A: Datasheet

Algorithm: siat_2

Developer: Shenzhen Inst Adv Integrated Tech CAS

Submission Date: 2018_02_30

Template size: 2052 bytes

Template time (2.5 percentile): 842 msec

Template time (median): 900 msec

Template time (97.5 percentile): 981 msec

Investigation:

Frontal mugshot ranking 25 (out of 279) -- FNIR(1600000, 0, 1) = 0.0018 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 223 (out of 241) -- FNIR(1600000, 0, 1) = 0.4457 vs. lowest 0.0062 from sensetime_005

Immigration visa-border ranking 143 (out of 168) -- FNIR(1600000, 0, 1) = 0.3481 vs. lowest 0.0013 from visionlabs_010

Immigration visa-kiosk ranking 34 (out of 165) -- FNIR(1600000, 0, 1) = 0.1019 vs. lowest 0.0568 from cloudwalk_hr_000

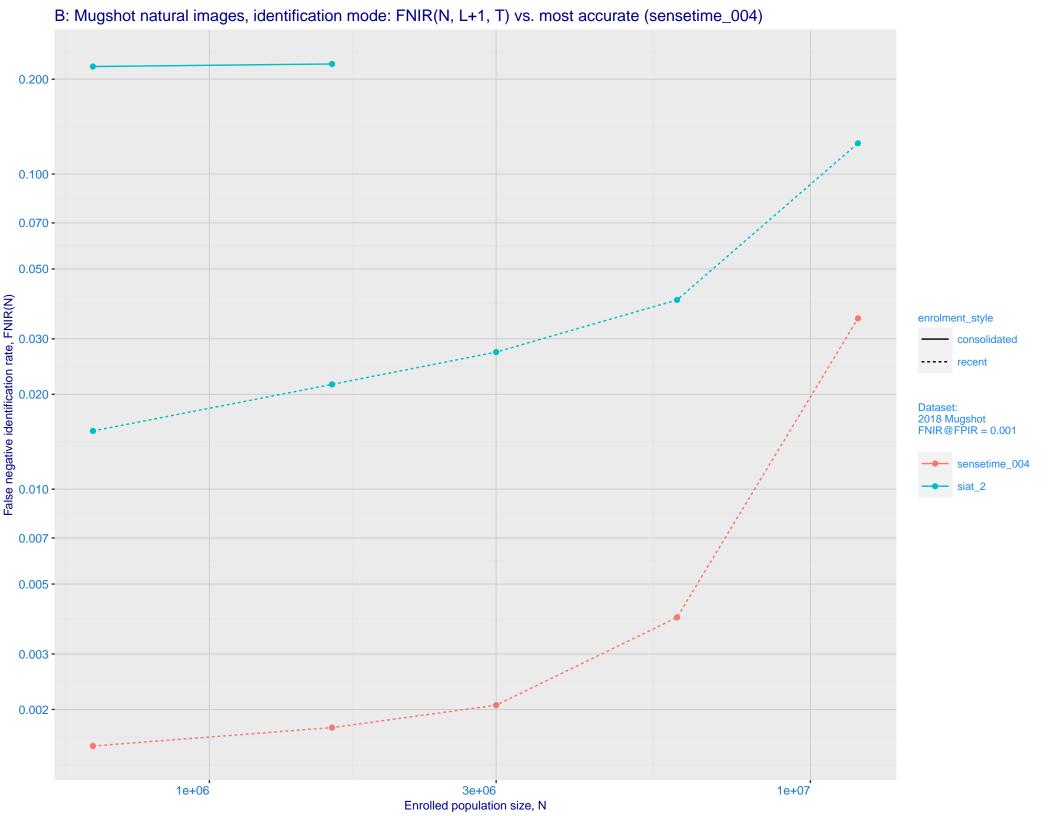
Identification:

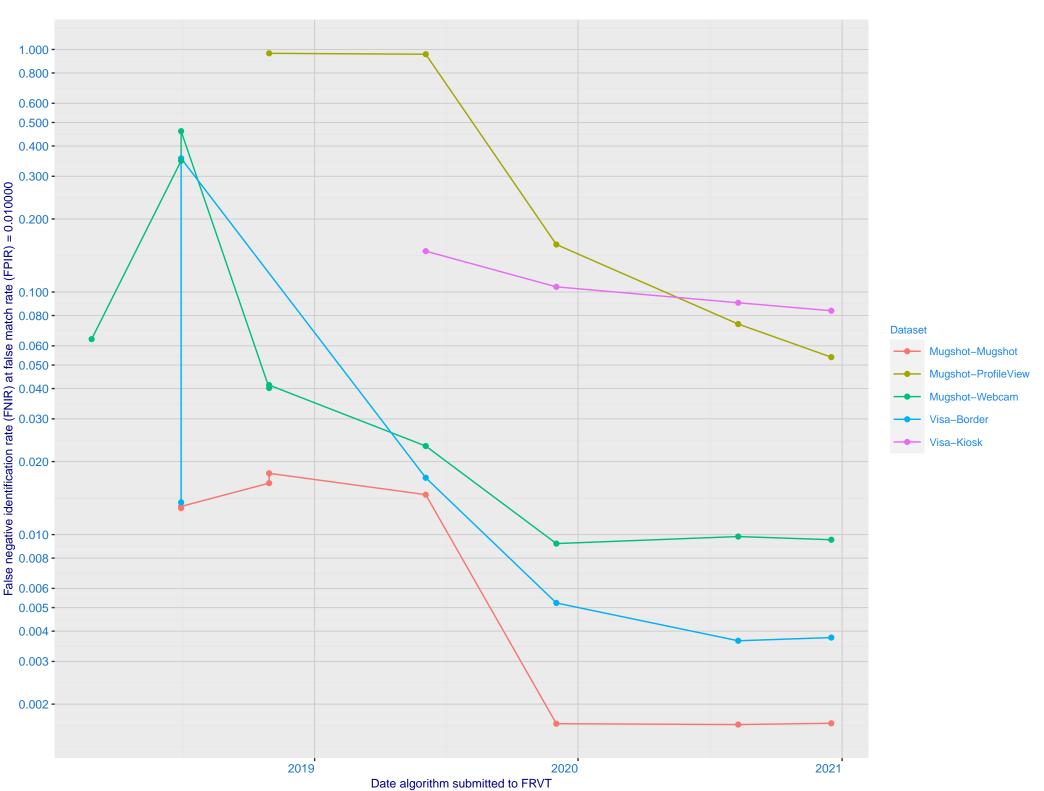
Frontal mugshot ranking 43 (out of 279) -- FNIR(1600000, T, L+1) = 0.0215, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 191 (out of 236) -- FNIR(1600000, T, L+1) = 0.4777, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Immigration visa-border ranking 112 (out of 167) -- FNIR(1600000, T, L+1) = 0.3725, FPIR=0.001000 vs. lowest 0.0047 from idemia_008

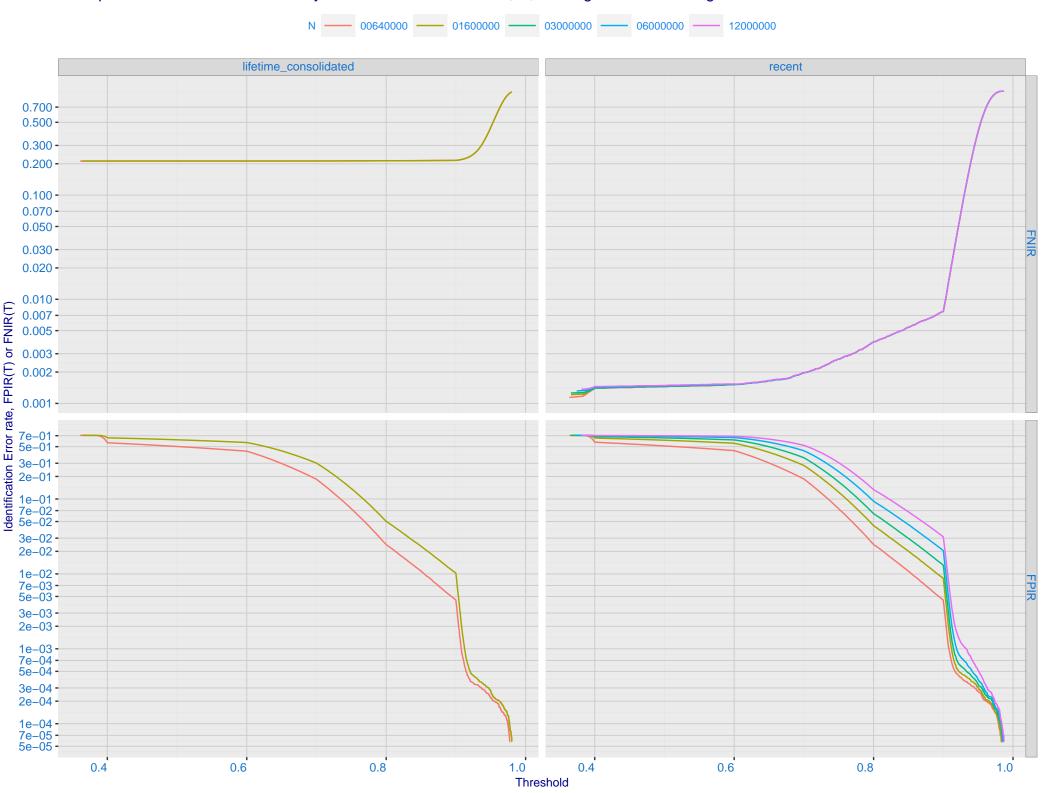
Immigration visa-kiosk ranking 119 (out of 162) -- FNIR(1600000, T, L+1) = 0.9237, FPIR=0.001000 vs. lowest 0.0996 from cloudwalk_hr_000



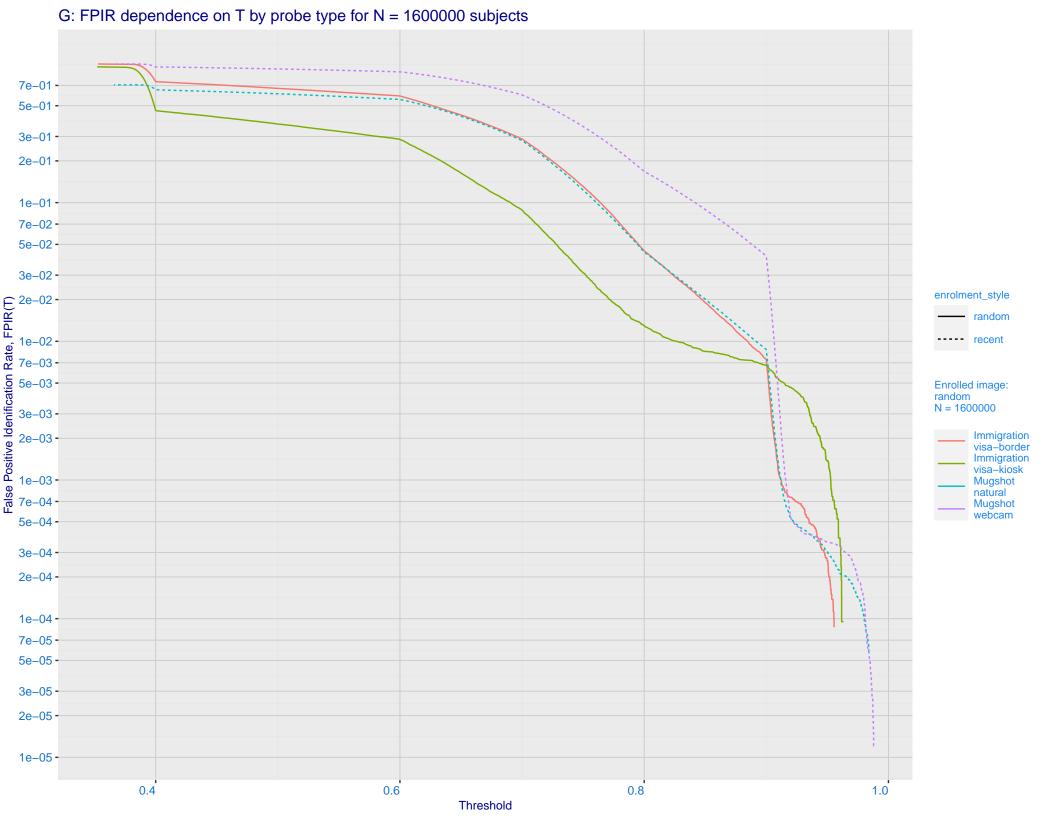


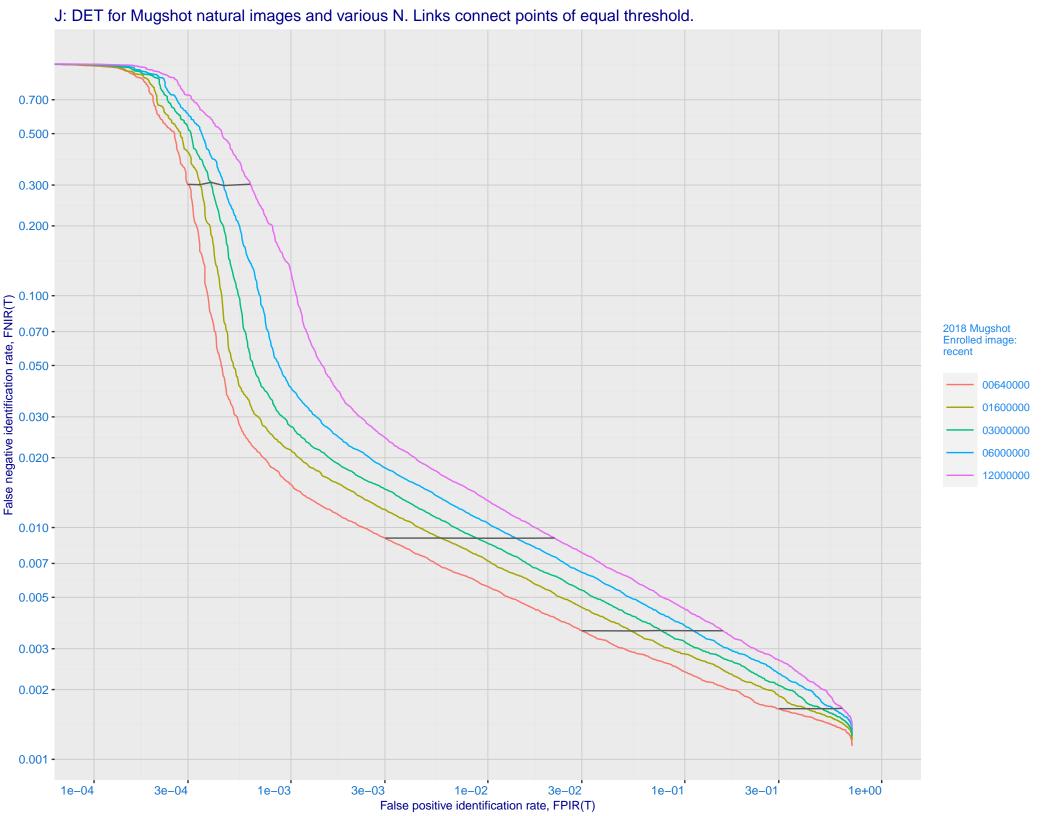
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration** Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 - 0.005 - 0.005 - 0.002 - 0.001 - 0.001 - 0.500 - 0.300 - 0.200 enrolment_style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

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 - 7e-02 - 3e-02 - 2e-02 - 2e-02 - 3e-02 **Enrolled images:** recent N = 1600000Mugshot natural Mugshot webcam 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 -3e-05 -2e-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)

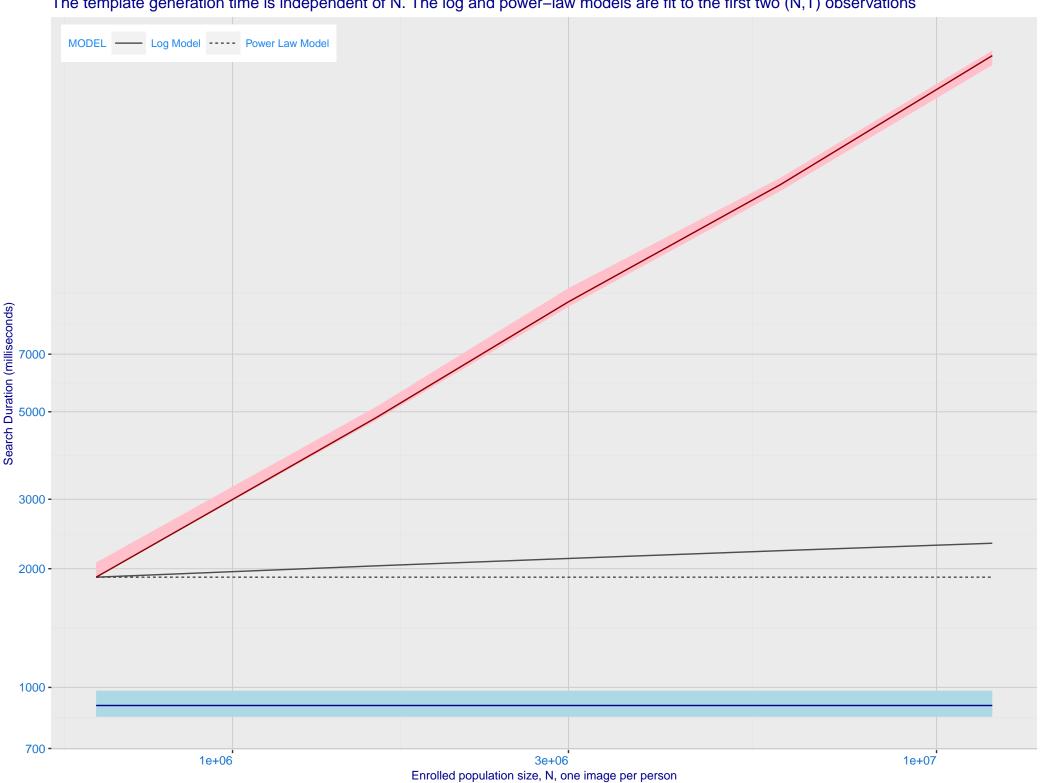




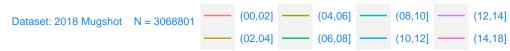
K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Ealse negative identification rate, FNIR(N) 0.002 - 0.001 - 0.500 - 0.200 - 0.100 - 0. enrolment_style • consolidated ---- random --- recent Mugshot Mugshot webcam natural FNIR@Rank = 1 sensetime_005 siat_2 0.070 -0.050 -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

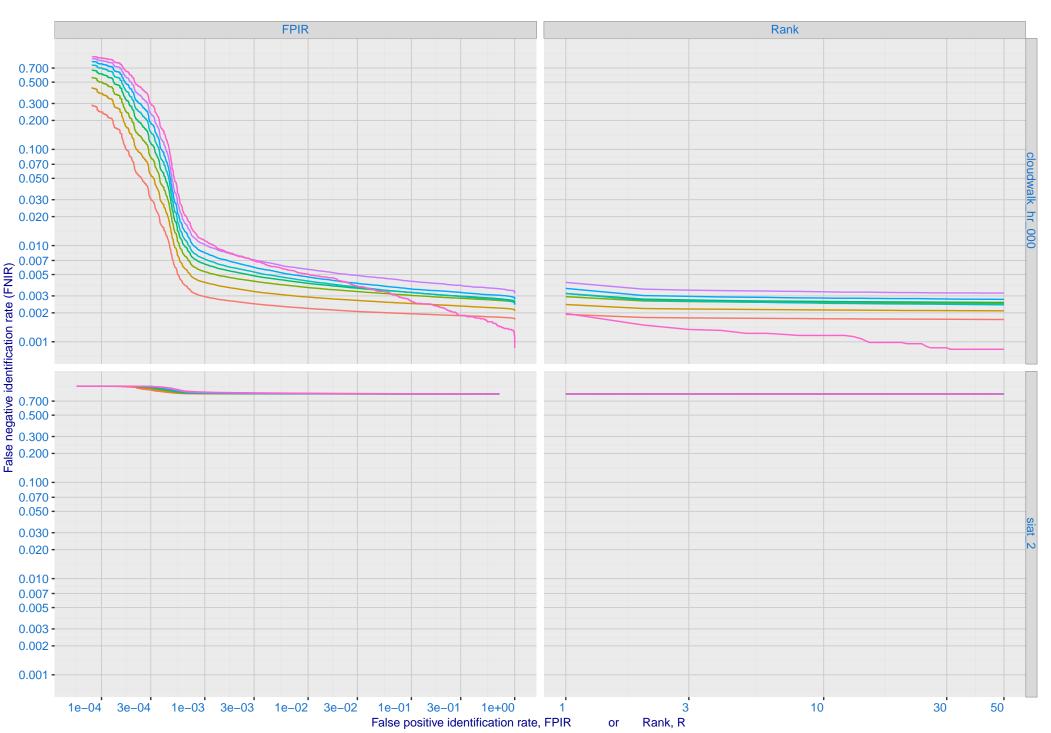
L: Investigational mode: FNIR(1600000, R, 0) by probe type sensetime_005 siat_2 0.500 -0.300 -0.200 -0.100 -0.070 enrolment_style Ealse negative identification rate, FNIR(N) 0.000 - 0. lifetime_consolidated ---- random --- recent FNIR(R) N = 1600000 Immigration visa-border Immigration visa-kiosk Mugshot natural Mugshot webcam 0.005 -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





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

