## A: Datasheet

Algorithm: noblis\_2

Developer: Noblis

Submission Date: 2018\_10\_30

Template size: 6144 bytes

Template time (2.5 percentile): 506 msec

Template time (median): 517 msec

Template time (97.5 percentile): 592 msec

Investigation:

Frontal mugshot ranking 247 (out of 279) -- FNIR(1600000, 0, 1) = 0.1794 vs. lowest 0.0009 from sensetime\_005

Mugshot webcam ranking 221 (out of 241) -- FNIR(1600000, 0, 1) = 0.3923 vs. lowest 0.0062 from sensetime\_005

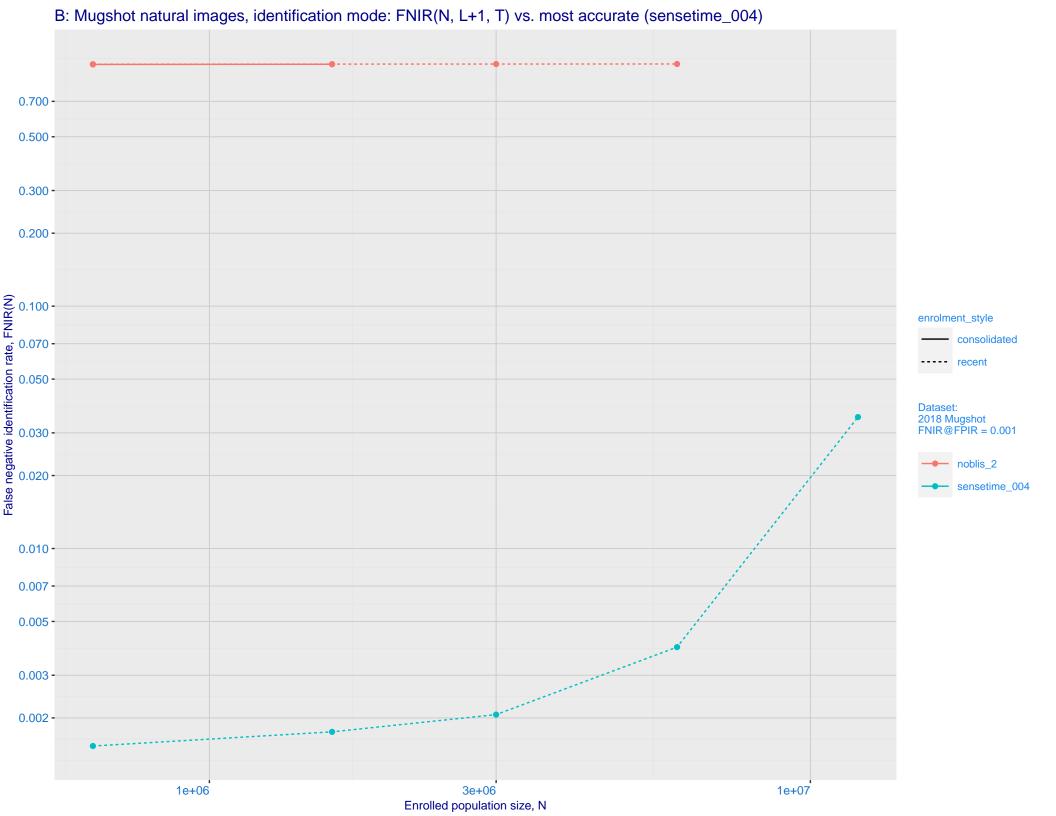
Mugshot profile ranking 196 (out of 210) -- FNIR(1600000, 0, 1) = 0.9815 vs. lowest 0.0587 from xforwardai\_002

Identification:

Frontal mugshot ranking 272 (out of 279) -- FNIR(1600000, T, L+1) = 0.9972, FPIR=0.001000 vs. lowest 0.0018 from sensetime\_004

Mugshot webcam ranking 234 (out of 236) -- FNIR(1600000, T, L+1) = 1.0000, FPIR=0.001000 vs. lowest 0.0122 from sensetime\_003

Mugshot profile ranking 187 (out of 209) -- FNIR(1600000, T, L+1) = 0.9999, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk\_hr\_000

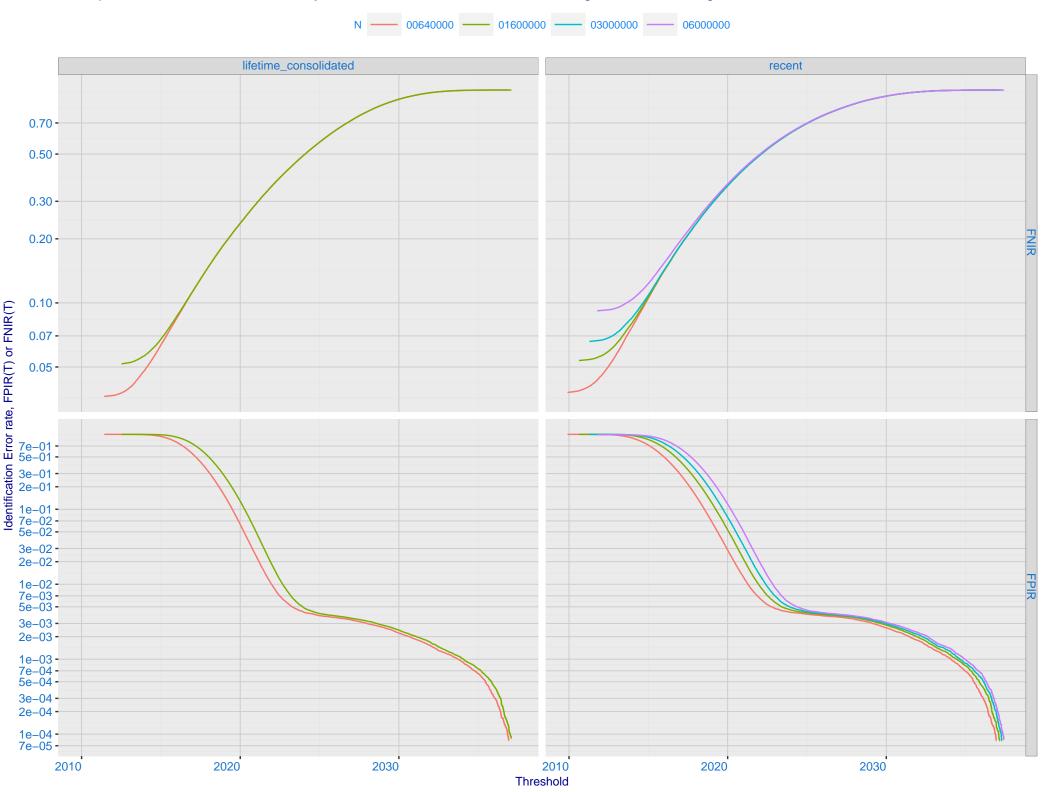


Dataset

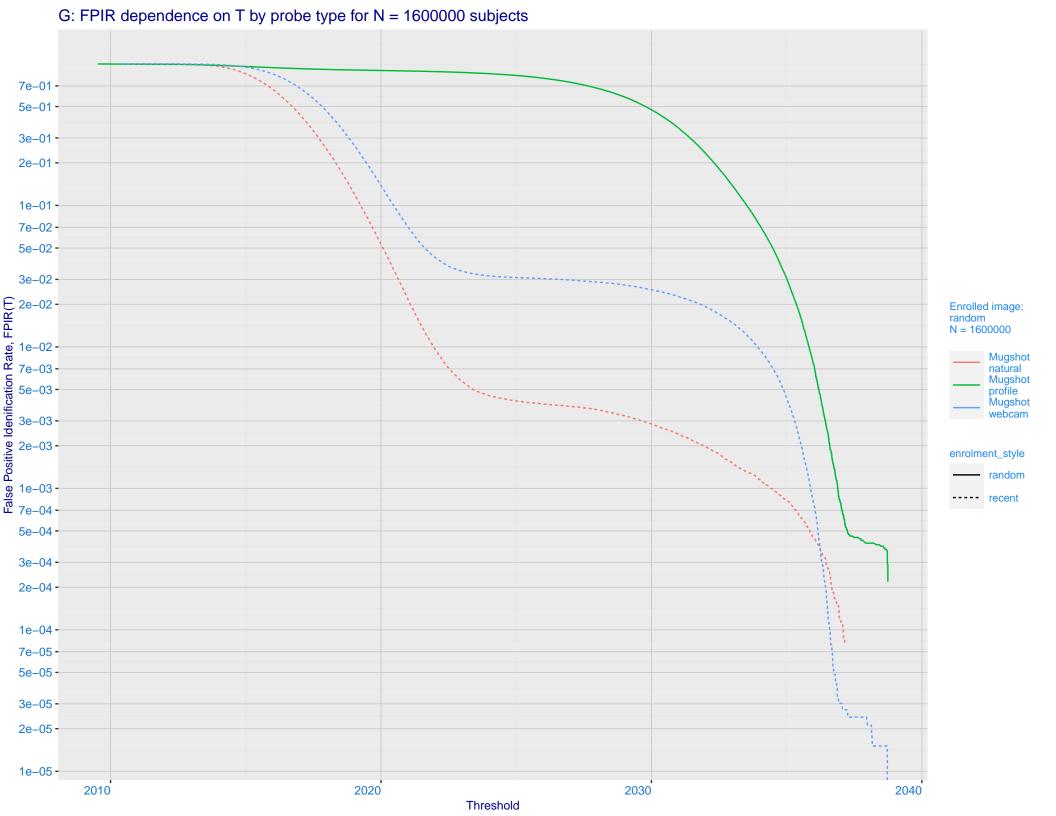
Mugshot–ProfileViewMugshot–Webcam

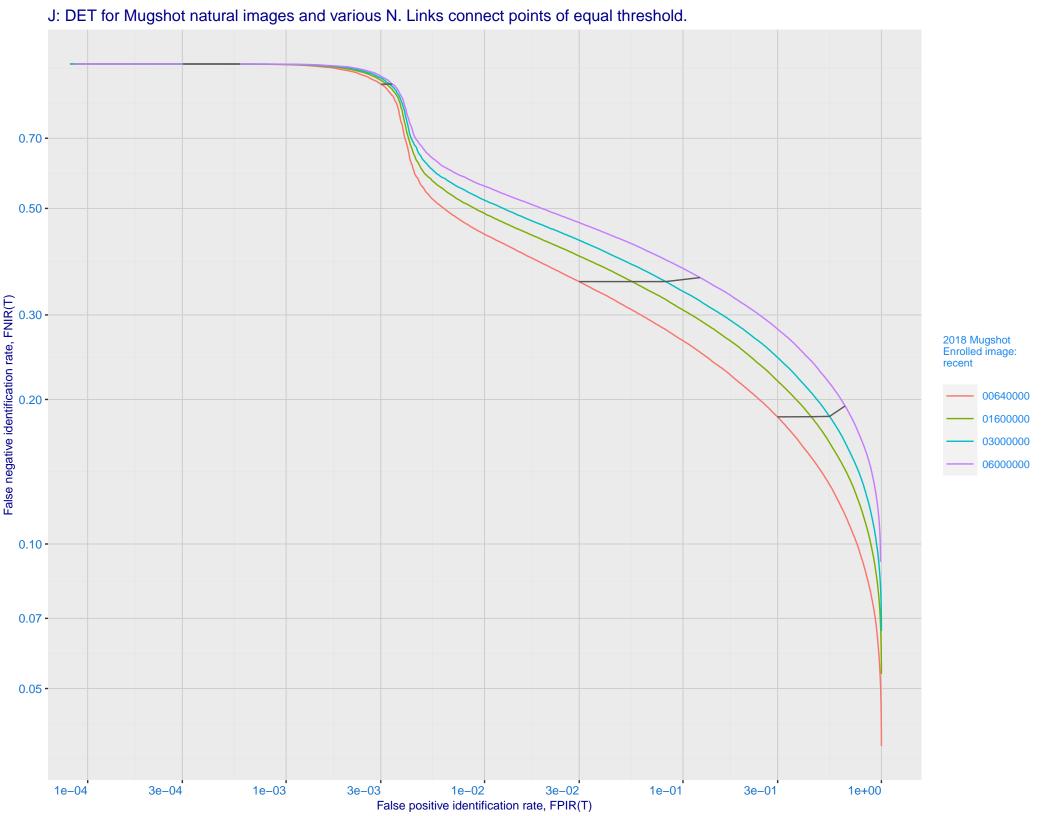
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration** Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 - 0.005 - 0.005 - 0.002 - 0.001 - 0.001 - 0.700 - 0.500 - 0.200 enrolment\_style consolidated-ONE-MATE random-ONE-MATE recent-ONE-MATE unconsolidated-ALL-MATES unconsolidated-ANY-MATE 0.100 -0.070 sensetime 004 0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -

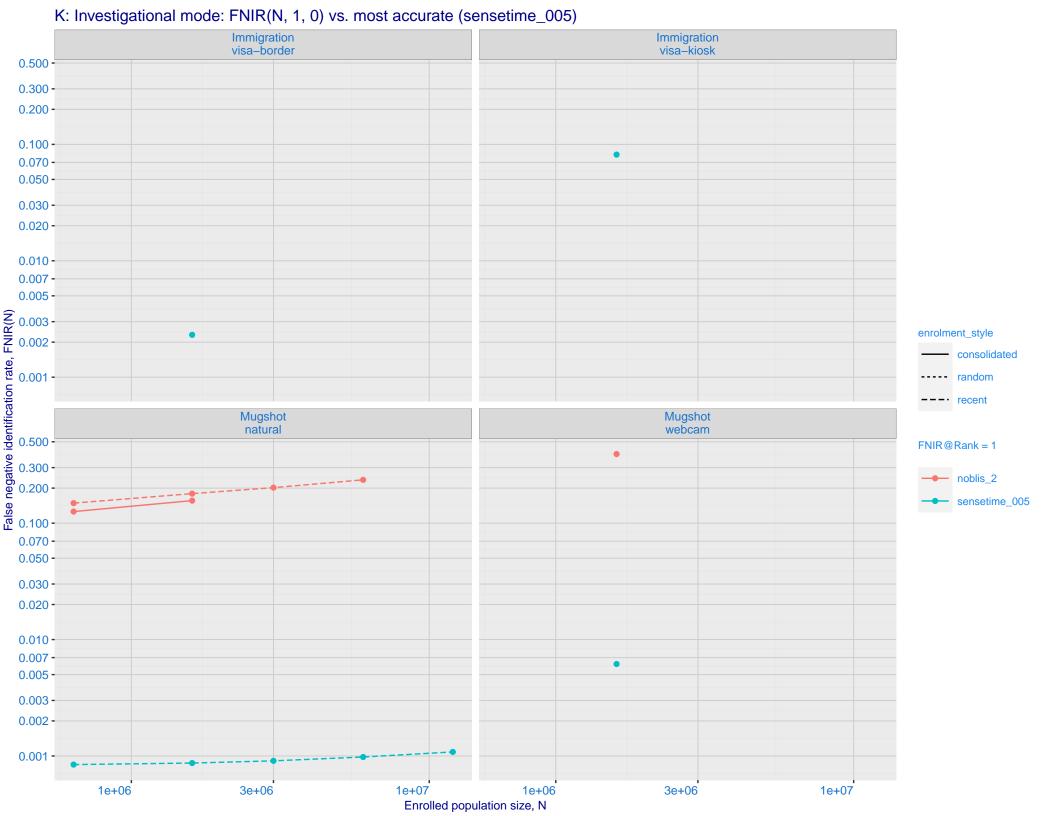
E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images

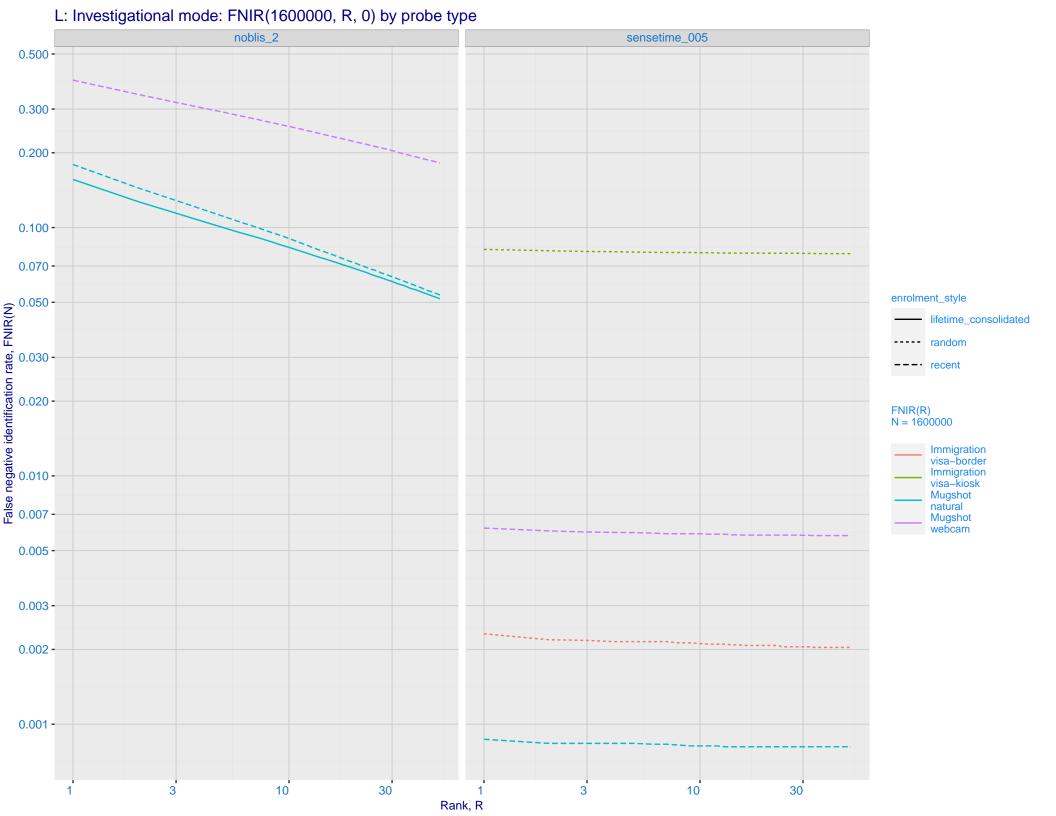


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 -7e-02 - 5e-02 -**Enrolled images:** recent N = 1600000 % 3e-02 -2e-02 -1e-02 -Mugshot natural Mugshot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

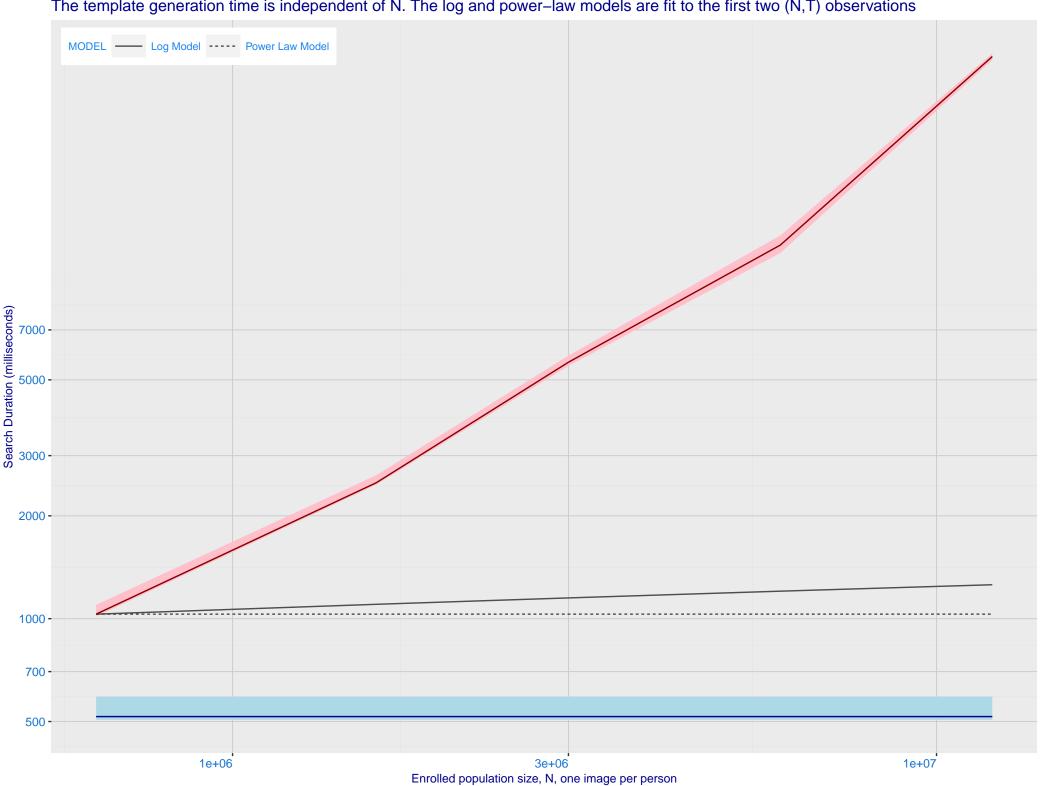




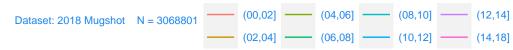


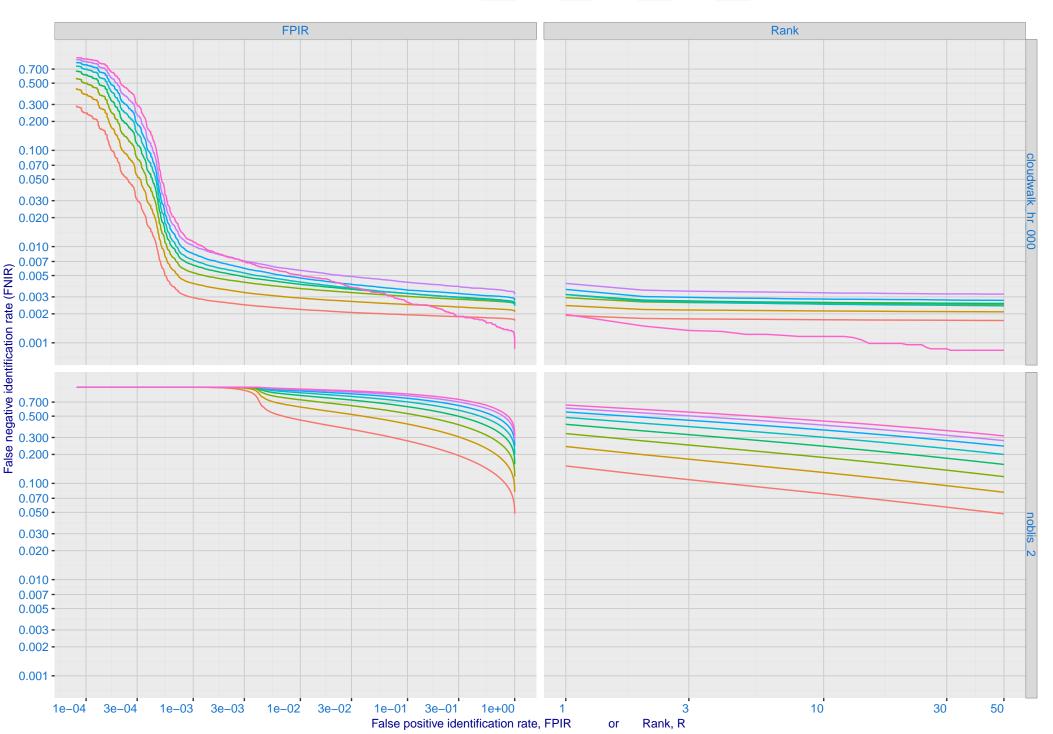


M: Template duration; search duration vs. N. The blue and pink ribbon covers 95 percent of observed measurements. The template generation time is independent of N. The log and power–law models are fit to the first two (N,T) observations



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 2040 -Dataset: 2018 Mugshot N= 3.1M Color encodes FNIR (Rank = 1) 2030 -0.15 0.10 0.05 0.00 TVAL 2020 - FPIR = 0.001 FPIR = 0.003 FPIR = 0.010FPIR = 0.030 2010 -(06,08](00,02](02,04](04,06](08,10](10,12](12,14](14,18]

Time lapse between search and initial encounter enrollment (years)