## A: Datasheet

Algorithm: innovatrics\_1

Developer: Innovatrics

Submission Date: 2018\_02\_16

Template size: 530 bytes

Template time (2.5 percentile): 299 msec

Template time (median): 316 msec

Template time (97.5 percentile): 345 msec

Investigation:

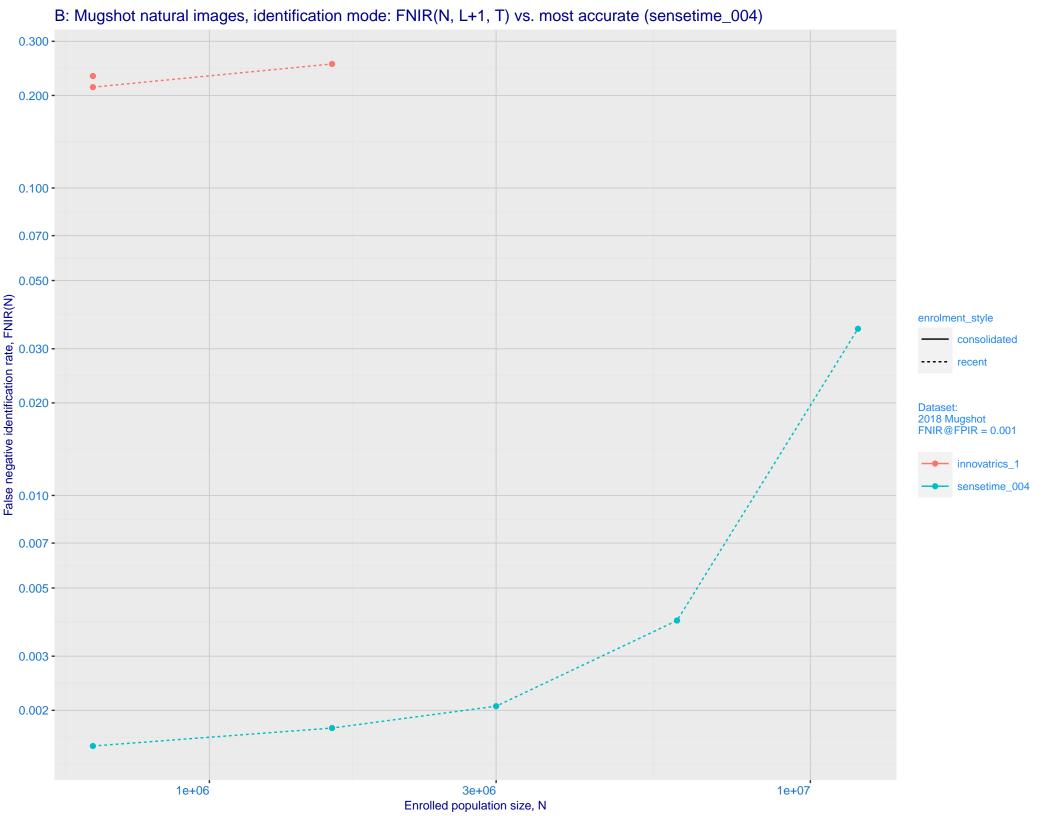
Frontal mugshot ranking 204 (out of 279) -- FNIR(1600000, 0, 1) = 0.0395 vs. lowest 0.0009 from sensetime\_005

Mugshot profile ranking 170 (out of 210) -- FNIR(1600000, 0, 1) = 0.9644 vs. lowest 0.0587 from xforwardai\_002

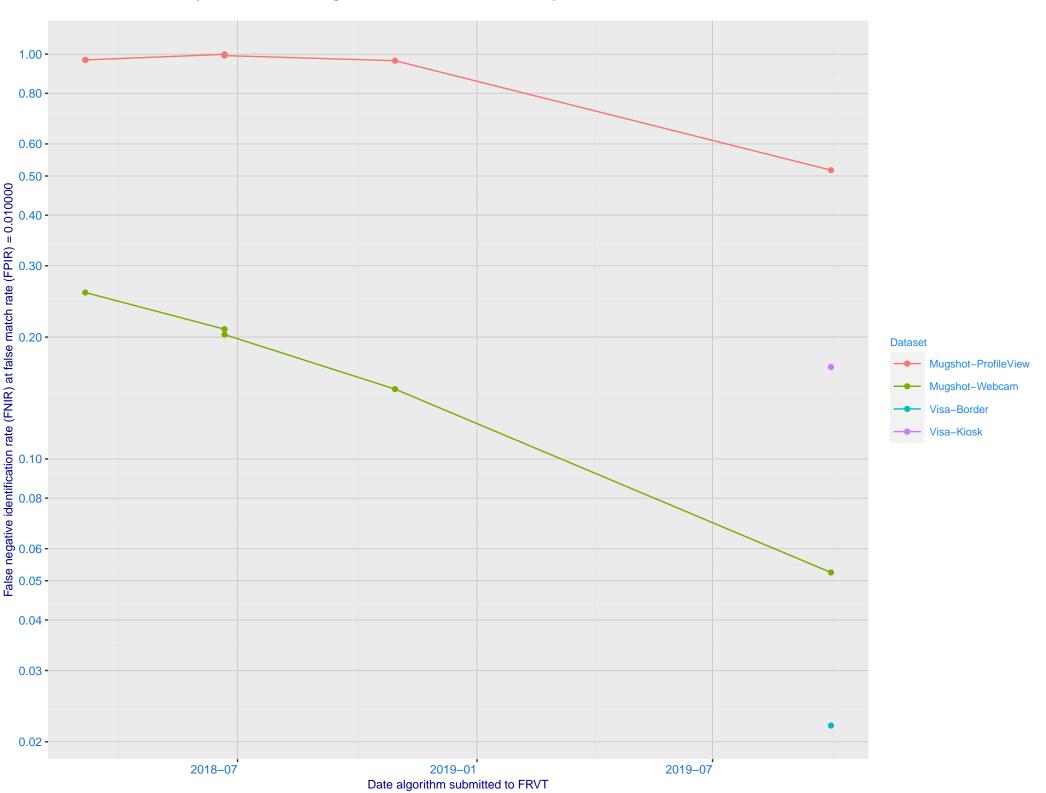
Identification:

Frontal mugshot ranking 198 (out of 279) -- FNIR(1600000, T, L+1) = 0.2532, FPIR=0.001000 vs. lowest 0.0018 from sensetime\_004

Mugshot profile ranking 70 (out of 209) -- FNIR(1600000, T, L+1) = 0.9828, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk\_hr\_000



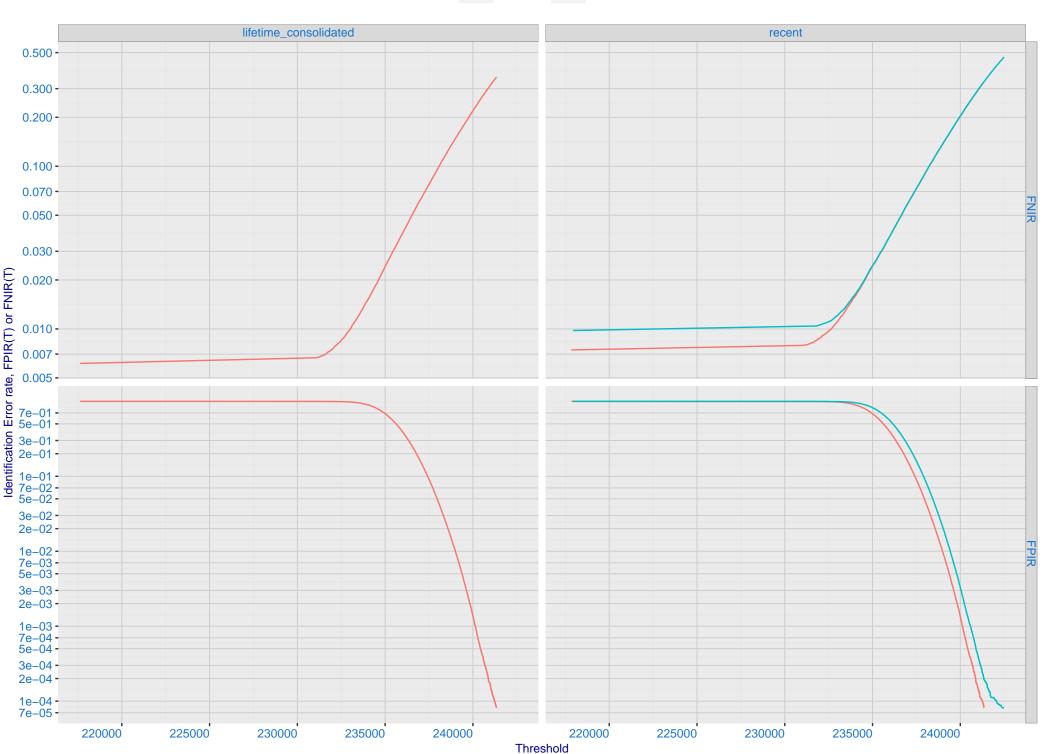
C: Evolution of accuracy for INNOVATRICS algorithms on three datasets 2018 – present



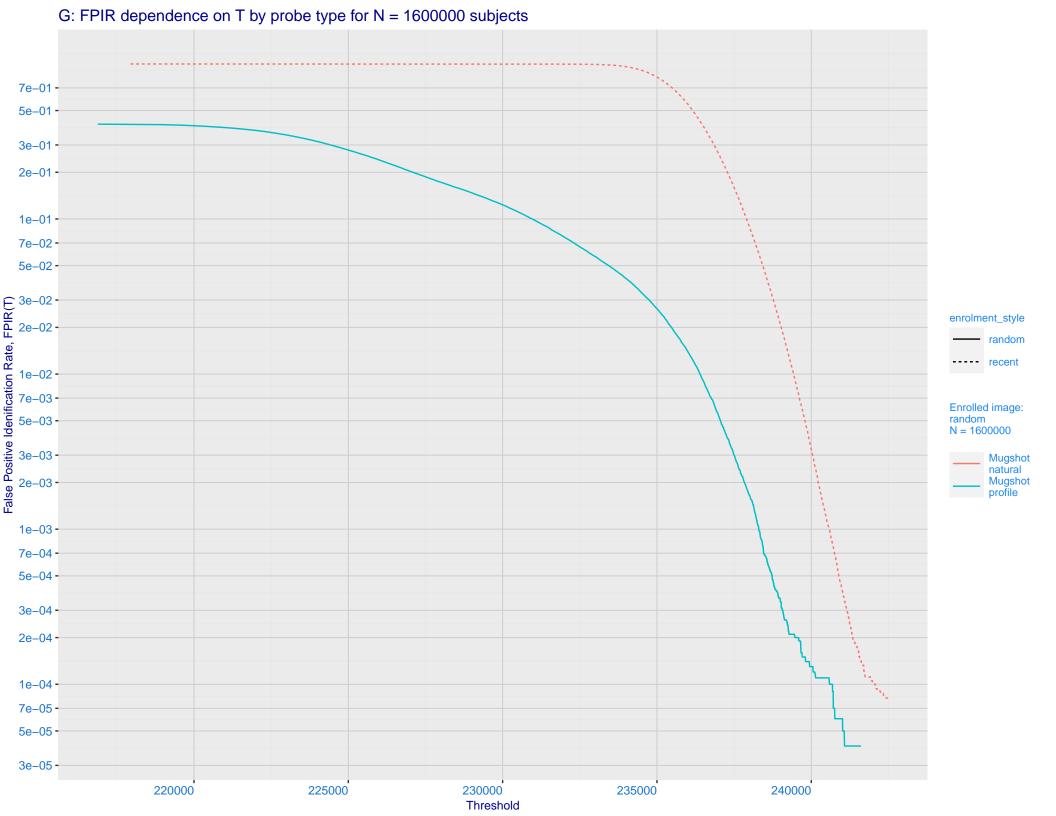
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 innovatrics 0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.000 - 0.500 - 0.500 - 0.200 - 0.100 - 0. enrolment\_style random-ONE-MATE recent-ONE-MATE 0.070 -0.050 sensetime 004 0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -

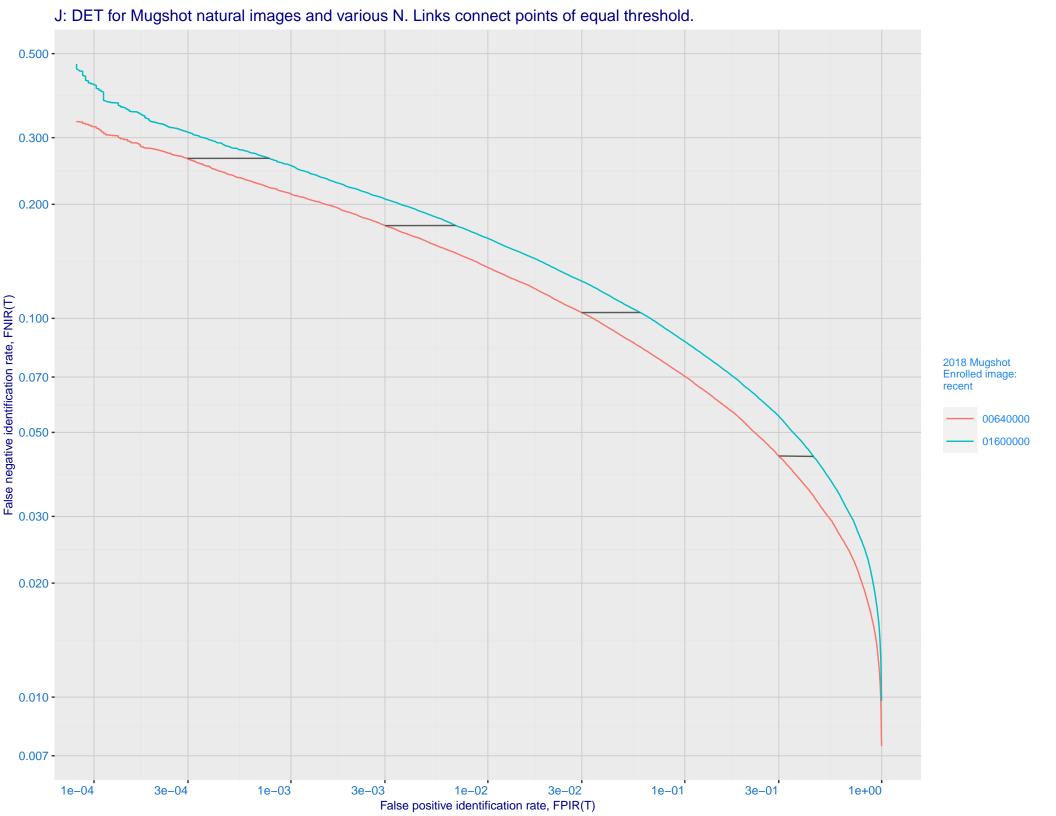
False positive identification rate, FPIR(T)

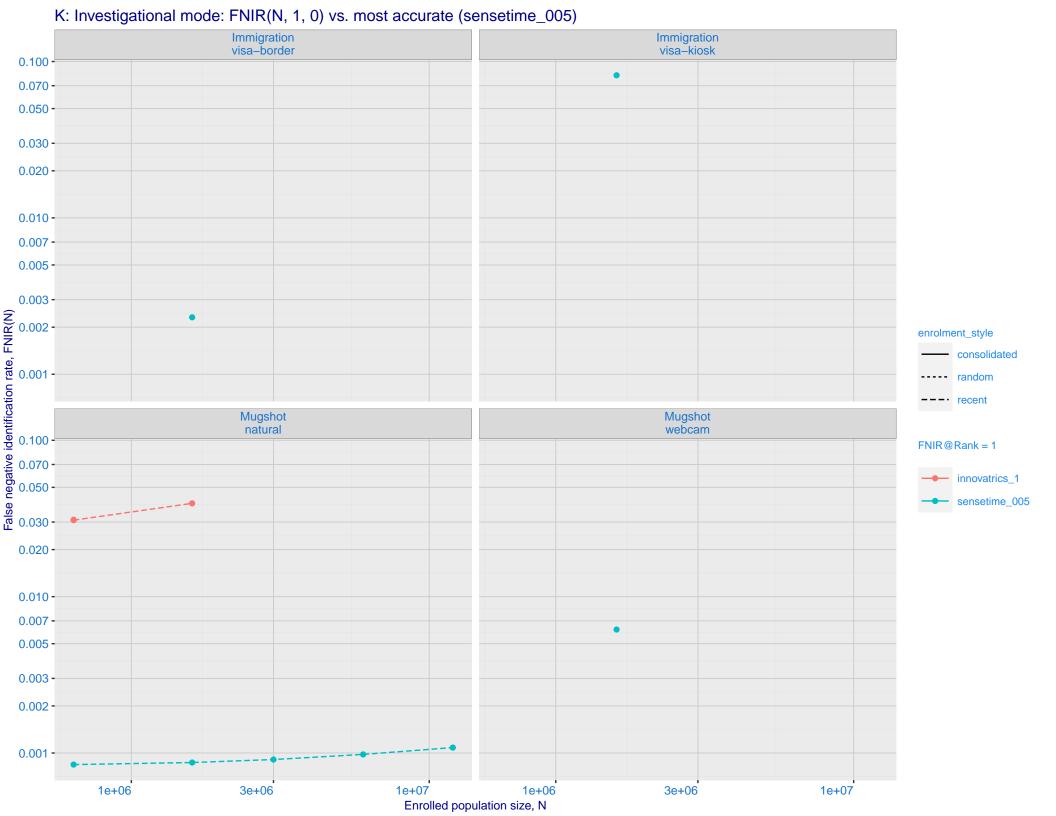


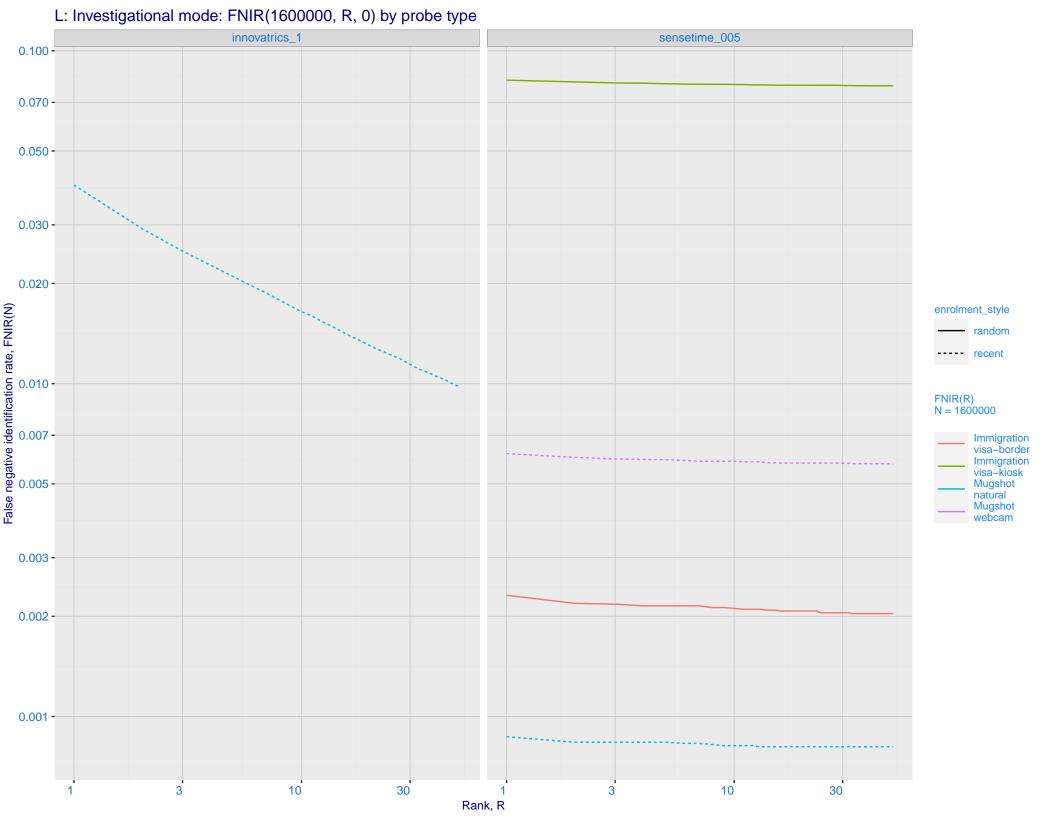


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -Enrolled images: recent N = 1600000 Mugshot natural 2e-02 -1e-02 -7e-03 -5e-03 -3e-03 -2e-03 -1e-03 -7e-04 -5e-04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









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 700 -Log Model ---- Power Law Model 500 -300 -7e+05 8e+05 1e+06

Enrolled population size, N, one image per person

Search Duration (milliseconds)

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



