A: Datasheet

Algorithm: kneron_000

Developer: Kneron

Submission Date: 2020_03_03

Template size: 2048 bytes

Template time (2.5 percentile): 521 msec

Template time (median): 523 msec

Template time (97.5 percentile): 573 msec

Investigation:

Frontal mugshot ranking 147 (out of 329) -- FNIR(1600000, 0, 1) = 0.0059 vs. lowest 0.0009 from sensetime_006

Mugshot webcam ranking 163 (out of 291) -- FNIR(1600000, 0, 1) = 0.0273 vs. lowest 0.0057 from sensetime_006

Mugshot profile ranking 109 (out of 260) — FNIR(1600000, 0, 1) = 0.5518 vs. lowest 0.0550 from sensetime_006

Immigration visa-border ranking 143 (out of 218) -- FNIR(1600000, 0, 1) = 0.0284 vs. lowest 0.0009 from sensetime_006

Immigration visa-kiosk ranking 139 (out of 215) -- FNIR(1600000, 0, 1) = 0.1945 vs. lowest 0.0487 from cubox_000

Identification:

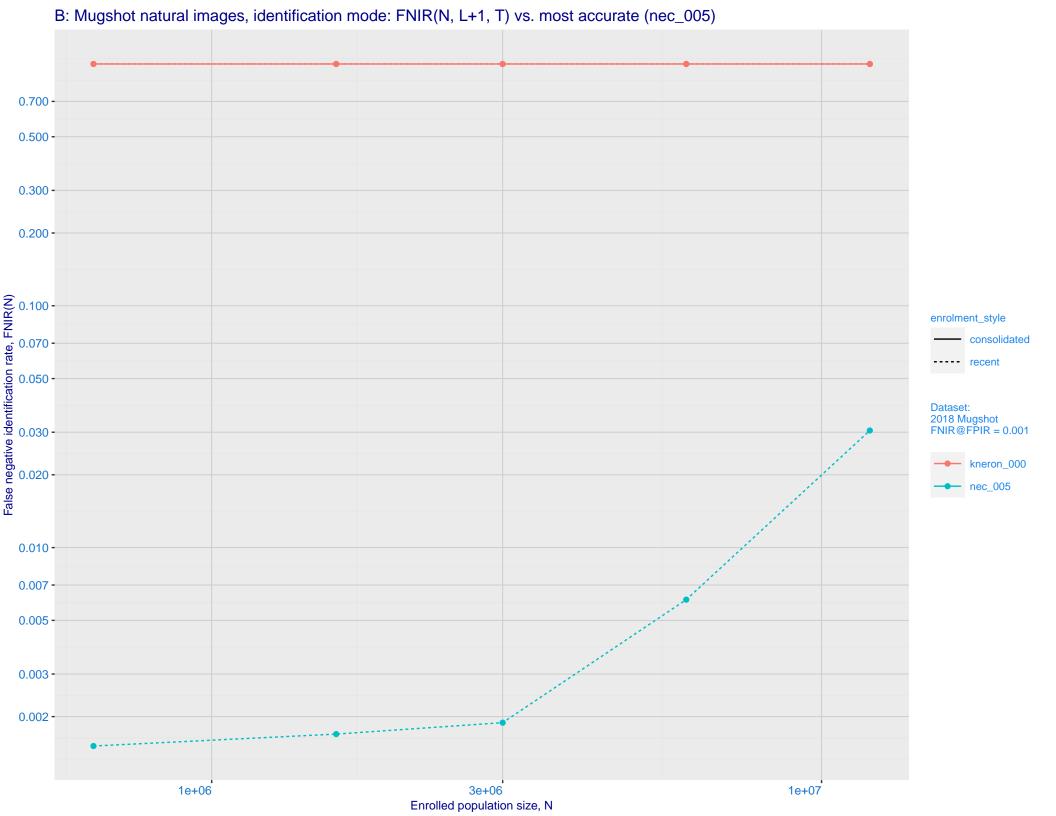
Frontal mugshot ranking 328 (out of 329) -- FNIR(1600000, T, L+1) = 0.9998, FPIR=0.001000 vs. lowest 0.0017 from nec_005

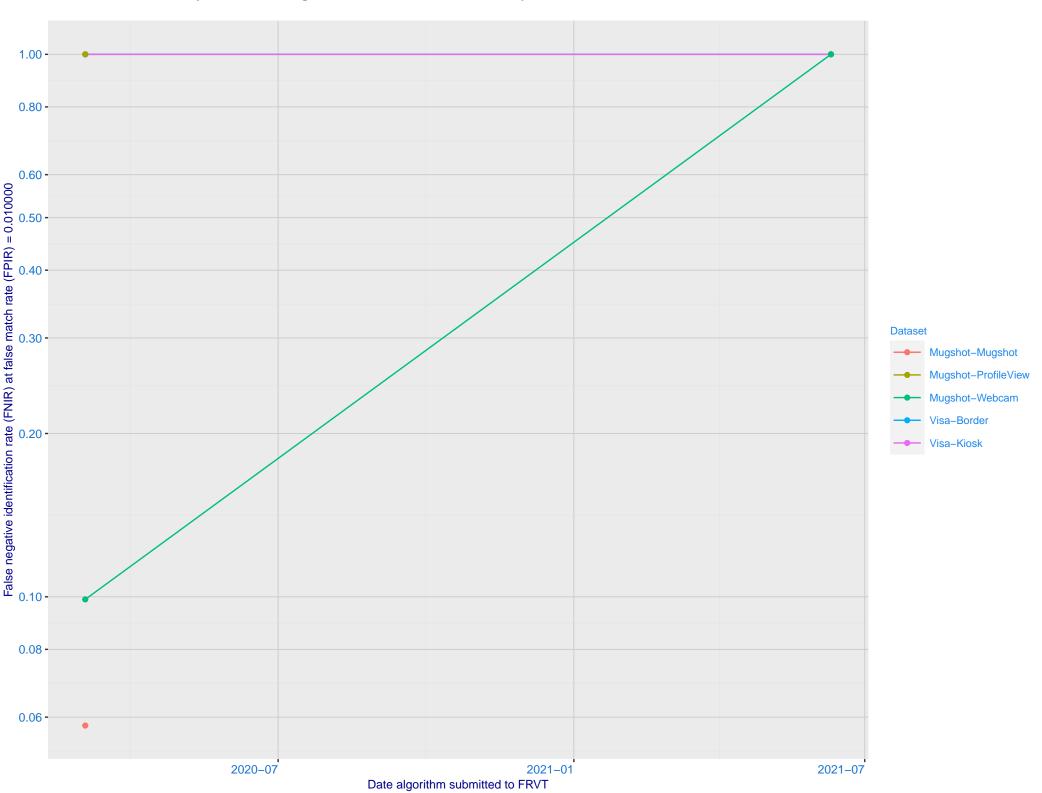
Mugshot webcam ranking 286 (out of 289) -- FNIR(1600000, T, L+1) = 1.0000, FPIR=0.001000 vs. lowest 0.0120 from nec_005

Mugshot profile ranking 248 (out of 259) -- FNIR(1600000, T, L+1) = 1.0000, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000

Immigration visa-border ranking 212 (out of 217) -- FNIR(1600000, T, L+1) = 1.0000, FPIR=0.001000 vs. lowest 0.0032 from paravision_009

Immigration visa-kiosk ranking 204 (out of 212) -- FNIR(1600000, T, L+1) = 1.0000, FPIR=0.001000 vs. lowest 0.0728 from paravision_009

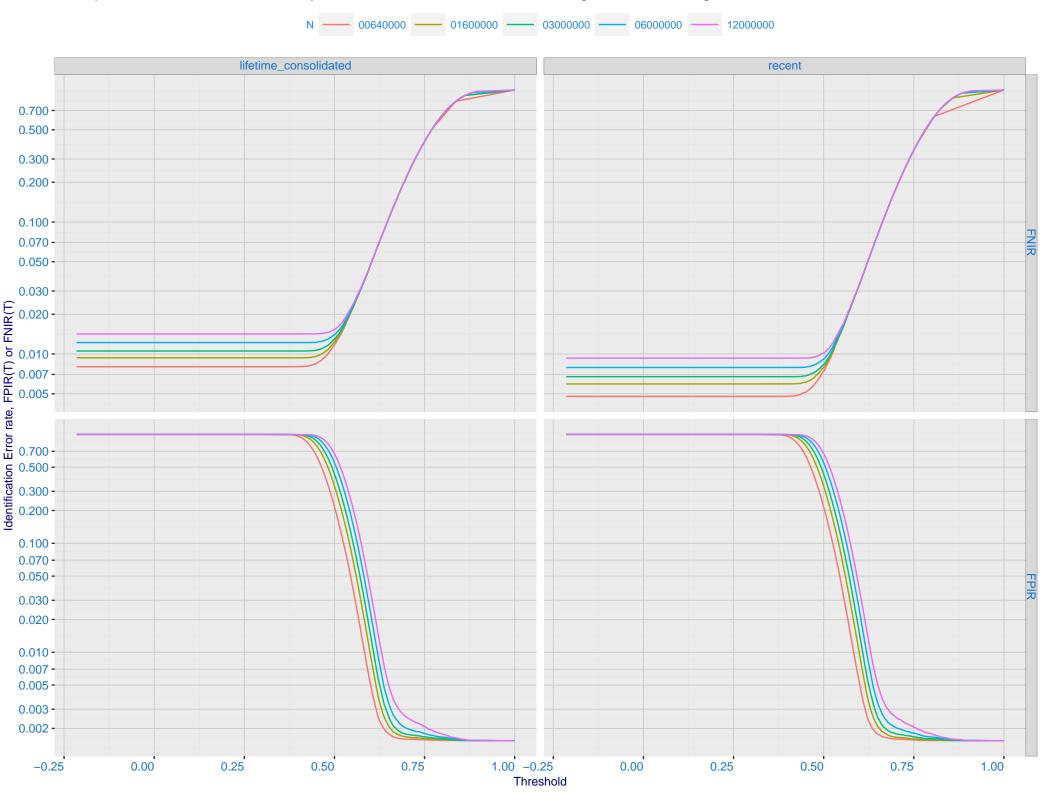




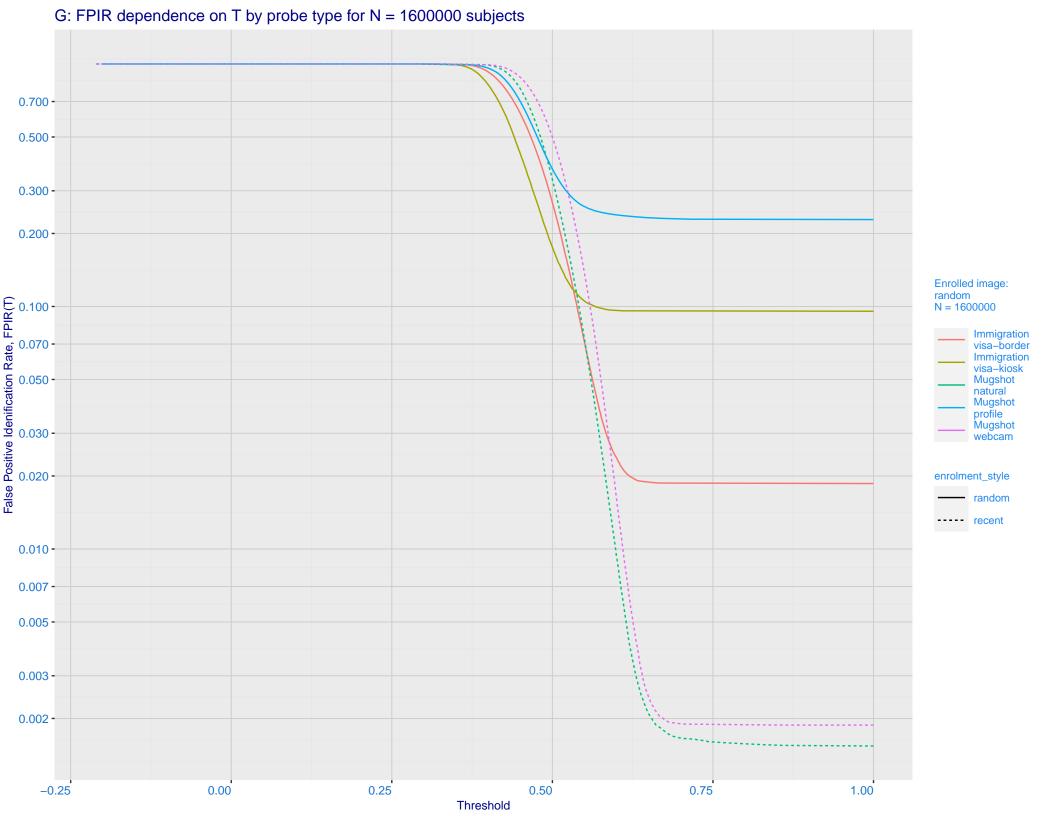
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration **Immigration** Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -Co.007 - 0.005 - 0.005 - 0.002 - 0.001 - 0.001 - 0.500 - 0.500 - 0.200 enrolment_style consolidated-ONE-MATE random-ONE-MATE recent-ONE-MATE unconsolidated-ALL-MATES unconsolidated-ANY-MATE 0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -

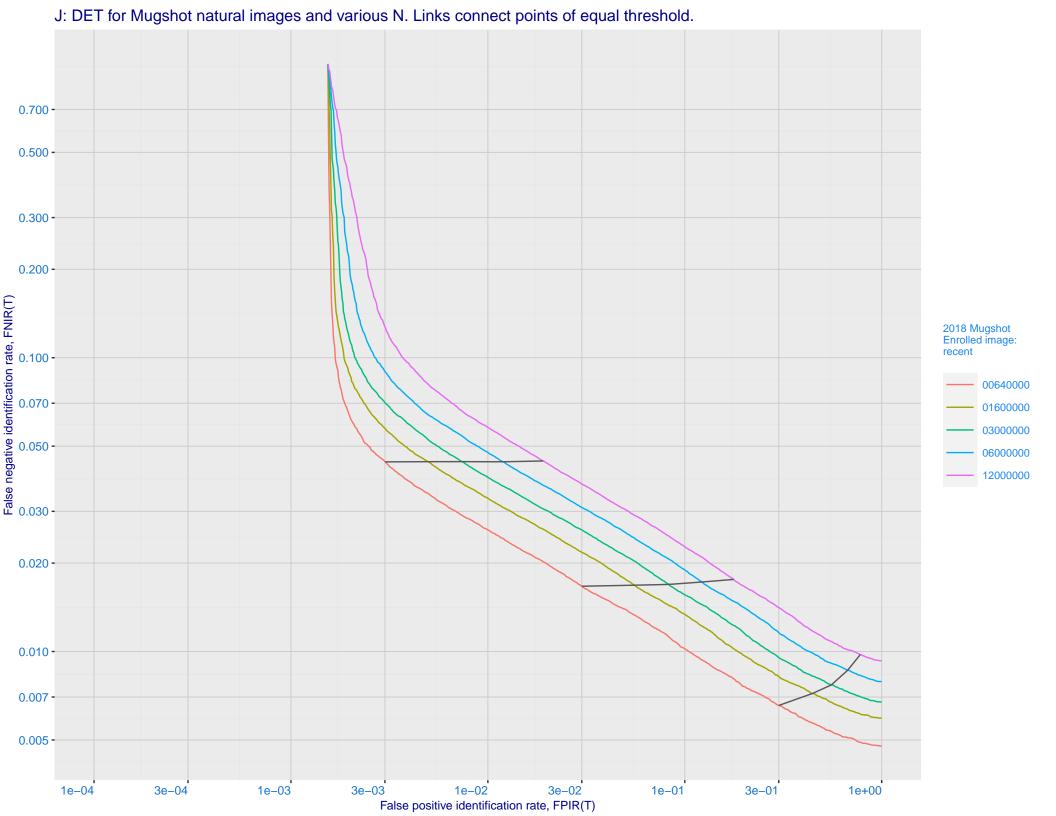
False positive identification rate, FPIR(T)

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 -Selectivity, SEL(T) 3e-01 -3e-01 -2e-01 -**Enrolled images:** recent N = 1600000 Mugshot natural Mugshot webcam 1e-01 -7e-02 -5e-02 -3e-02 -2e-02 -1e-02 -7e-03 -5e-03 -3e-03 -2e-03 -1e-03 -0.003 0.010 0.030 0.100 0.300 False Positive Idenification Rate, FPIR(T)

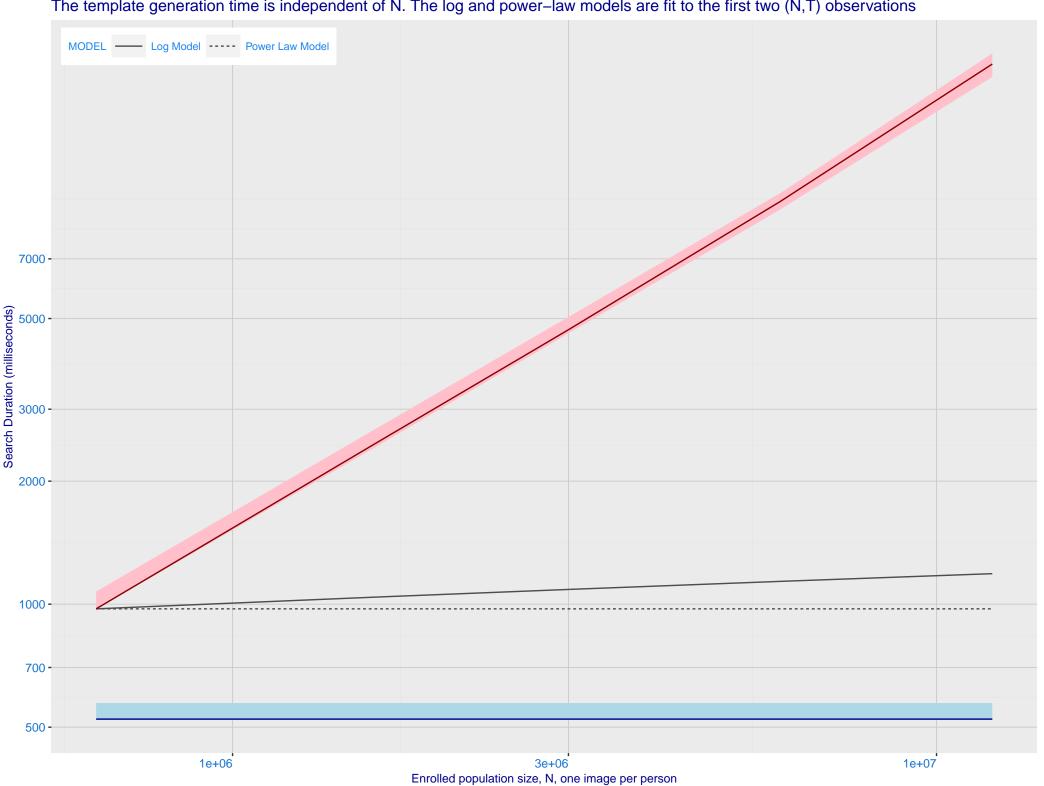




K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_006) Immigration **Immigration** visa-border visa-kiosk 0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Ealse negative identification rate, FNIR(N) 0.003 - 0.001 - 0.001 - 0.200 - 0.100 - 0.050 - 0. enrolment_style consolidated ---- random --- recent Mugshot webcam Mugshot natural FNIR@Rank = 1 hneron_000 sensetime_006 0.030 -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

L: Investigational mode: FNIR(1600000, R, 0) by probe type kneron_000 sensetime_006 0.200 -0.100 -0.070 -0.050 -0.030 enrolment_style False negative identification rate, FNIR(N) 0.000 - 0. lifetime_consolidated ---- random --- recent FNIR(R) N = 1600000 Immigration visa-border Immigration visa-kiosk Mugshot natural Mugshot webcam 0.003 -0.002 -0.001 -10 30 3 10 30 Rank, R

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



