## A: Datasheet

Algorithm: rankone\_0

Developer: Rank One Computing

Submission Date: 2018\_02\_07

Template size: 228 bytes

Template time (2.5 percentile): 47 msec

Template time (median): 50 msec

Template time (97.5 percentile): 56 msec

Investigation:

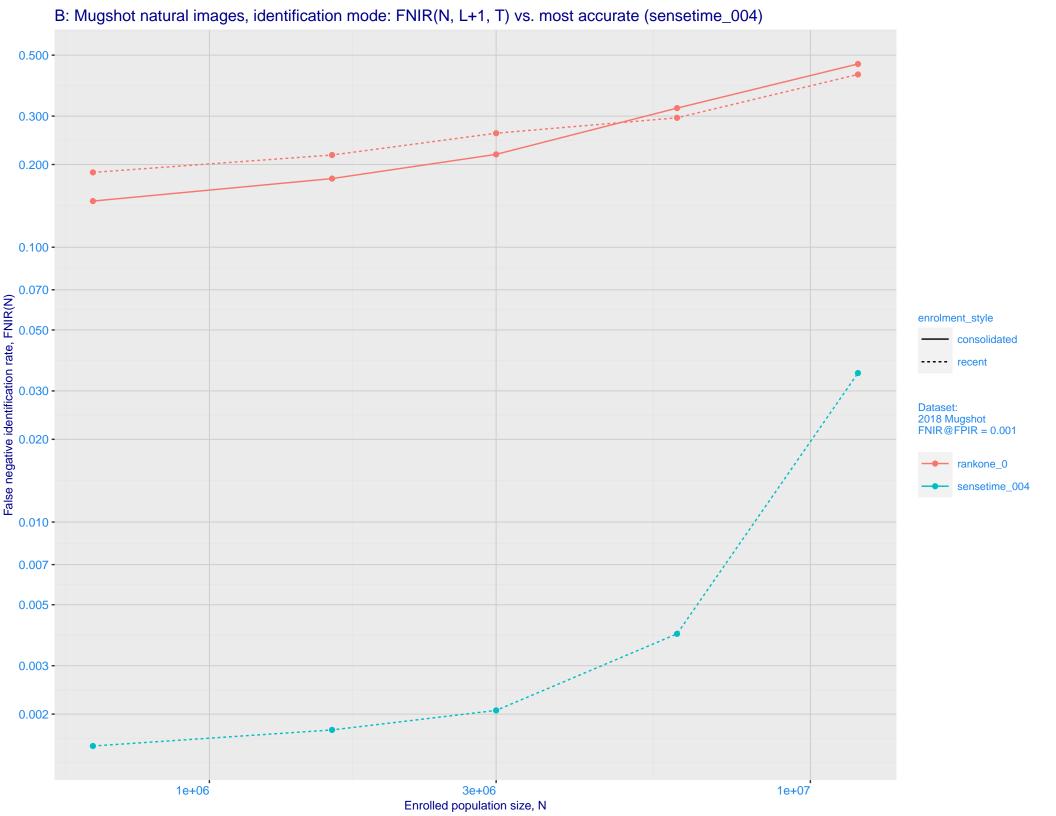
Frontal mugshot ranking 191 (out of 259) -- FNIR(1600000, 0, 1) = 0.0429 vs. lowest 0.0009 from sensetime\_005

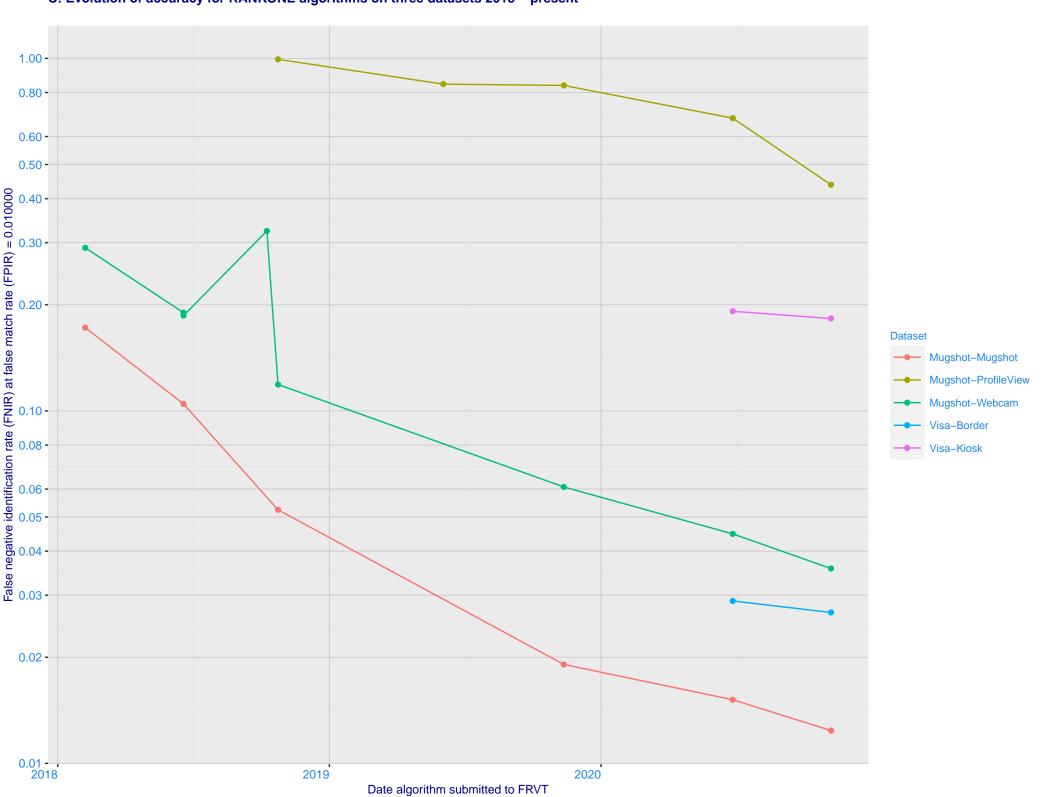
Mugshot webcam ranking 177 (out of 221) -- FNIR(1600000, 0, 1) = 0.1172 vs. lowest 0.0062 from sensetime\_005

Identification:

Frontal mugshot ranking 172 (out of 259) -- FNIR(1600000, T, L+1) = 0.2165, FPIR=0.001000 vs. lowest 0.0018 from sensetime\_004

Mugshot webcam ranking 165 (out of 219) -- FNIR(1600000, T, L+1) = 0.3912, FPIR=0.001000 vs. lowest 0.0122 from sensetime\_003

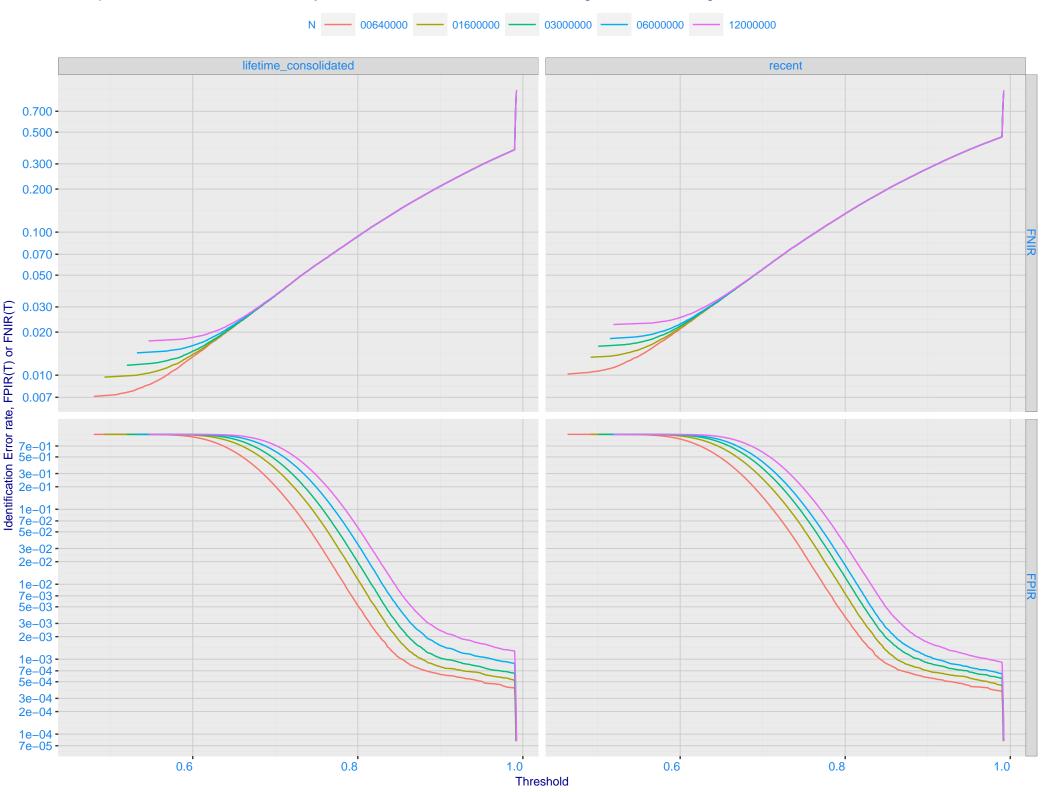




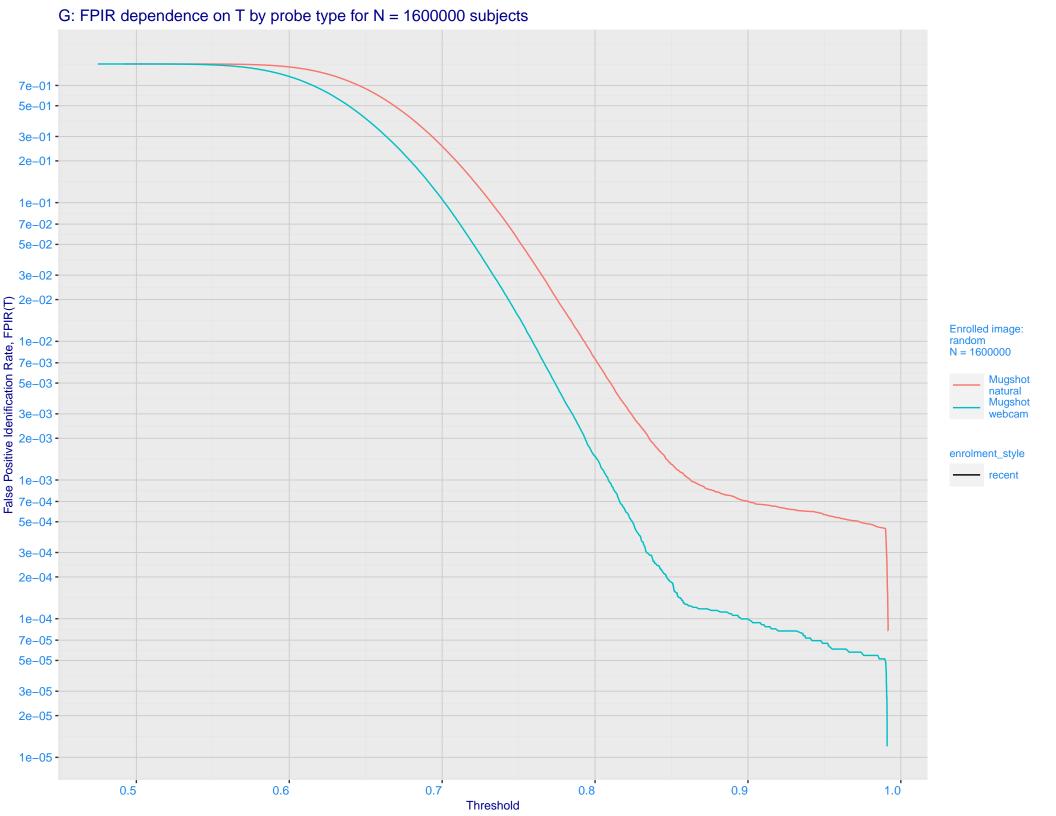
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration** Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.000 - 0.000 - 0.500 - 0.200 - 0. 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 -

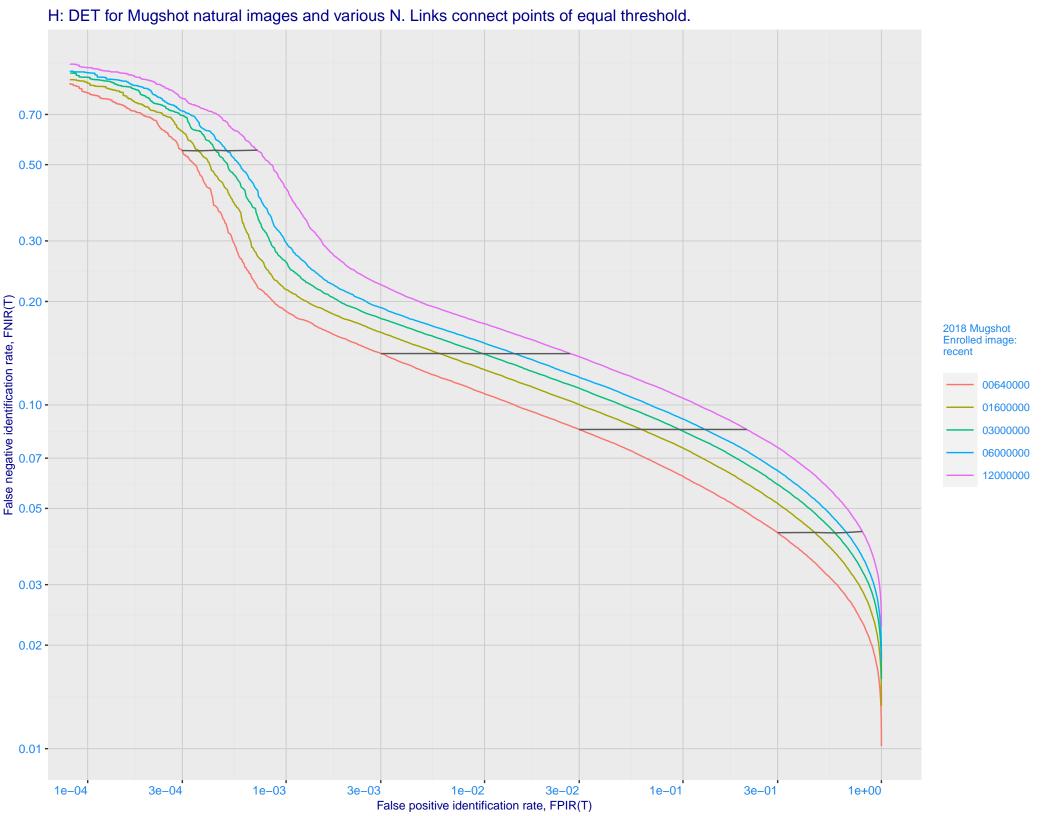
0.001 -

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

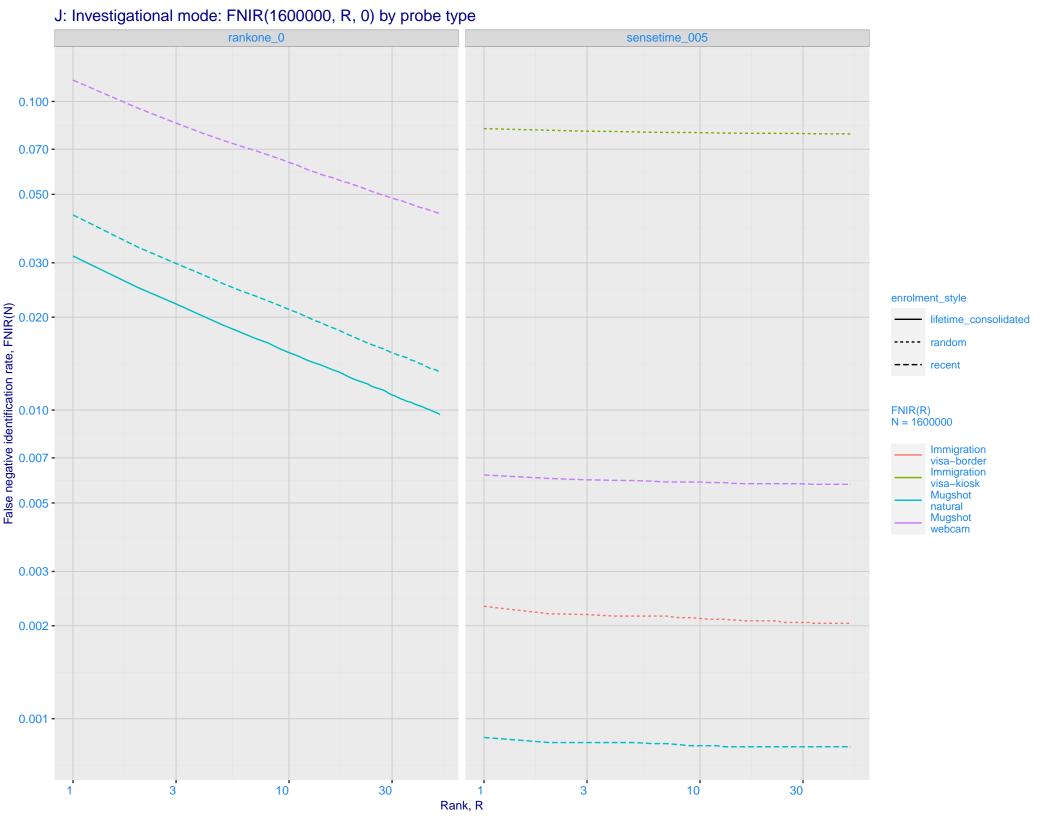


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00-3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 -(E) 7e-02 - 7e **Enrolled images:** recent N = 1600000 Mugshot natural Mugshot webcam 7e-03 -5e-03 -3e-03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

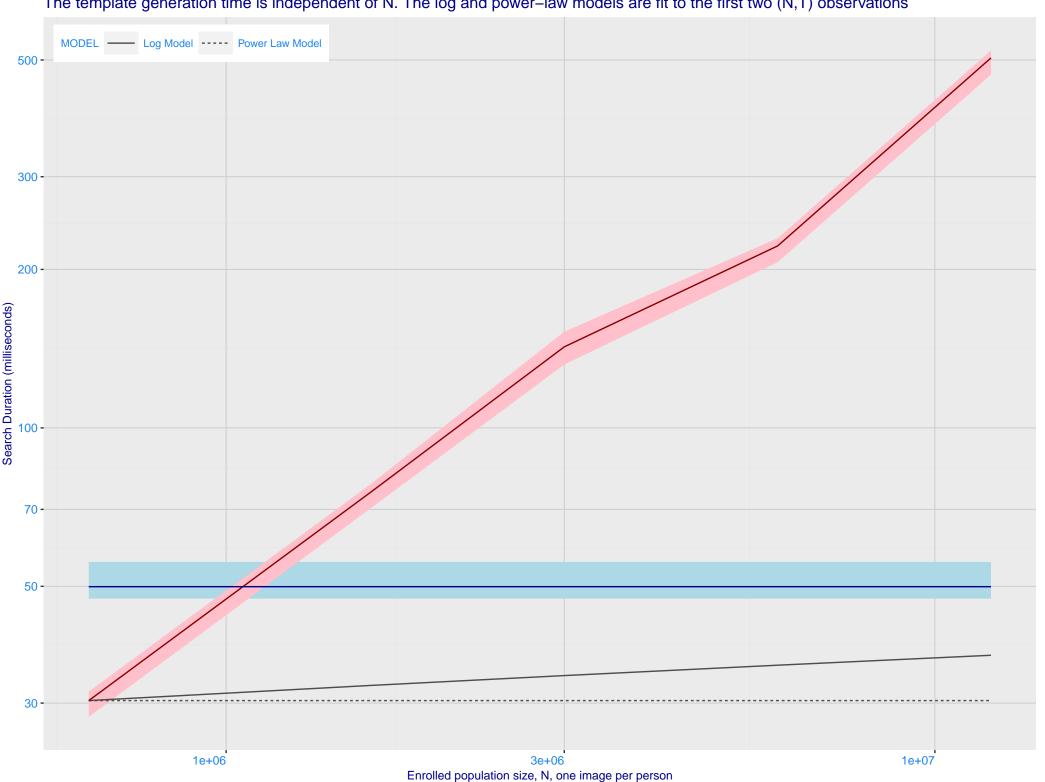




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime\_005) Immigration **Immigration** visa-border visa-kiosk 0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 - 0.002 - 0.001 - 0.001 - 0.000 - 0.000 - 0.050 enrolment\_style consolidated ---- random --- recent Mugshot webcam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



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

