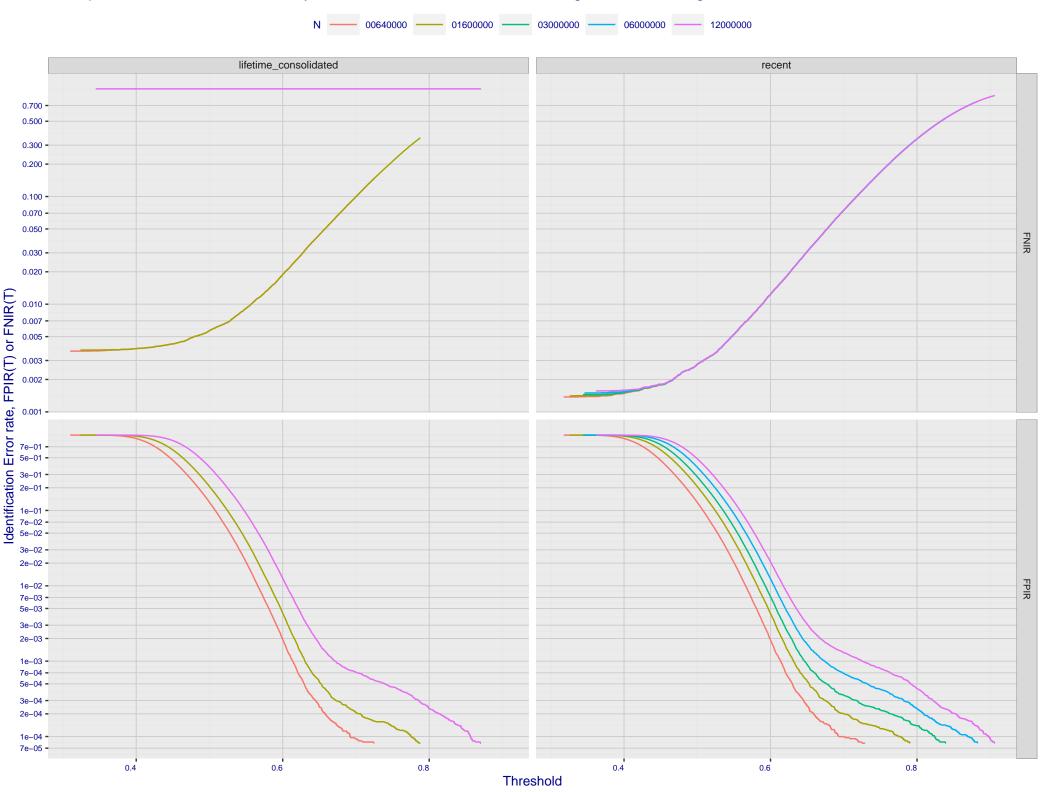
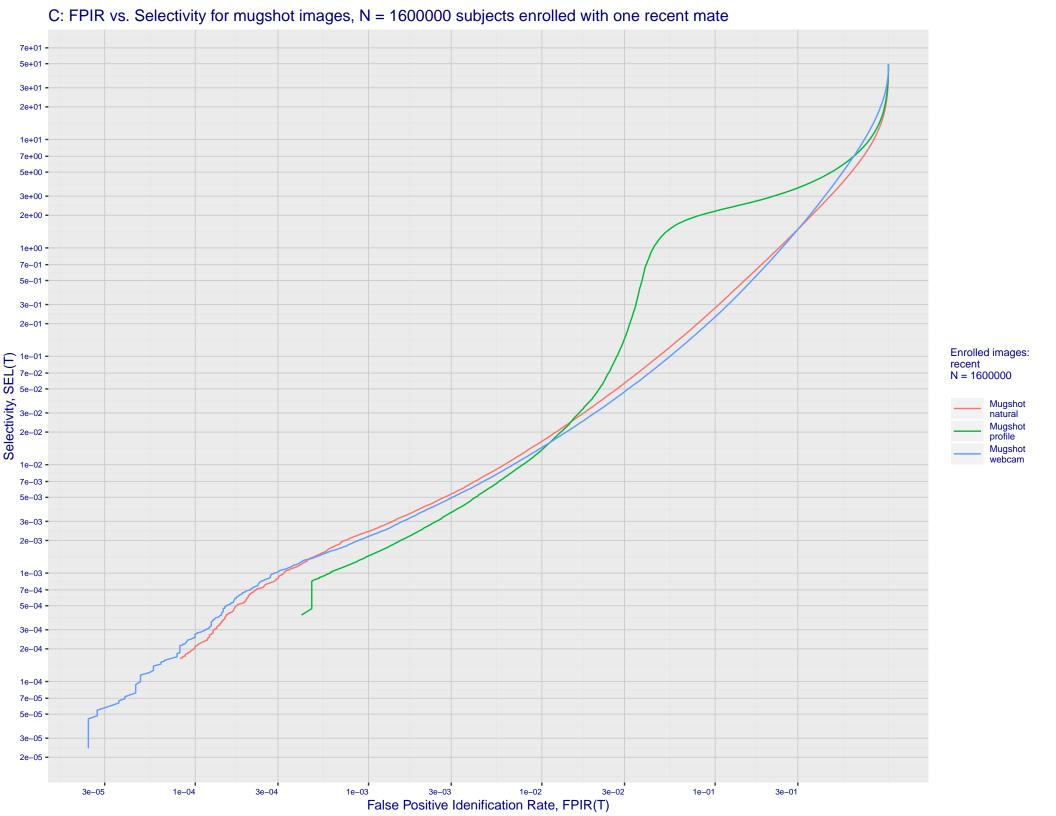
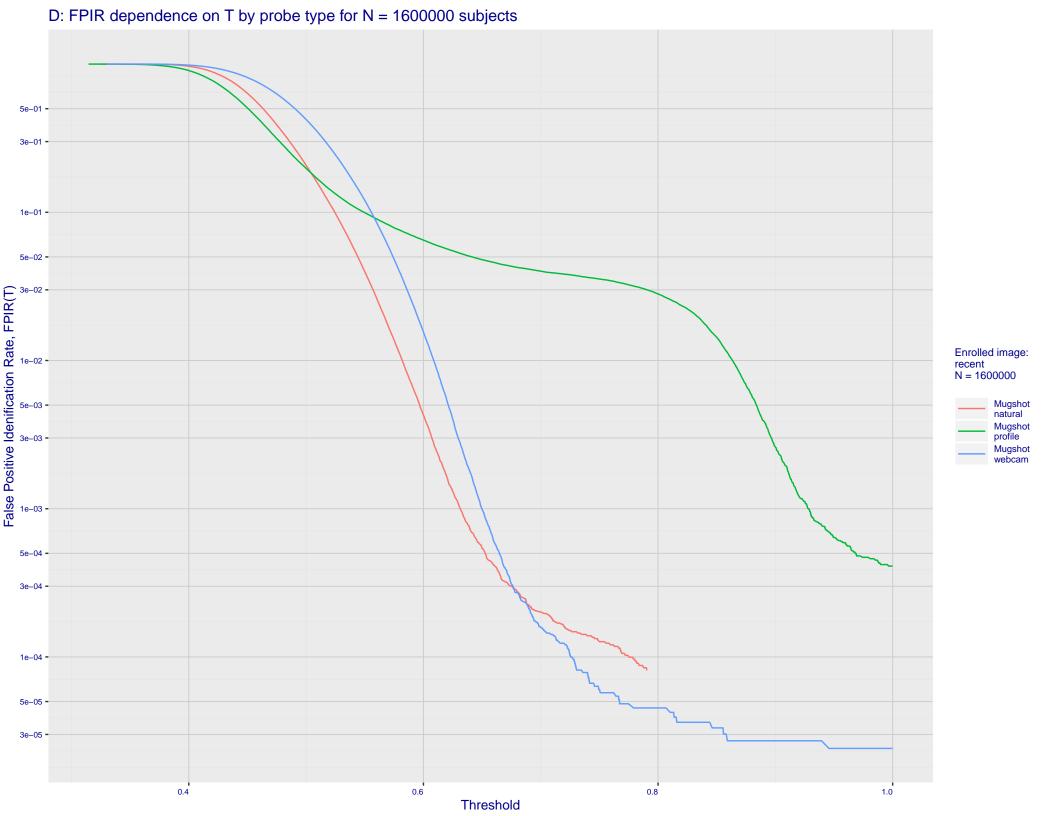
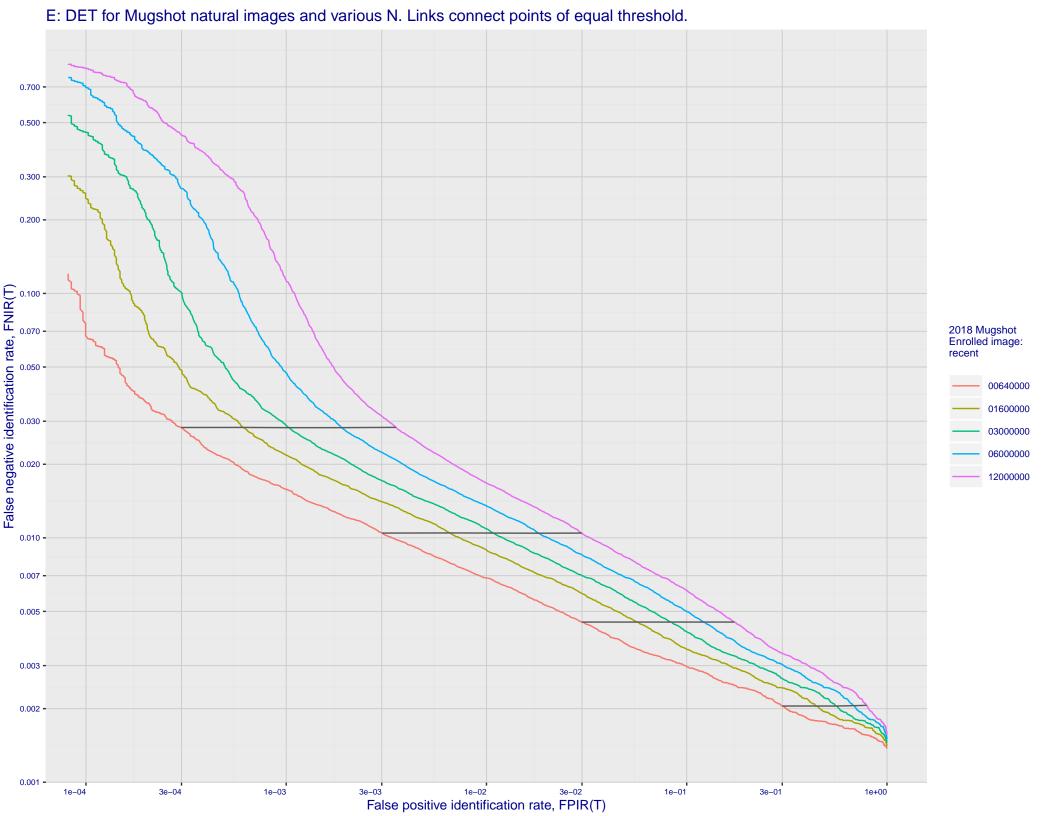
A: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -False negative identification rate, FNIR(T) enrolment\_style consolidated-ONE-MATE random-ONE-MATE recent-ONE-MATE unconsolidated-ALL-MATES unconsolidated-ANY-MATE 0.007 -0.005 -0.003 -0.002 1e-04 3e-04 1e-03 3e-03 1e-02 3e-02 1e-01 3e-01 1e+00 1e-04 3e-04 1e-03 3e-03 1e-02 3e-02 1e-01 3e-01 1e+00 1e-04 3e-04 1e-03 3e-03 1e-02 3e-02 1e-01 3e-01 1e+00 1e-04 3e-04 1e-03 3e-03 1e-02 3e-02 1e-01 3e-01 1e+00 1e-04 3e-04 1e-03 3e-03 1e-02 3e-02 1e-01 3e-01 1e+00 1e-04 3e-04 1e-03 3e-03 1e-02 3e-02 1e-01 3e-01 1e+00 1e-04 3e-04 1e-03 3e-03 1e-02 3e-02 1e-01 3e-01 1e+00 1e-04 3e-04 1e-03 3e-03 1e-02 3e-02 1e-01 3e-01 1e+00 1e-04 3e-04 1e-03 3e-03 1e-02 3e-02 1e-01 3e-01 1e+00 1e-04 3e-04 1e-03 3e-03 1e-02 3e-02 1e-01 3e-01 1e+00 1e-04 3e-04 1e-03 3e-03 1e-02 3e-02 1e-01 3e-01 1e-01 False positive identification rate, FPIR(T)

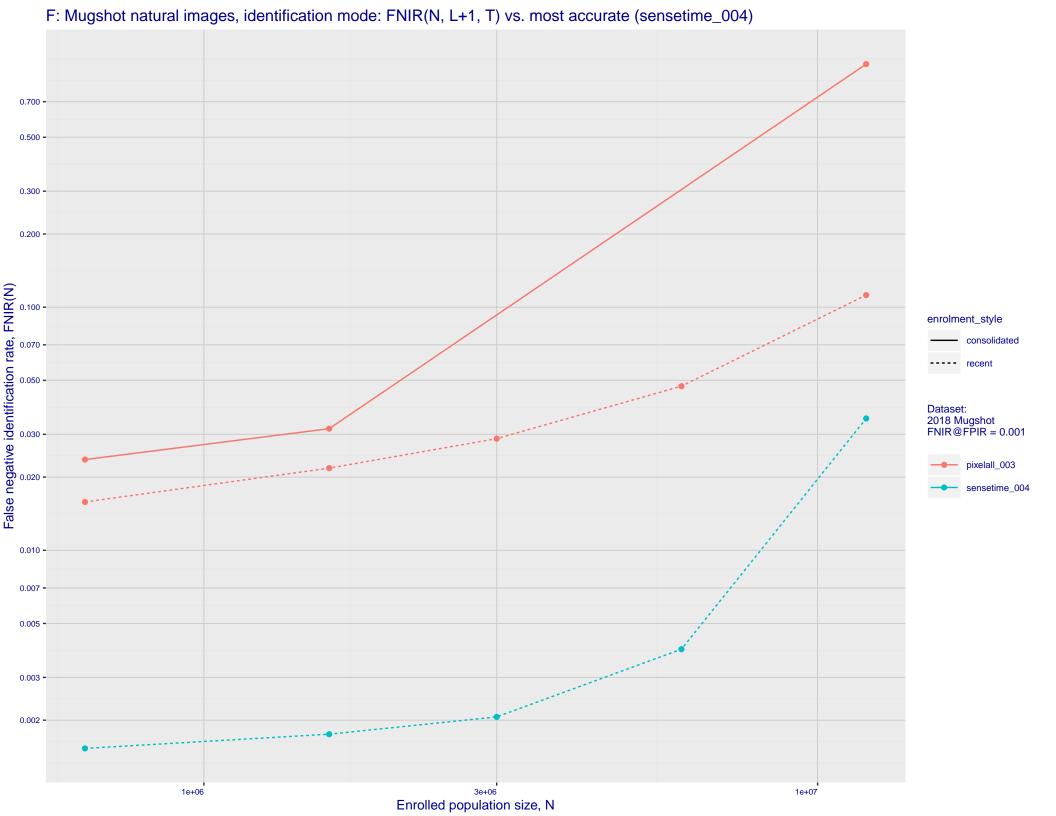
B: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images







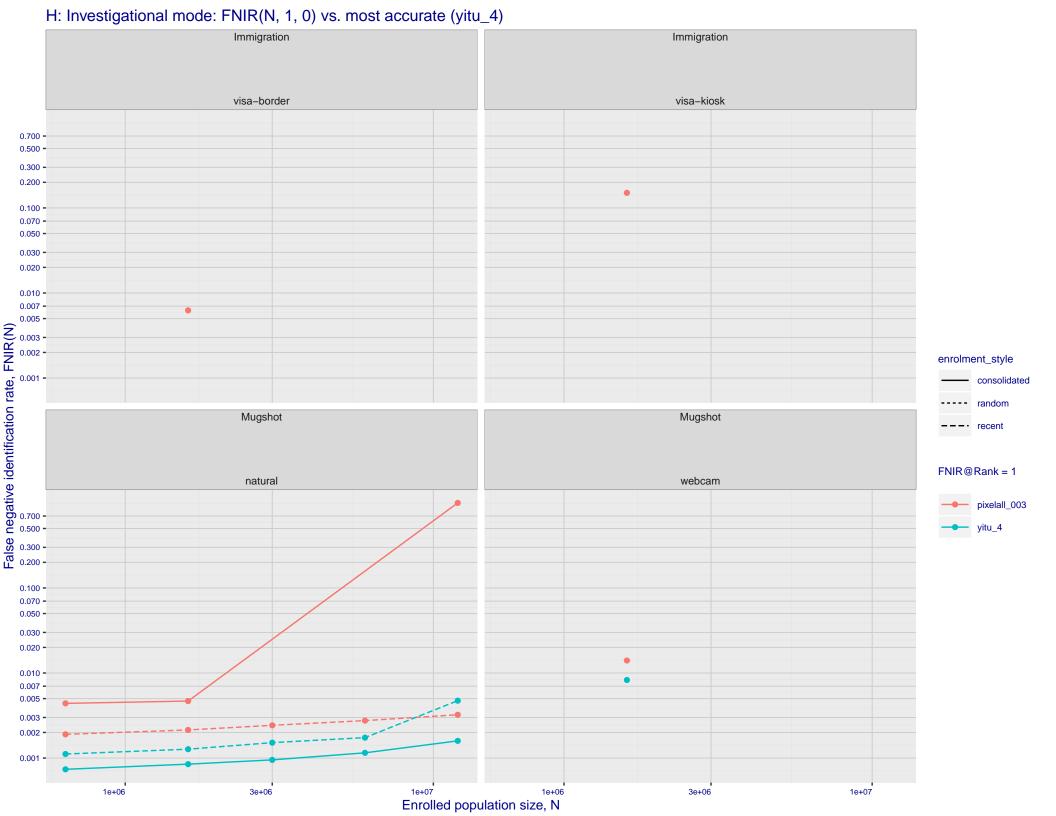


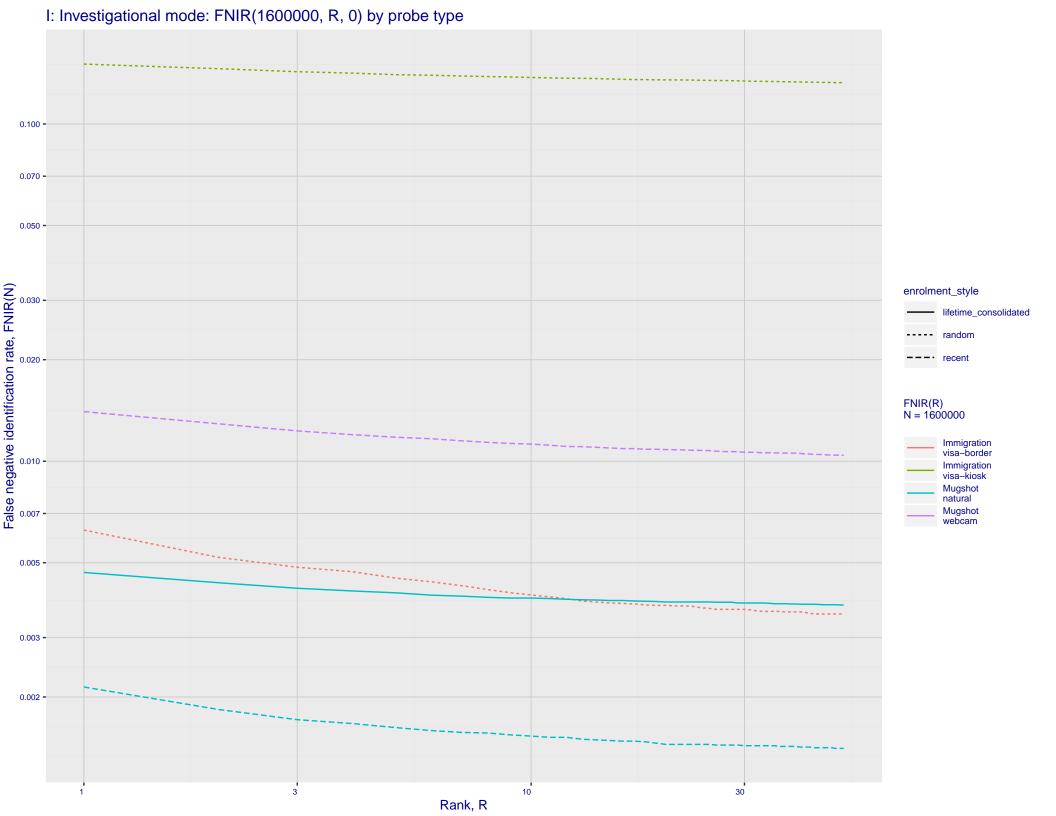


## G: Datasheet

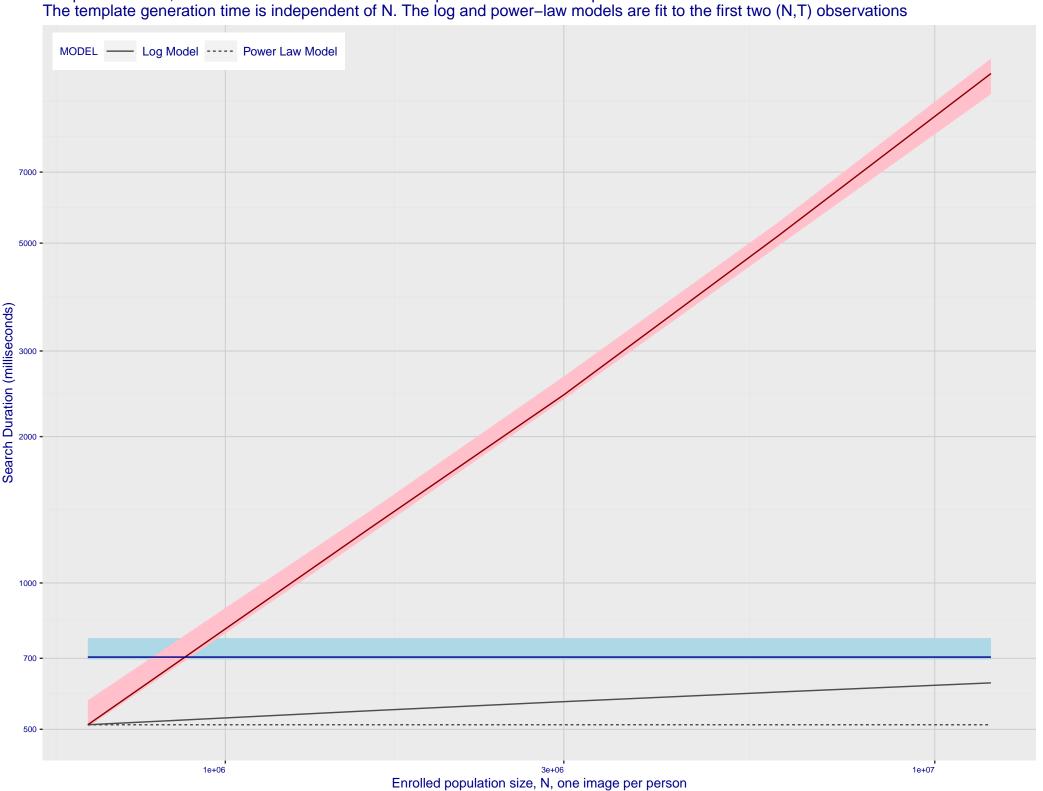
Algorithm: pixelall\_003 Developer: Guangzhou Pixel Solutions Co Ltd Submission Date: 2019\_11\_05 Template size: 2560 bytes Template time (2.5 percentile): 696 msec Template time (median): 704 msec Template time (97.5 percentile): 770 msec Frontal mugshot investigation rank 26 -- FNIR(1600000, 0, 1) = 0.0021 vs. lowest 0.0010 from sensetime\_004 natural investigation rank 27 -- FNIR(1600000, 0, 1) = 0.0140 vs. lowest 0.0067 from sensetime\_003 natural investigation rank 76 -- FNIR(1600000, 0, 1) = 0.3913 vs. lowest 0.0492 from paravision\_005 natural investigation rank 76 -- FNIR(1600000, 0, 1) = 0.3913 vs. lowest 0.0492 from paravision\_005 natural investigation rank 33 -- FNIR(1600000, 0, 1) = 0.0062 vs. lowest 0.0014 from visionlabs\_009 natural investigation rank 50 -- FNIR(1600000, 0, 1) = 0.1505 vs. lowest 0.0694 from cib\_000 Frontal mugshot identification rank 29 -- FNIR(1600000, T, L+1) = 0.0218 vs. lowest 0.0018 from sensetime\_004 natural identification rank 31 -- FNIR(1600000, T, L+1) = 0.0724 vs. lowest 0.0122 from sensetime\_003 natural identification rank 137 -- FNIR(1600000, T, L+1) = 0.9993 vs. lowest 0.1020 from sensetime\_004 natural identification rank 27 -- FNIR(1600000, T, L+1) = 0.0374 vs. lowest 0.0059 from sensetime\_004

natural identification rank 54 -- FNIR(1600000, T, L+1) = 0.5551 vs. lowest 0.1129 from visionlabs\_009





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 - Log Model ---- Power Law Model



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

