## A: Datasheet

Algorithm: dahua\_0

Developer: Dahua Technology Co Ltd

Submission Date: 2018\_10\_29

Template size: 2048 bytes

Template time (2.5 percentile): 361 msec

Template time (median): 375 msec

Template time (97.5 percentile): 407 msec

Investigation:

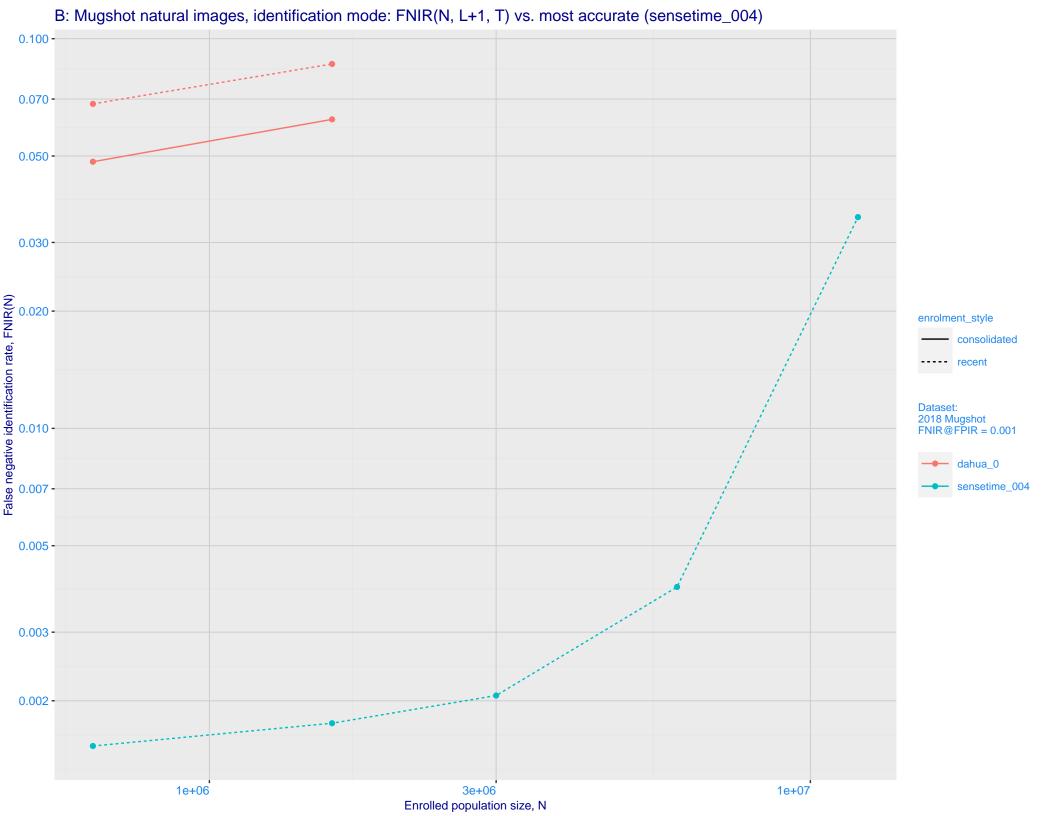
Frontal mugshot ranking 123 (out of 265) -- FNIR(1600000, 0, 1) = 0.0093 vs. lowest 0.0009 from sensetime\_005

Mugshot webcam ranking 103 (out of 227) -- FNIR(1600000, 0, 1) = 0.0260 vs. lowest 0.0062 from sensetime\_005

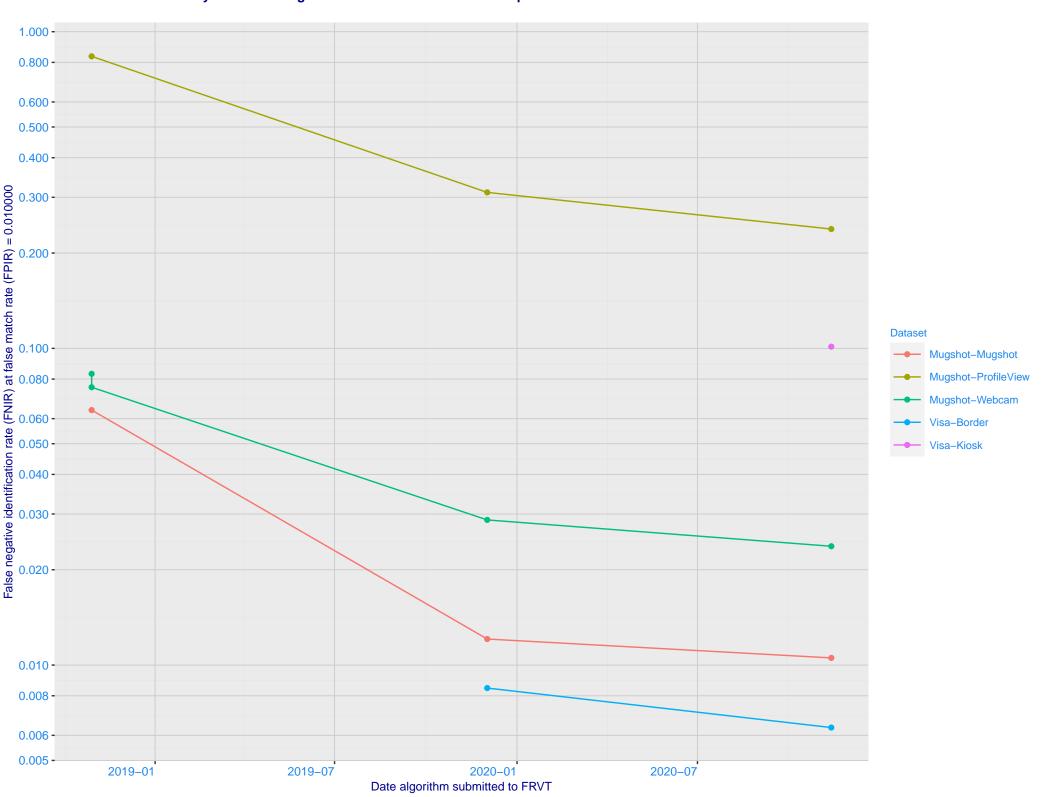
Identification:

Frontal mugshot ranking 121 (out of 265) -- FNIR(1600000, T, L+1) = 0.0861, FPIR=0.001000 vs. lowest 0.0018 from sensetime\_004

Mugshot webcam ranking 95 (out of 225) -- FNIR(1600000, T, L+1) = 0.1352, FPIR=0.001000 vs. lowest 0.0122 from sensetime\_003

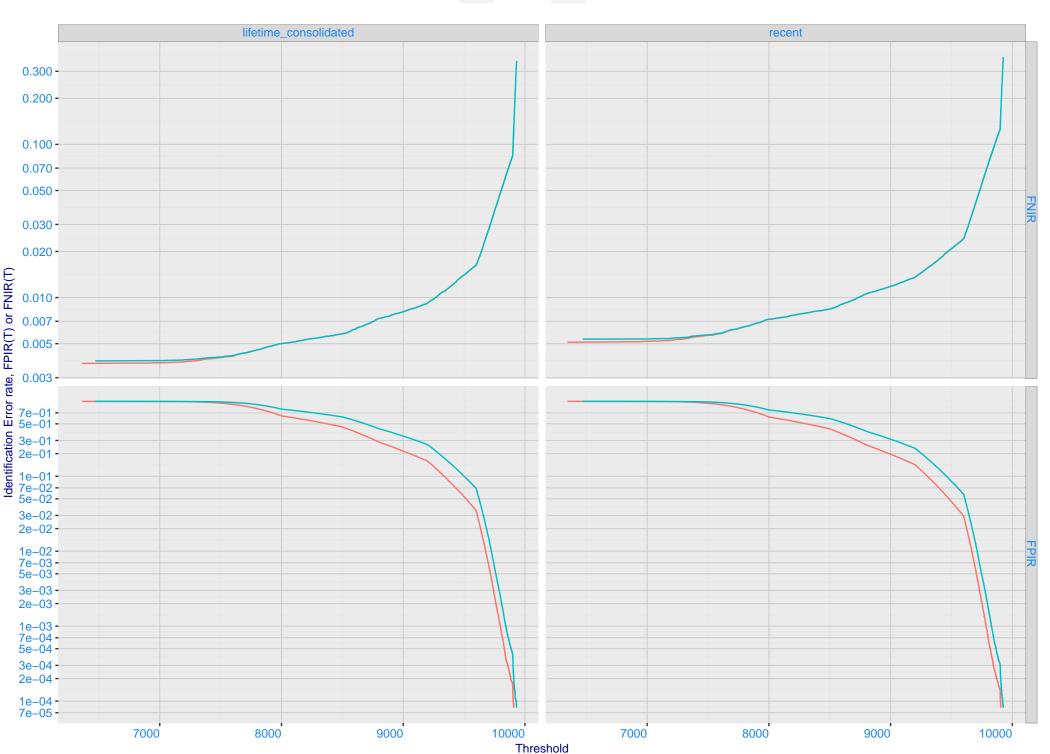


C: Evolution of accuracy for DAHUA algorithms on three datasets 2018 – present

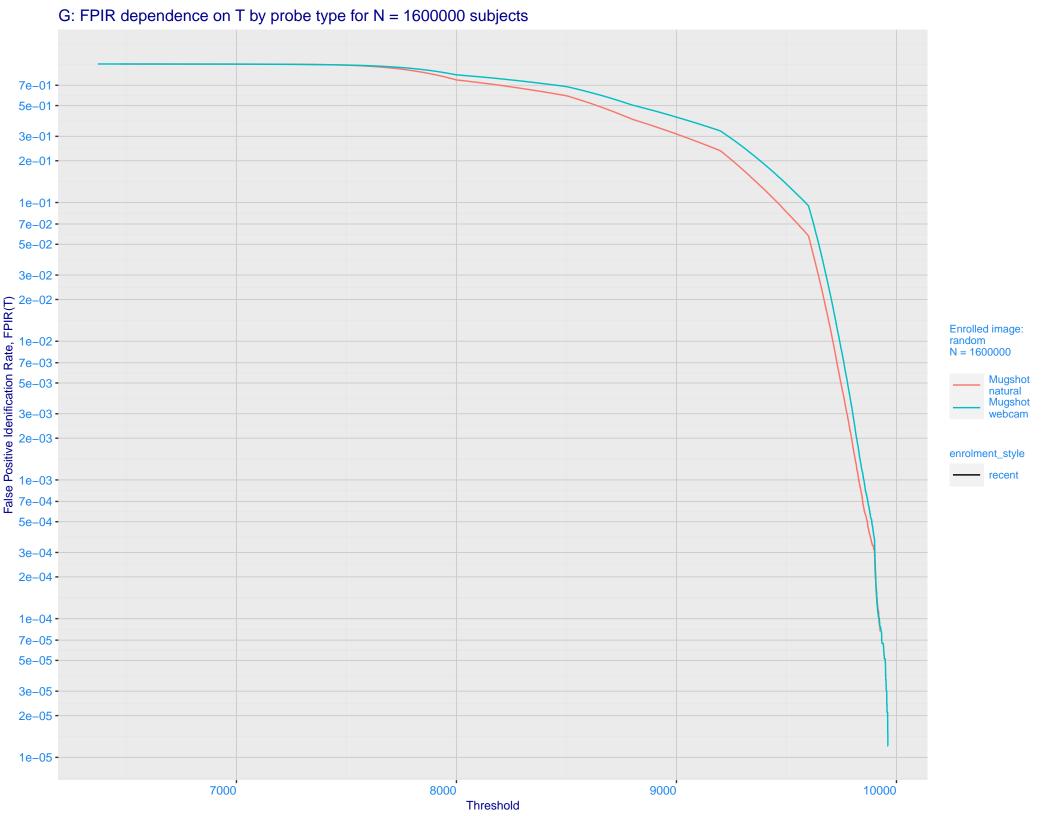


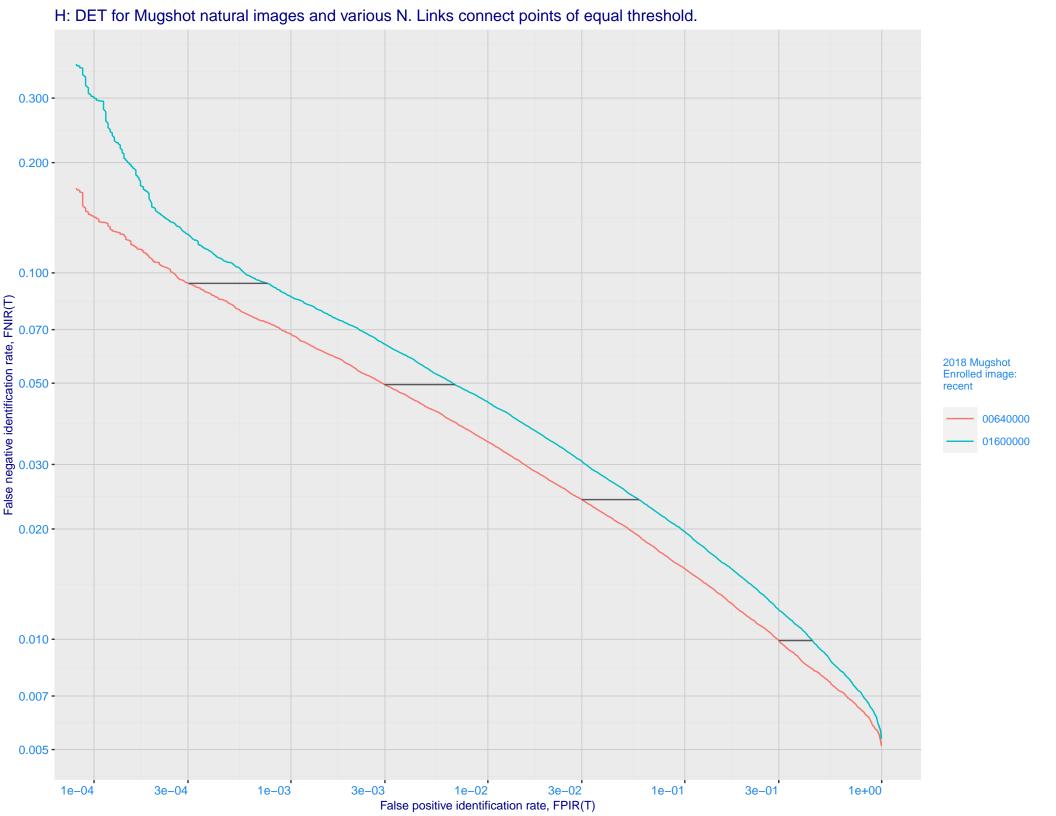
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration** Mugshot **Immigration** visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.002 - 0.001 - 0.500 - 0.200 - 0. 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 -



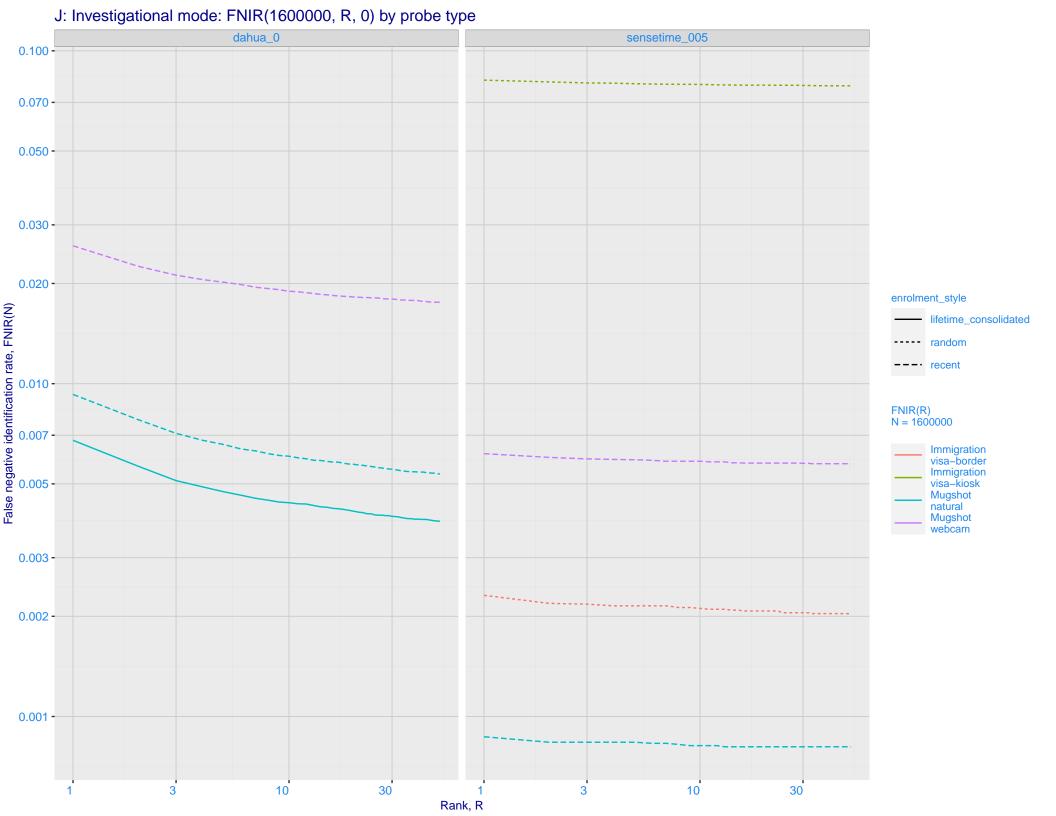


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 - 7e-02 - 3e-02 - 3e-02 - 2e-02 - 1e-02 **Enrolled images:** recent N = 1600000 Mugshot natural Mugshot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

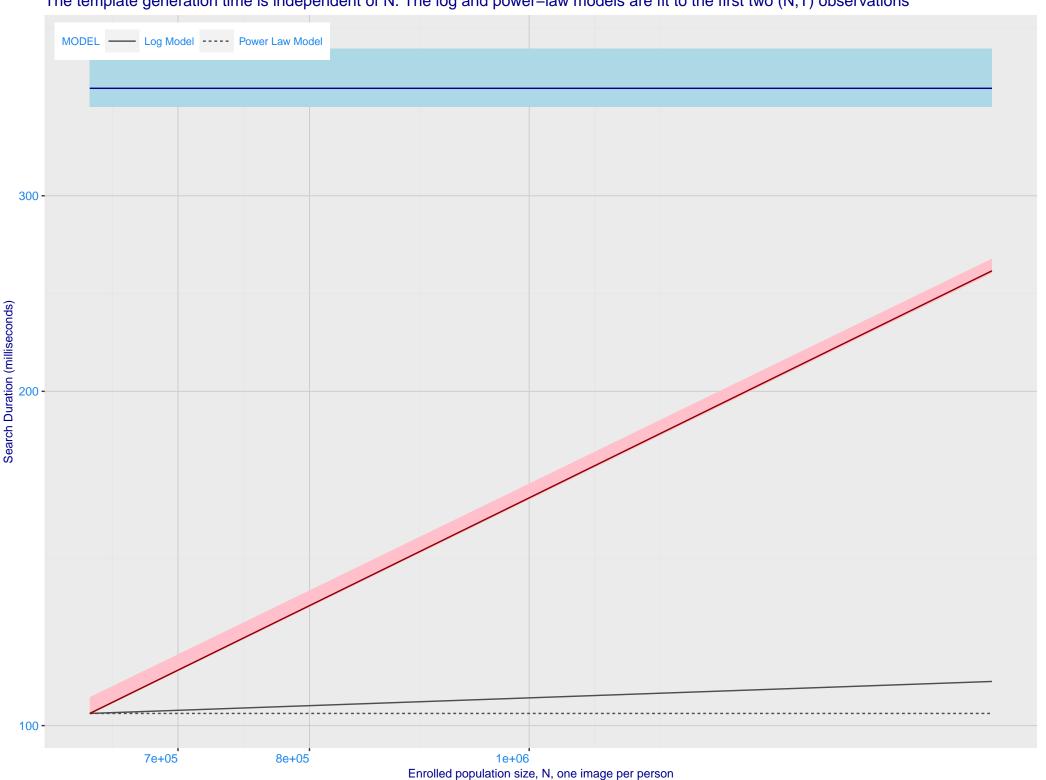




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime\_005) Immigration **Immigration** visa-border visa-kiosk 0.100 0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -Ealse negative identification rate, FNIR(N) 0.002 - 0.001 - 0.000 - 0.050 - 0.030 - 0. enrolment\_style consolidated ---- random --- recent Mugshot Mugshot webcam natural FNIR@Rank = 1 dahua\_0 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



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



