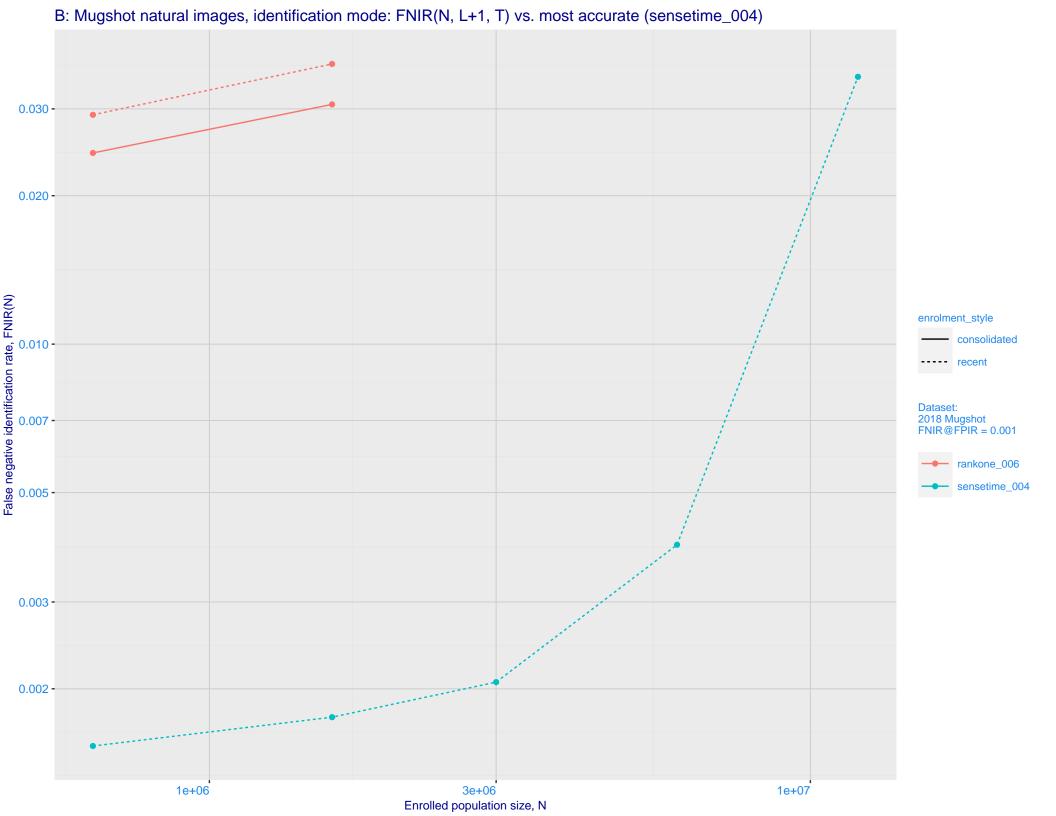
Frontal mugshot ranking 85 (out of 265) -- FNIR(1600000, 0, 1) = 0.0050 vs. lowest 0.0009 from sensetime_005

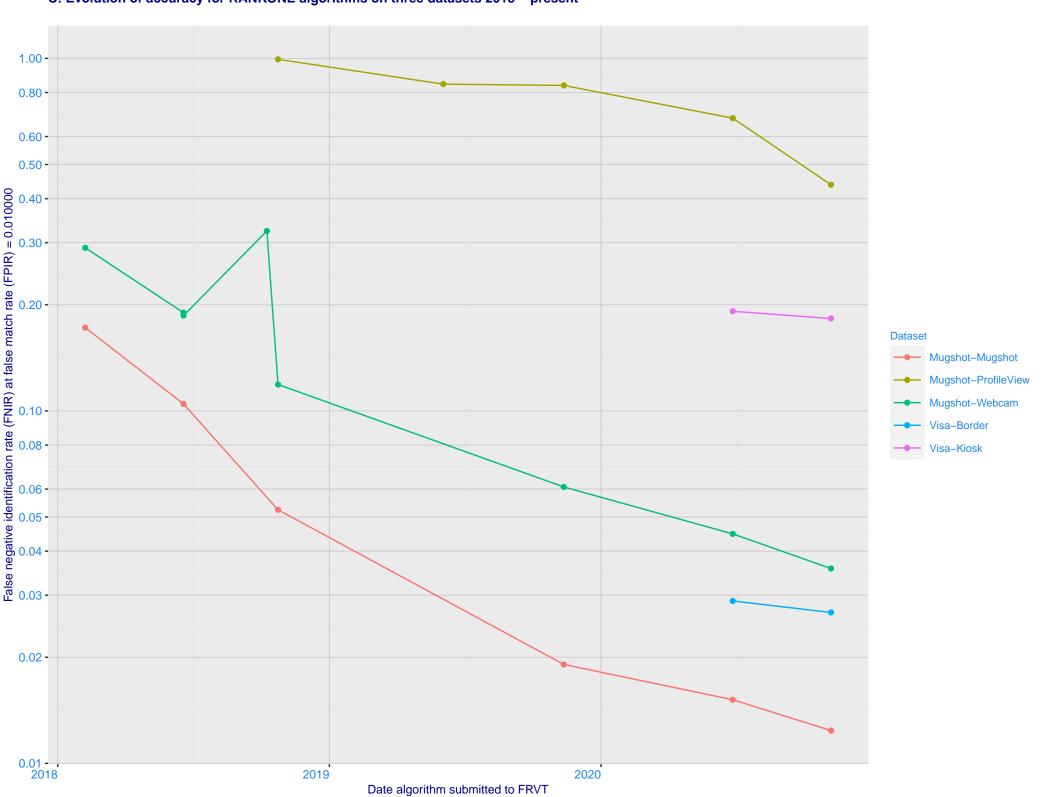
Mugshot profile ranking 95 (out of 196) -- FNIR(1600000, 0, 1) = 0.7972 vs. lowest 0.0591 from sensetime_005

Identification:

Frontal mugshot ranking 60 (out of 265) -- FNIR(1600000, T, L+1) = 0.0370, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

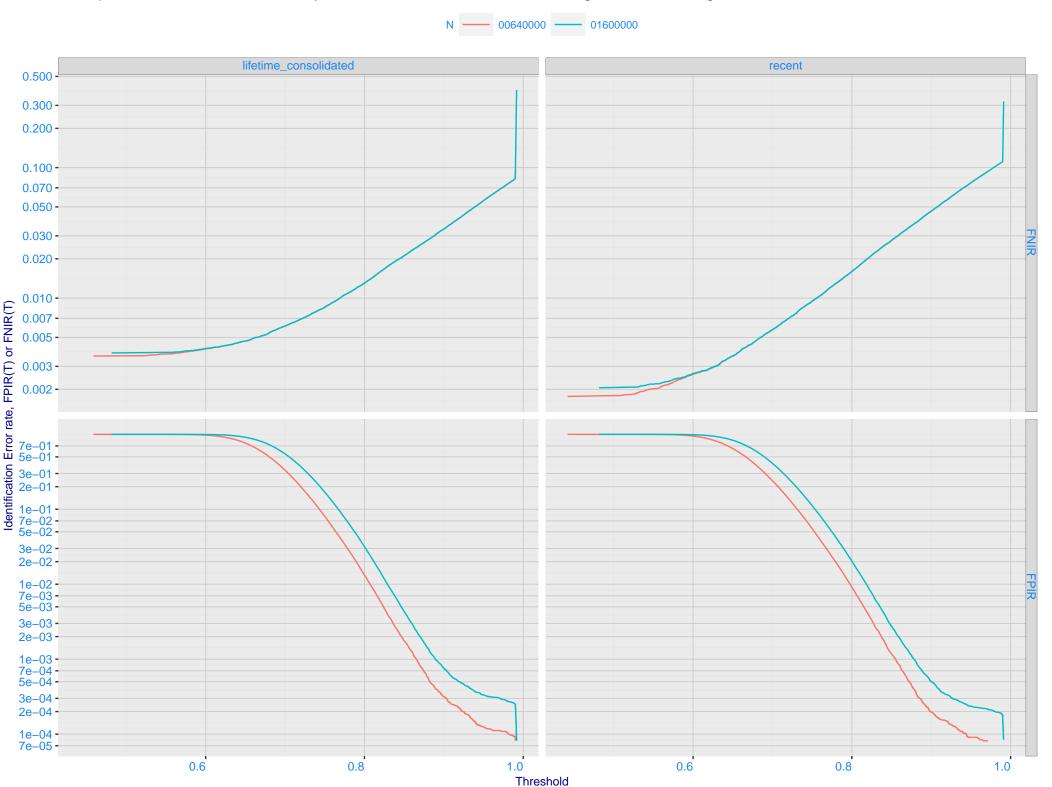
Mugshot profile ranking 53 (out of 195) -- FNIR(1600000, T, L+1) = 0.9771, FPIR=0.001000 vs. lowest 0.1331 from hr_000



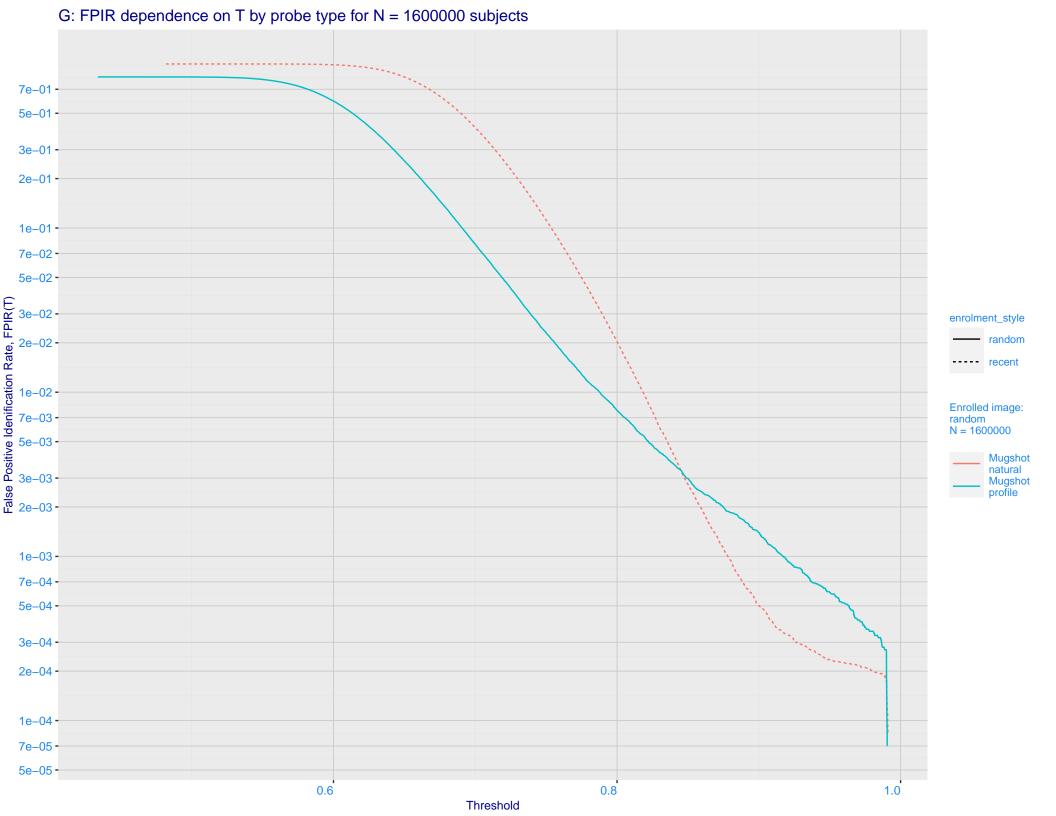


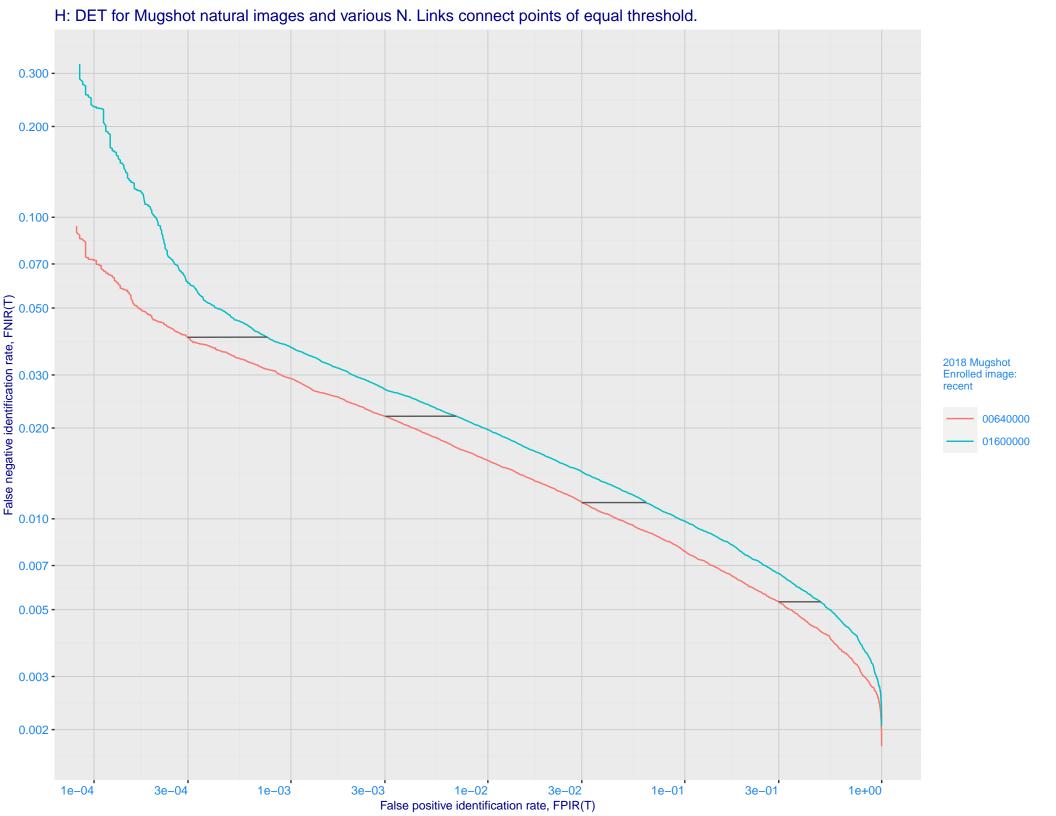
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration **Immigration** Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.0001 - 0.700 - 0.500 - 0.200 - 0.100 - 0 enrolment_style consolidated-ONE-MATE random-ONE-MATE recent-ONE-MATE unconsolidated-ALL-MATES unconsolidated-ANY-MATE 0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -

False positive identification rate, FPIR(T)

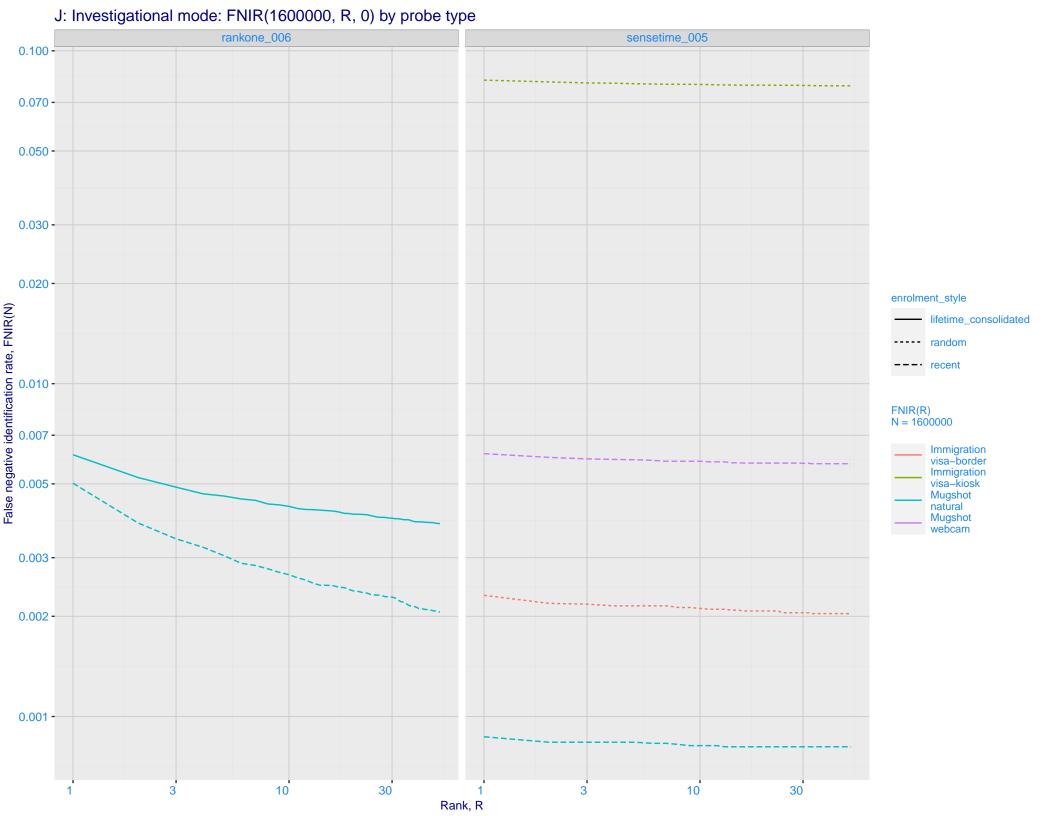


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -Selectivity, SEL(T) 1e-01 - 5e-02 - 5e-02 - 3e-02 -Enrolled images: recent N = 1600000 Mugshot natural 2e-02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





I: 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 - 0.030 - 0. enrolment_style consolidated ---- random --- recent Mugshot Mugshot webcam natural FNIR@Rank = 1 rankone_006 - 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



	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
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Search Duration (milliseconds)	
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	Enrolled population size, N, one image per person

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



