## A: Datasheet

Algorithm: rankone\_006

Developer: Rank One Computing

Submission Date: 2019\_06\_03

Investigation:

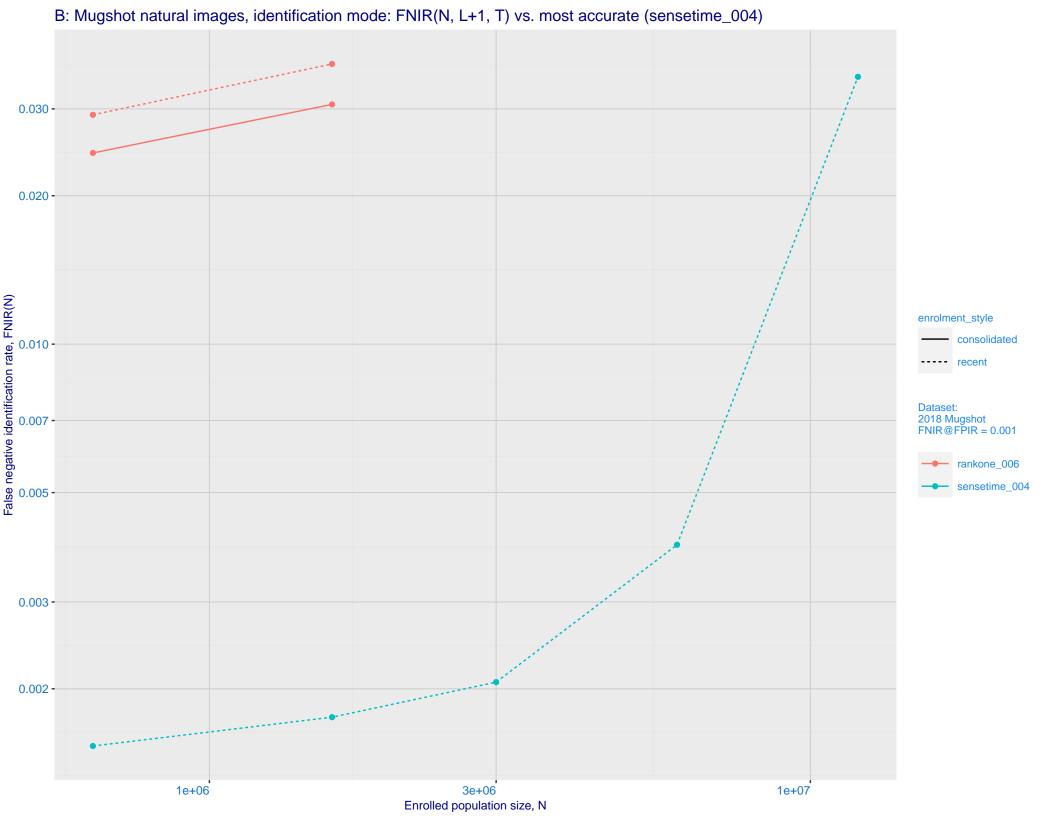
Frontal mugshot ranking 96 (out of 279) -- FNIR(1600000, 0, 1) = 0.0050 vs. lowest 0.0009 from sensetime\_005

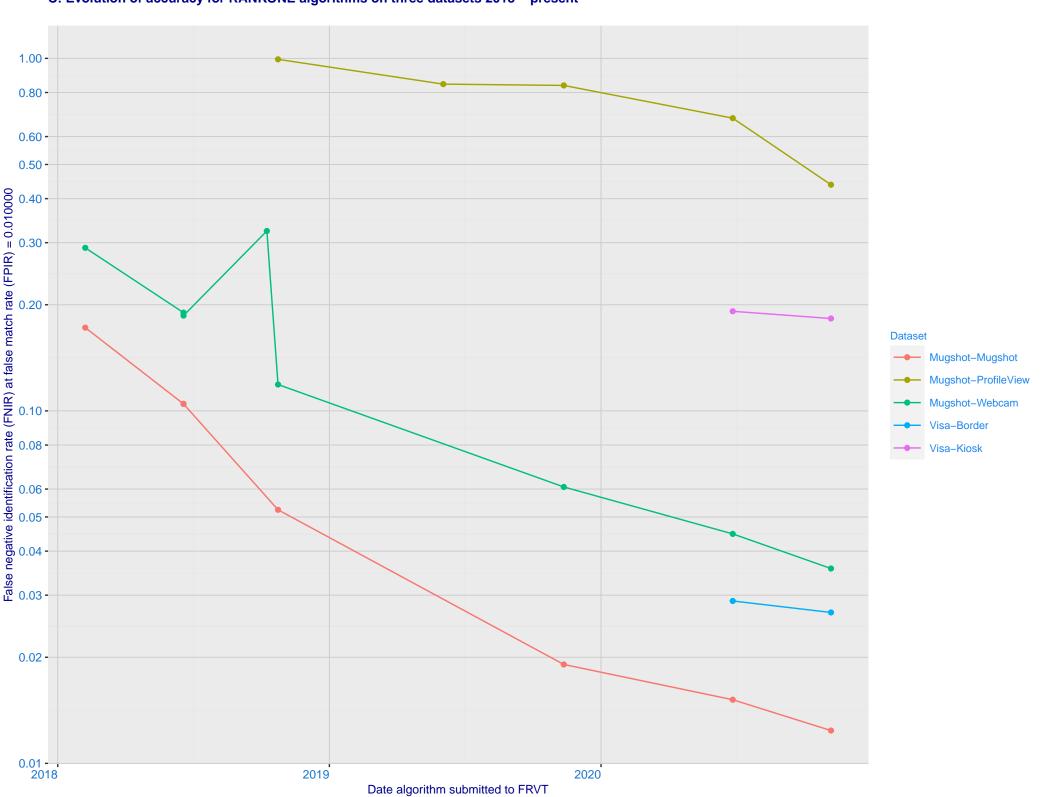
Mugshot profile ranking 106 (out of 210) -- FNIR(1600000, 0, 1) = 0.7972 vs. lowest 0.0587 from xforwardai\_002

Identification:

Frontal mugshot ranking 69 (out of 279) -- FNIR(1600000, T, L+1) = 0.0370, FPIR=0.001000 vs. lowest 0.0018 from sensetime\_004

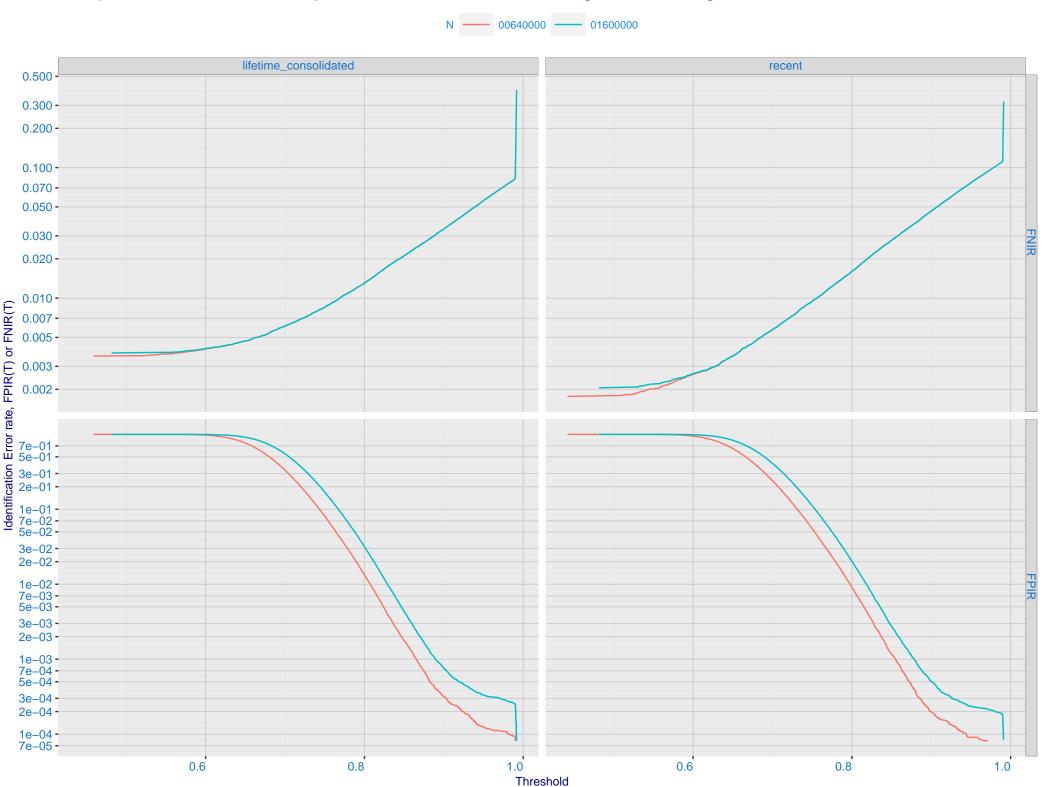
Mugshot profile ranking 58 (out of 209) -- FNIR(1600000, T, L+1) = 0.9771, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk\_hr\_000



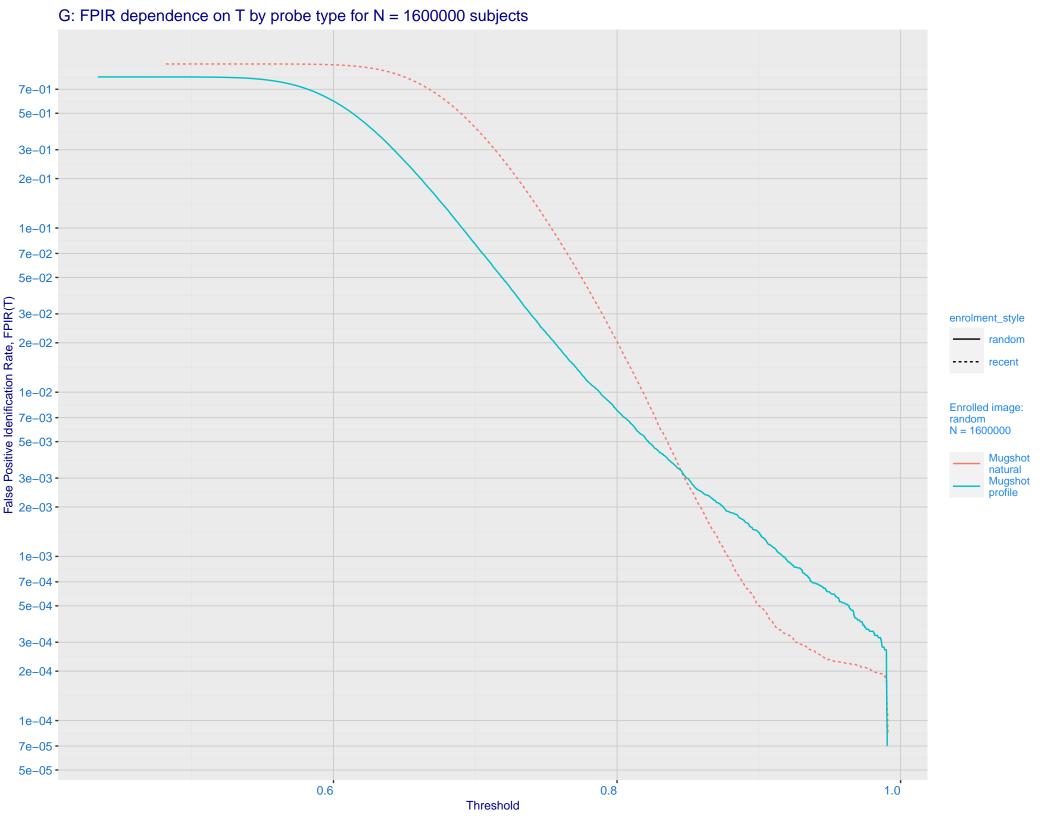


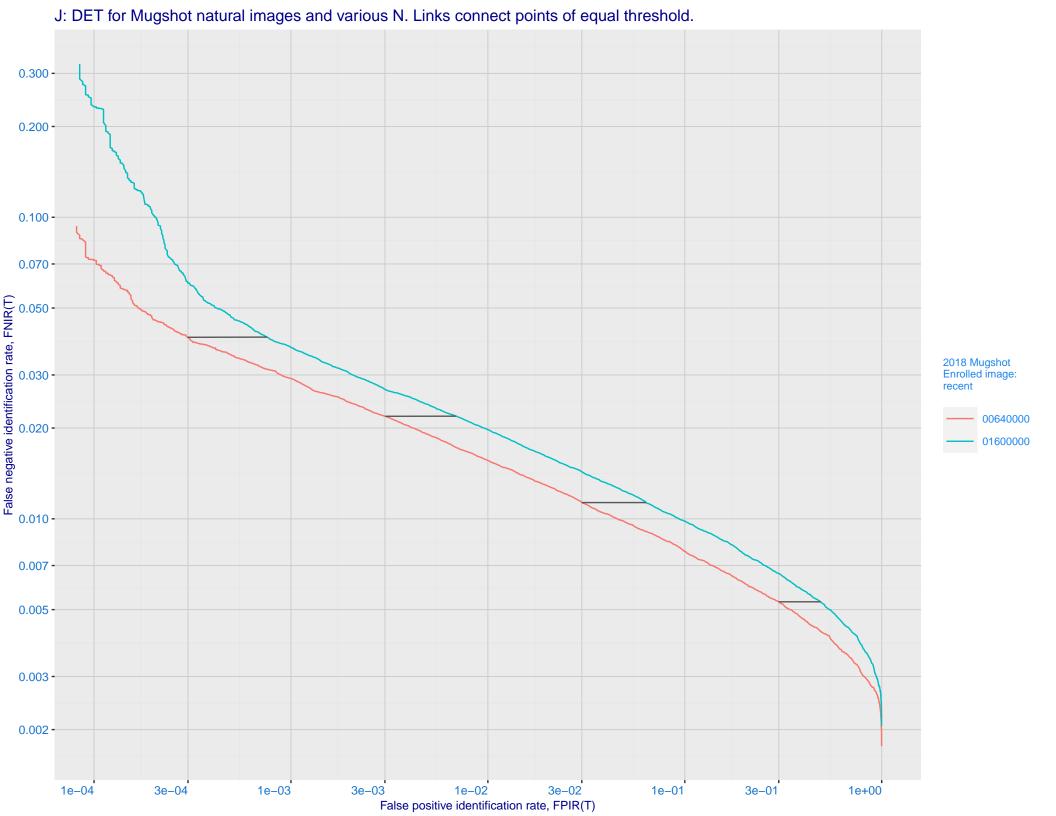
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.000 - 0.500 - 0.500 - 0.200 -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

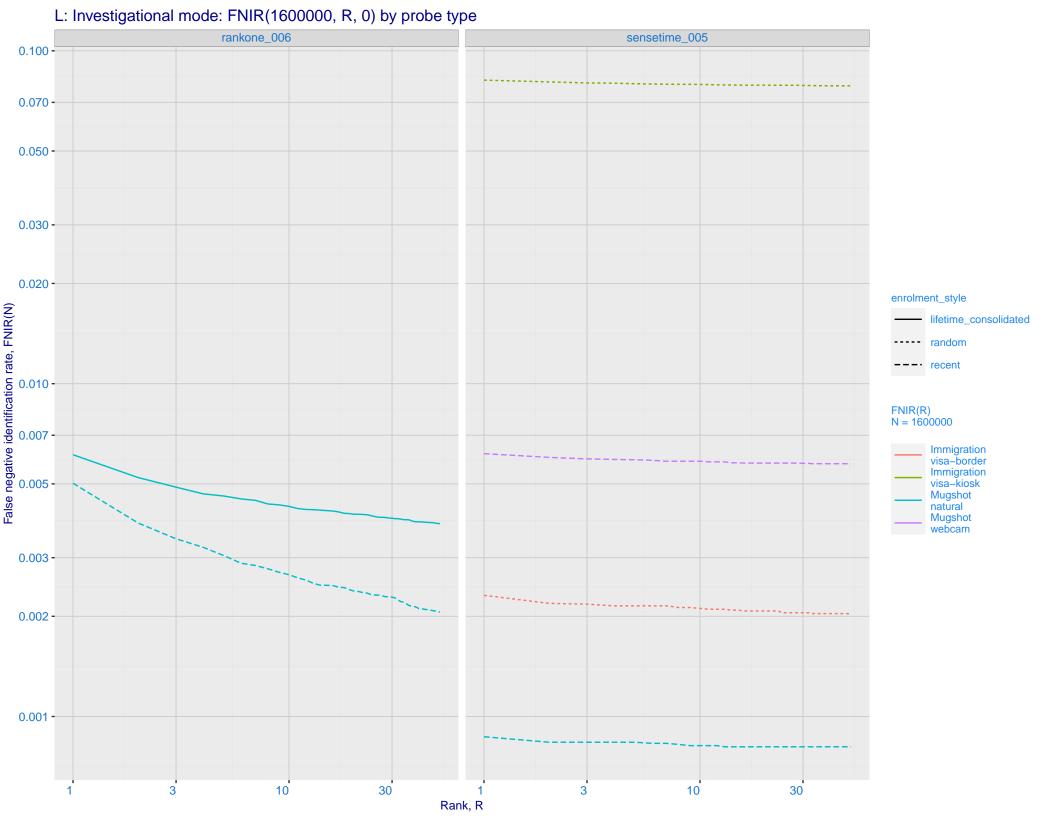


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -Selectivity. SEL(T) 1e-01 - 777 5e-02 - 5e-02 - 3e-02 - 787 5e-02 Enrolled images: recent N = 1600000 Mugshot 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)





K: 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 - 0.050 - 0.030 - 0. enrolment\_style consolidated ---- random --- recent Mugshot webcam Mugshot natural FNIR@Rank = 1 rankone\_006 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



	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
Search Duration (milliseconds)	
	Enrolled population size, N, one image per person

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



