A: Datasheet

Algorithm: line_001

Developer: Line Corporation

Submission Date: 2021_11_21

Template size: 2048 bytes

Template time (2.5 percentile): 899 msec

Template time (median): 907 msec

Template time (97.5 percentile): 924 msec

Investigation:

Frontal mugshot ranking 11 (out of 318) -- FNIR(1600000, 0, 1) = 0.0011 vs. lowest 0.0009 from sensetime_006

Immigration visa-border ranking 11 (out of 206) -- FNIR(1600000, 0, 1) = 0.0018 vs. lowest 0.0009 from sensetime_006

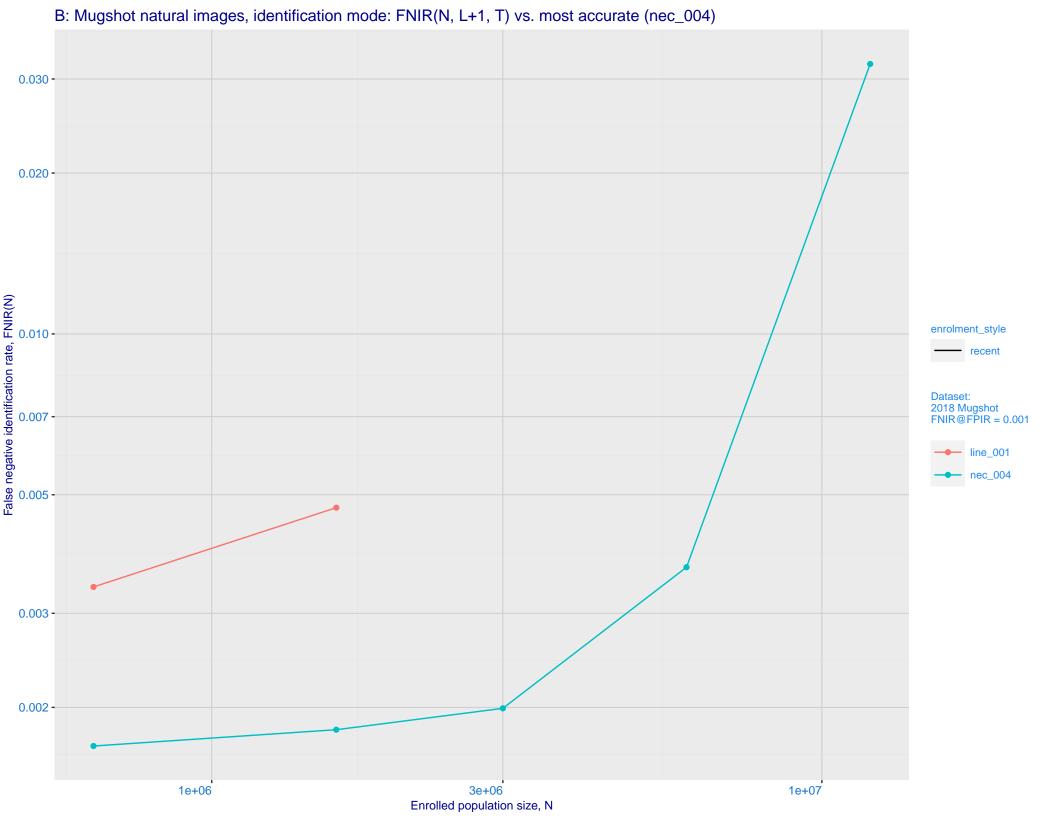
Immigration visa-kiosk ranking 37 (out of 203) -- FNIR(1600000, 0, 1) = 0.0854 vs. lowest 0.0487 from cubox_000

Identification:

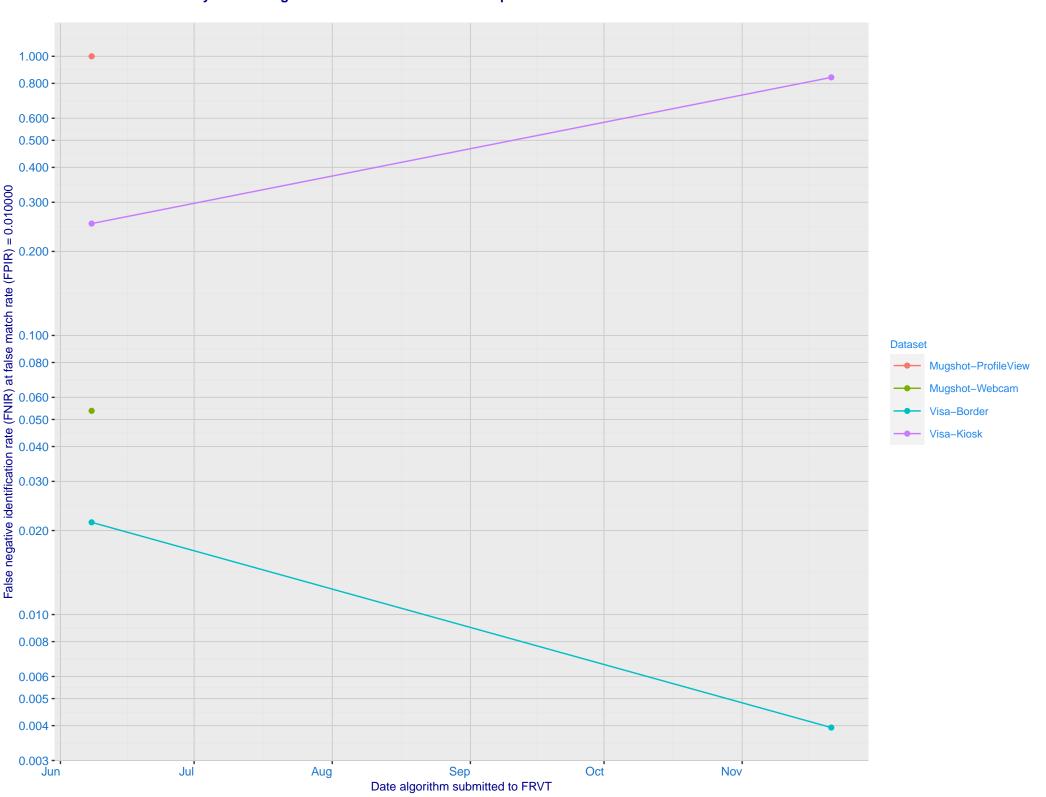
Frontal mugshot ranking 19 (out of 318) -- FNIR(1600000, T, L+1) = 0.0047, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Immigration visa-border ranking 22 (out of 205) -- FNIR(1600000, T, L+1) = 0.0087, FPIR=0.001000 vs. lowest 0.0039 from sensetime_006

Immigration visa-kiosk ranking 192 (out of 200) -- FNIR(1600000, T, L+1) = 1.0000, FPIR=0.001000 vs. lowest 0.0729 from cubox_000



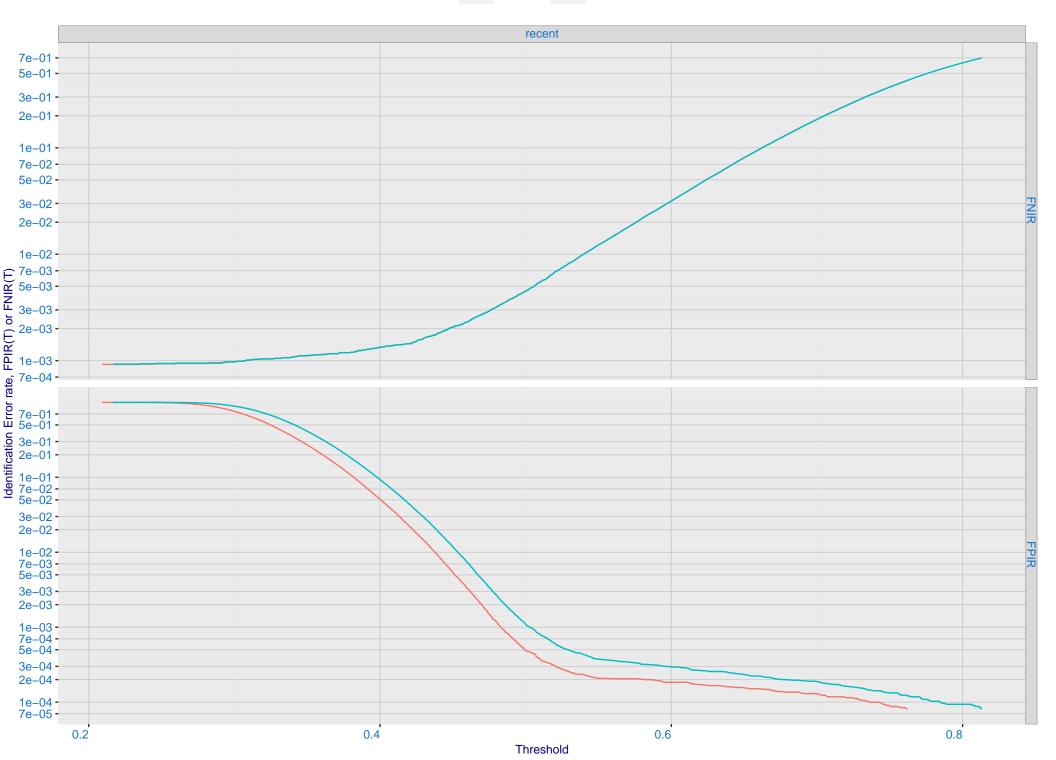
C: Evolution of accuracy for LINE algorithms on three datasets 2018 – present



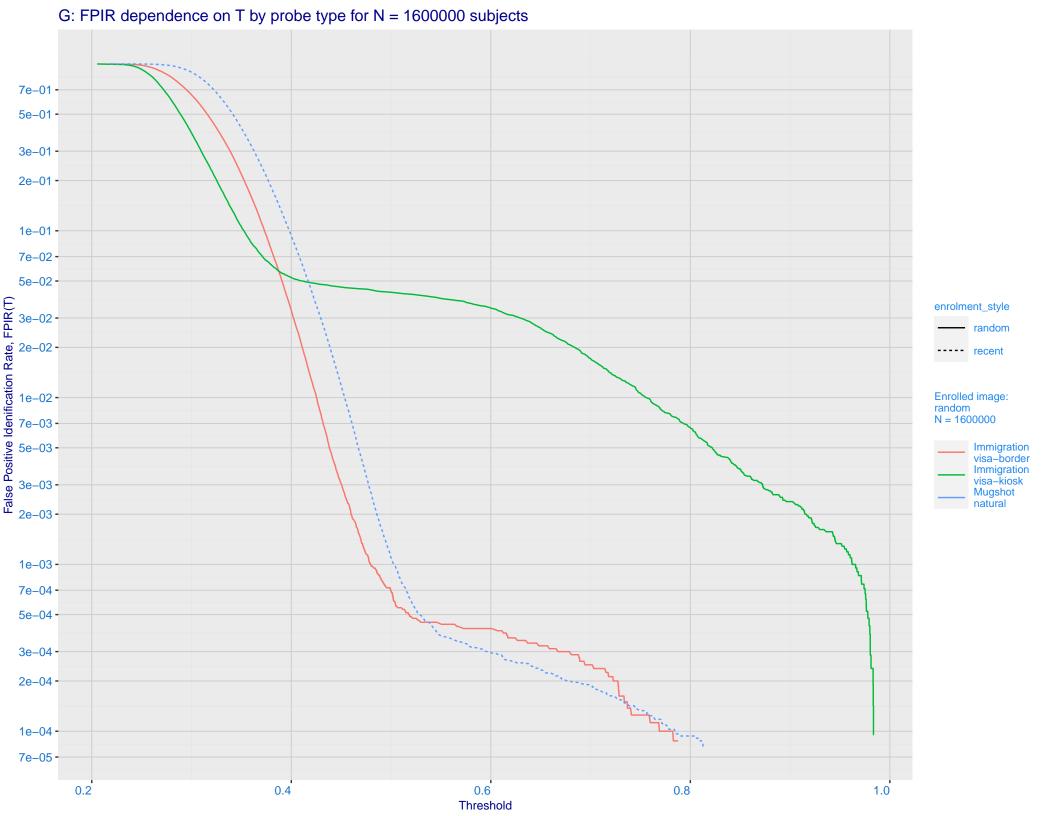
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 line 001 0.030 -0.020 -0.010 -0.007 - 0.005 - 0.005 - 0.002 - 0.001 - 0.001 - 0.700 - 0.500 - 0.200 enrolment_style random-ONE-MATE recent-ONE-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)

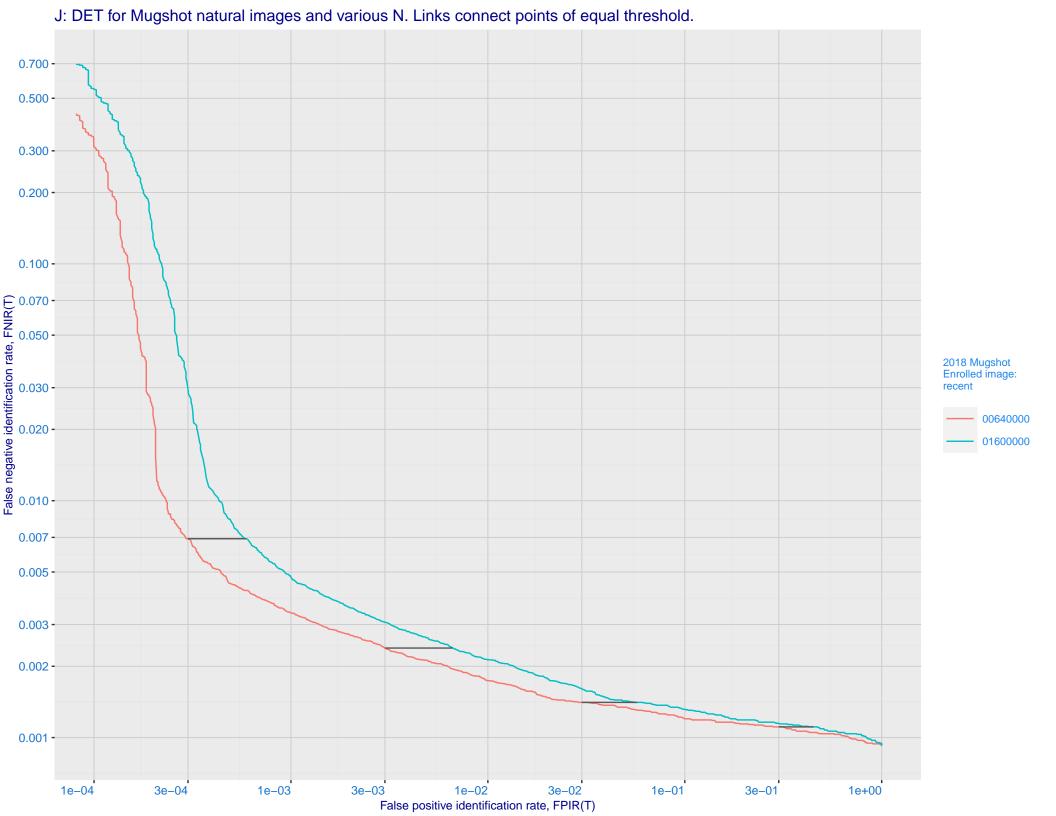
E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



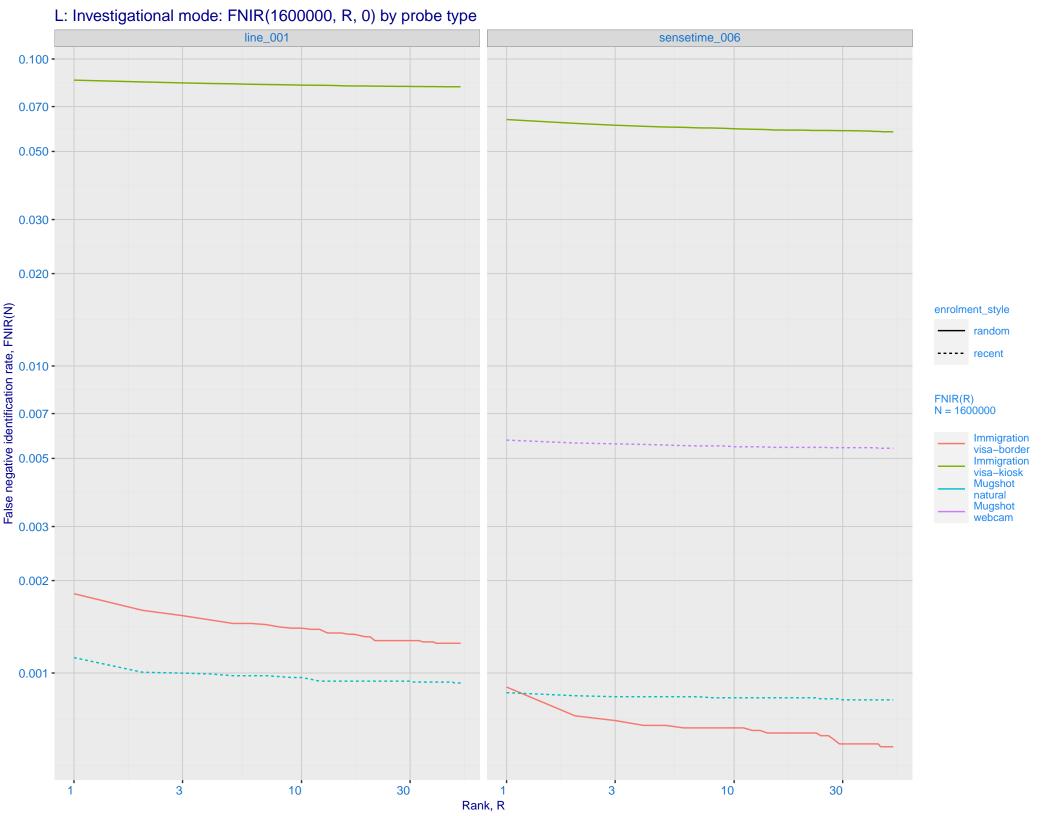


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -Selectivity, SEL(T) 5e-01 -5e-01 -3e-01 -2e-01 -Enrolled images: recent N = 1600000 Mugshot natural 1e-01 -7e-02 -5e-02 -3e-02 -2e-02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

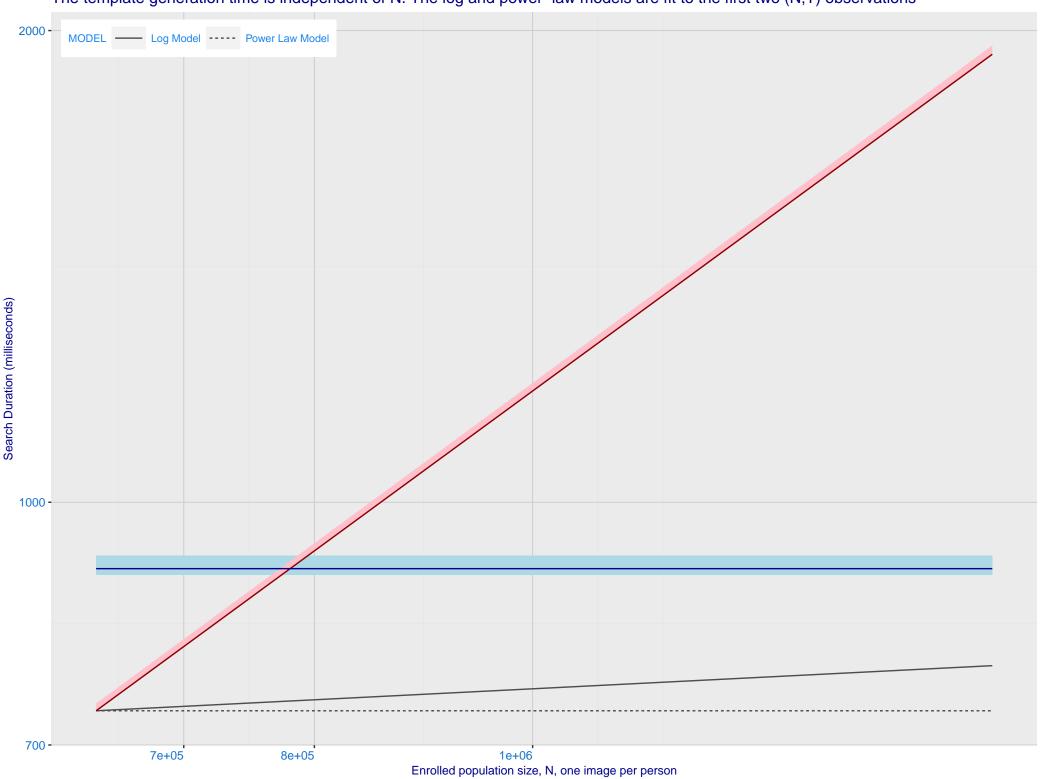




K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_006) Immigration **Immigration** visa-border visa-kiosk 0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -Ealse negative identification rate, FNIR(N) 0.002 - 0.001 - 0.000 - 0.050 - 0.030 - 0. FNIR@Rank = 1 — line_001 sensetime_006 Mugshot webcam Mugshot natural enrolment_style random ---- recent 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



