

# A: Datasheet

Algorithm: xforwardai\_001

Developer: Xforward AI Technology

Submission Date: 2021\_01\_21

Template size: 2048 bytes

Template time (2.5 percentile): 676 msec

Template time (median): 677 msec

Template time (97.5 percentile): 696 msec

Investigation:

Frontal mugshot ranking 29 (out of 259) — FNIR(1600000, 0, 1) = 0.0020 vs. lowest 0.0009 from sensetime\_005

Mugshot webcam ranking 26 (out of 221) — FNIR(1600000, 0, 1) = 0.0125 vs. lowest 0.0062 from sensetime\_005

Mugshot profile ranking 3 (out of 190) — FNIR(1600000, 0, 1) = 0.0667 vs. lowest 0.0591 from sensetime\_005

Immigration visa–border ranking 11 (out of 142) — FNIR(1600000, 0, 1) = 0.0028 vs. lowest 0.0014 from visionlabs\_009

Immigration visa–kiosk ranking 7 (out of 139) — FNIR(1600000, 0, 1) = 0.0819 vs. lowest 0.0694 from cib\_000

Identification:

Frontal mugshot ranking 10 (out of 259) — FNIR(1600000, T, L+1) = 0.0048, FPIR=0.001000 vs. lowest 0.0018 from sensetime\_004

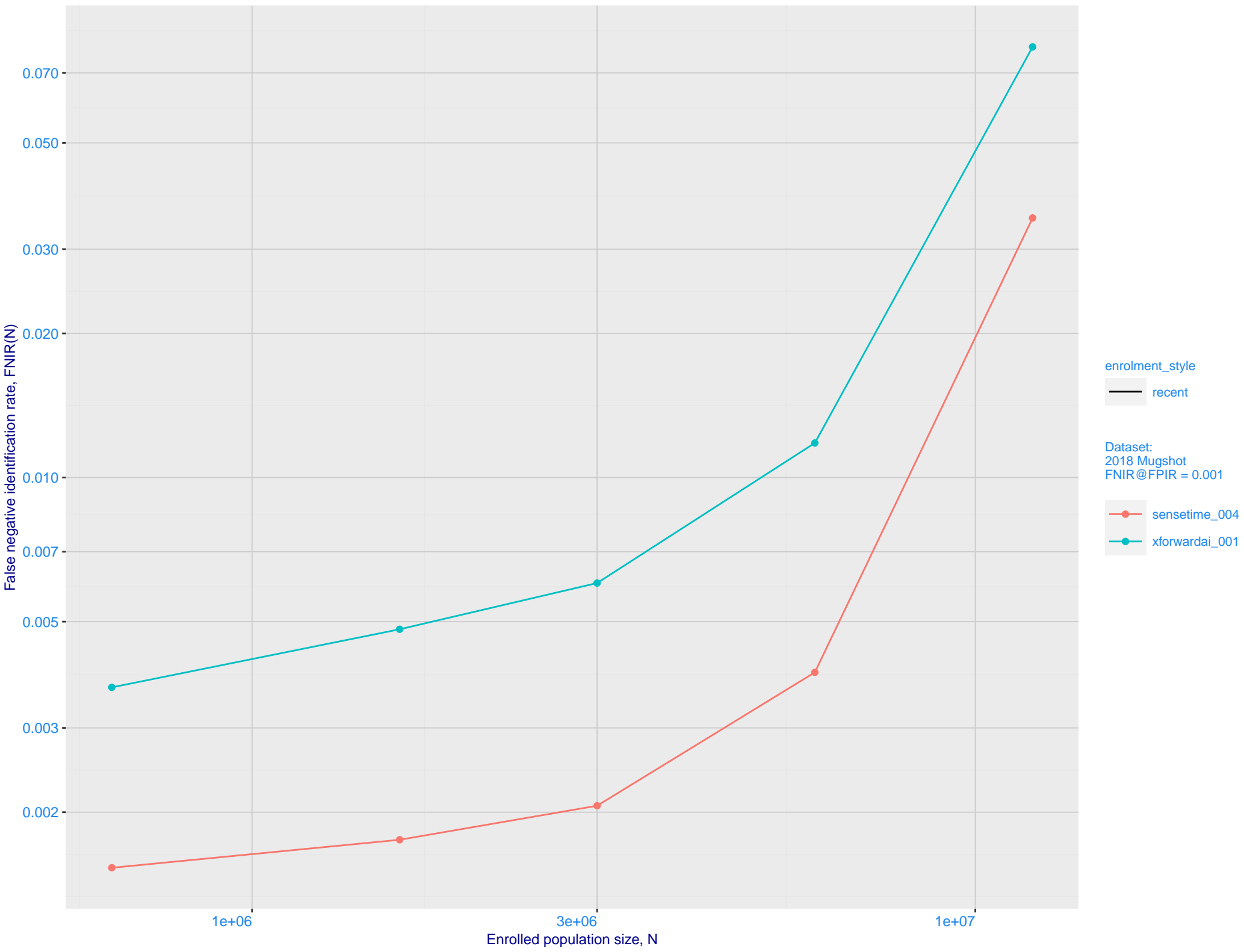
Mugshot webcam ranking 12 (out of 219) — FNIR(1600000, T, L+1) = 0.0282, FPIR=0.001000 vs. lowest 0.0122 from sensetime\_003

Mugshot profile ranking 5 (out of 189) — FNIR(1600000, T, L+1) = 0.4479, FPIR=0.001000 vs. lowest 0.1733 from sensetime\_005

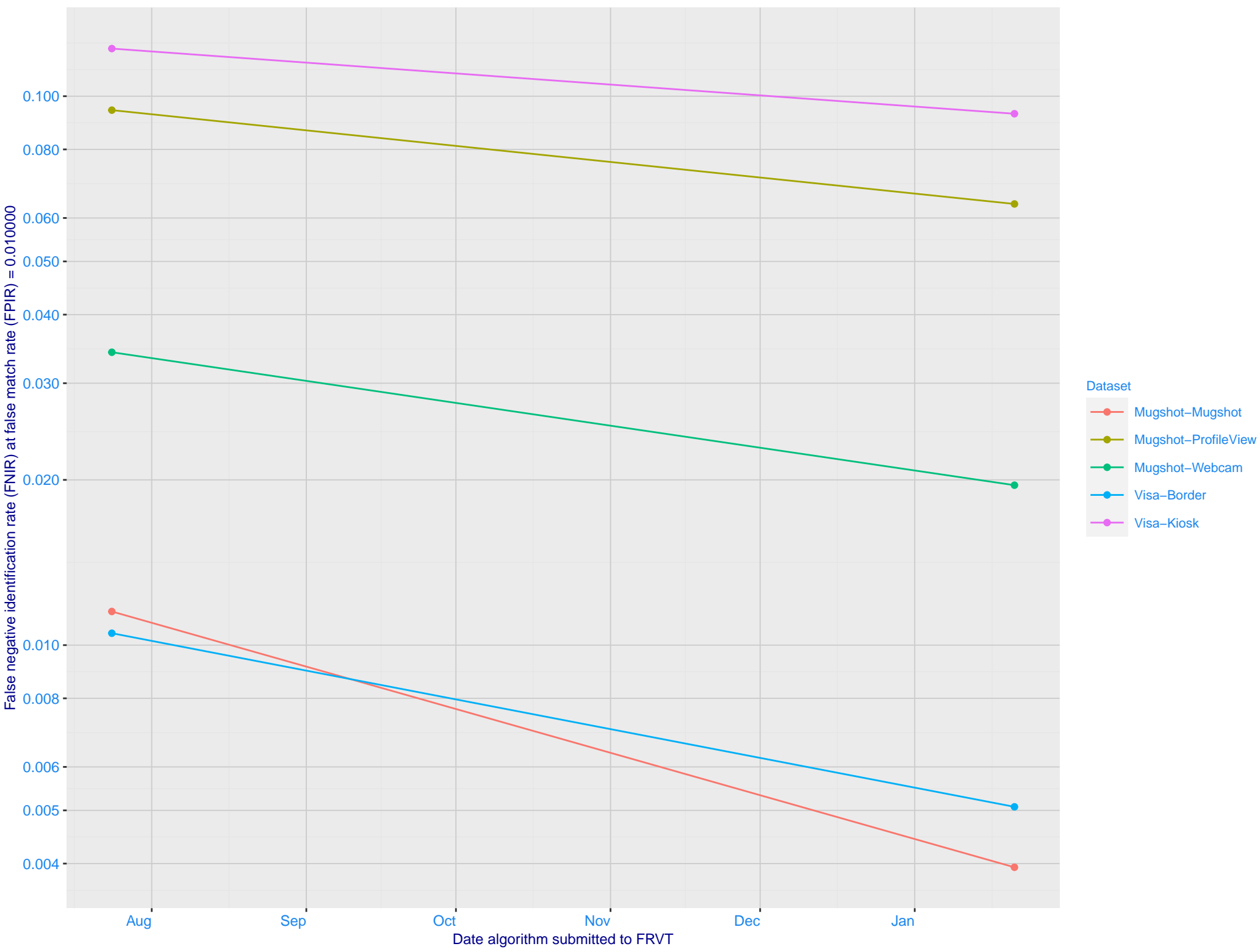
Immigration visa–border ranking 6 (out of 139) — FNIR(1600000, T, L+1) = 0.0080, FPIR=0.001000 vs. lowest 0.0059 from sensetime\_004

Immigration visa–kiosk ranking 4 (out of 134) — FNIR(1600000, T, L+1) = 0.1241, FPIR=0.001000 vs. lowest 0.1048 from sensetime\_005

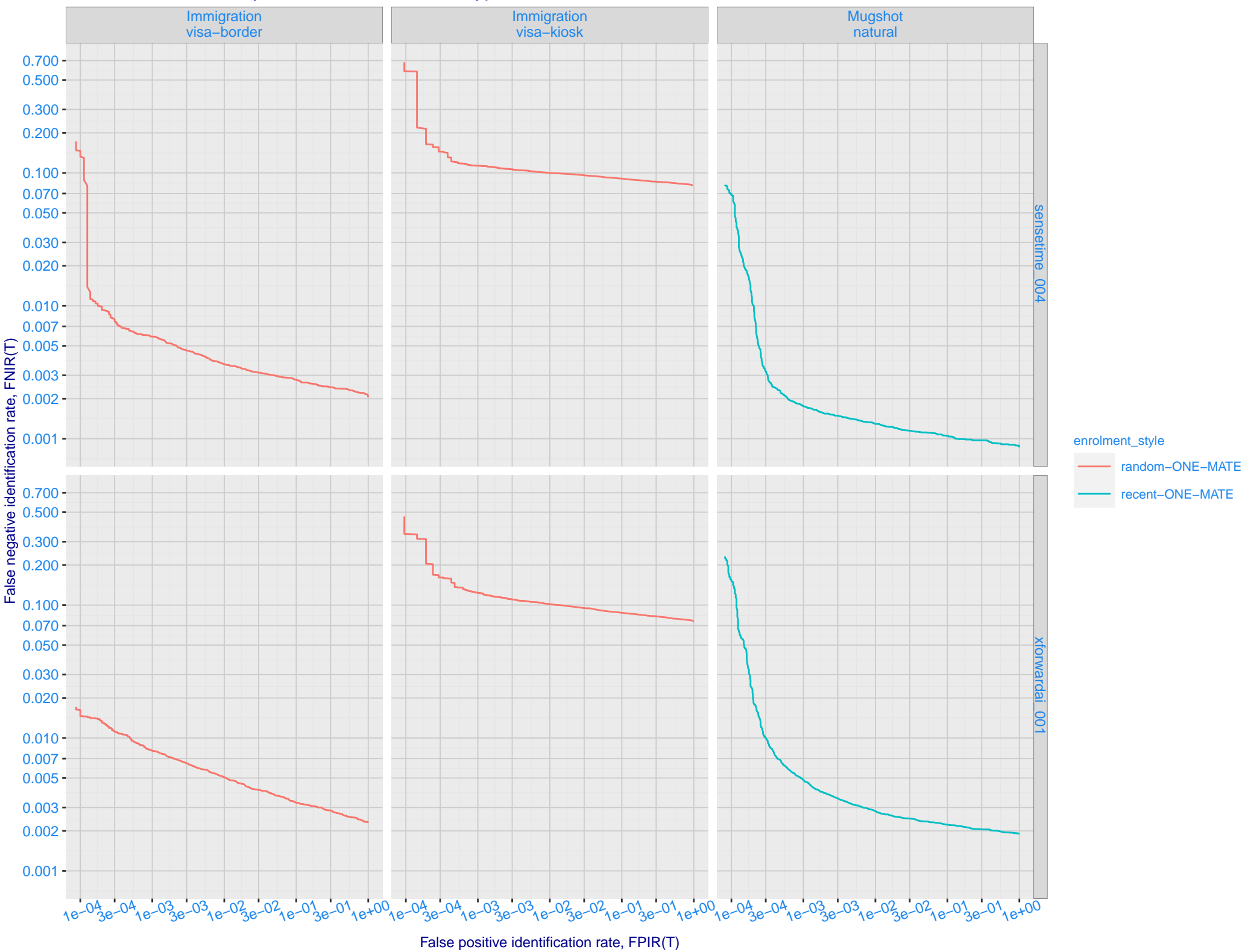
B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime\_004)



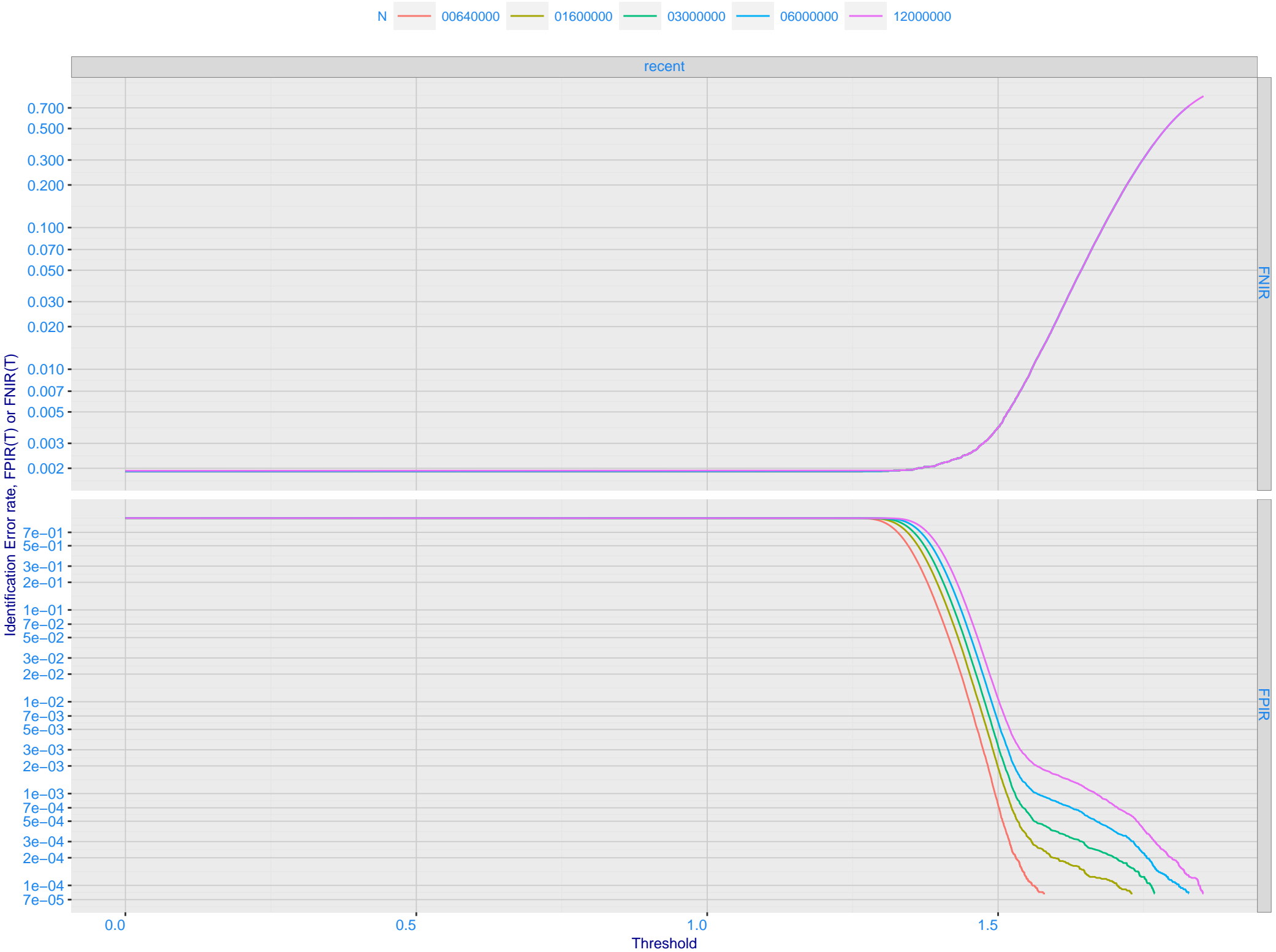
C: Evolution of accuracy for XFORWARDAI algorithms on three datasets 2018 – present



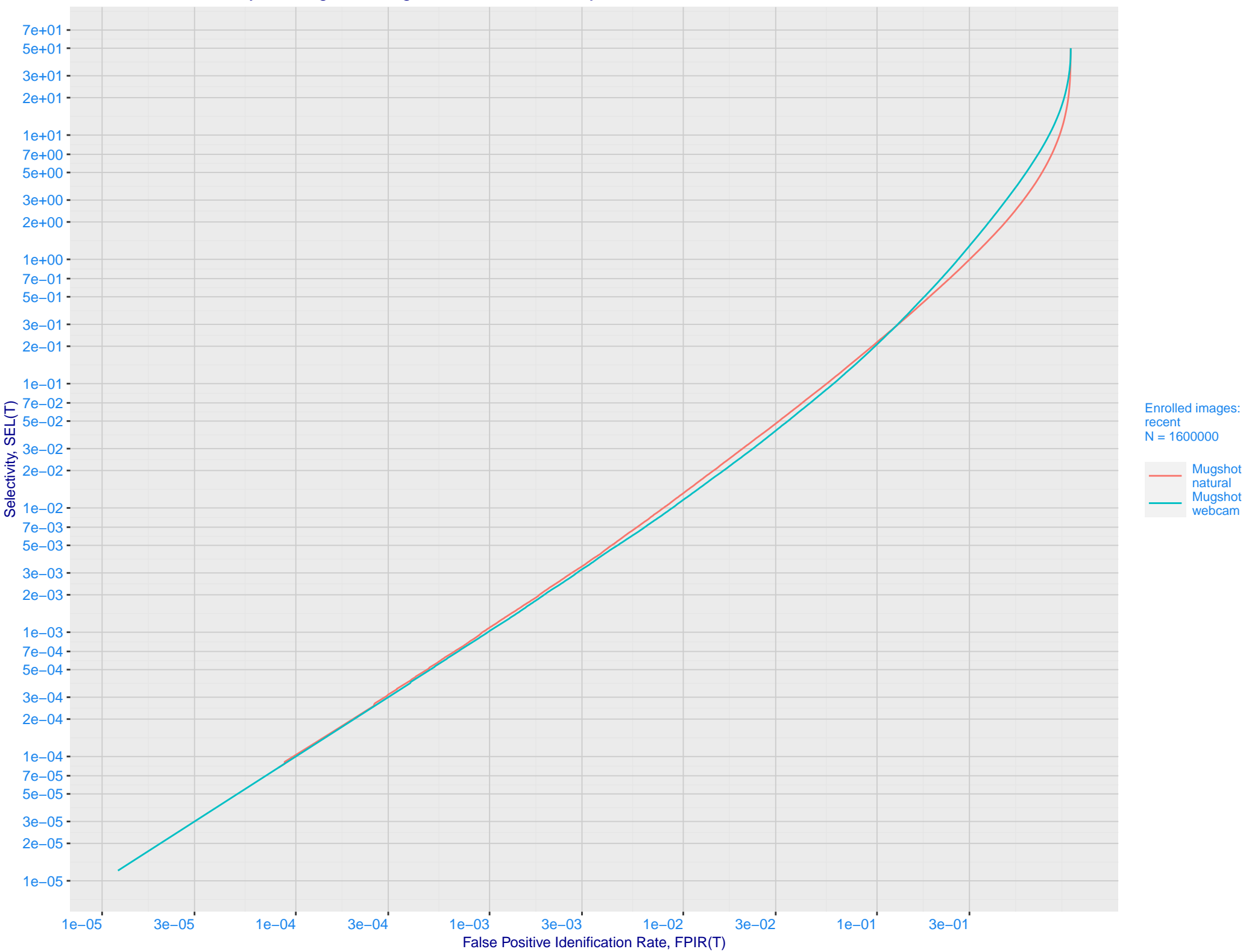
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals



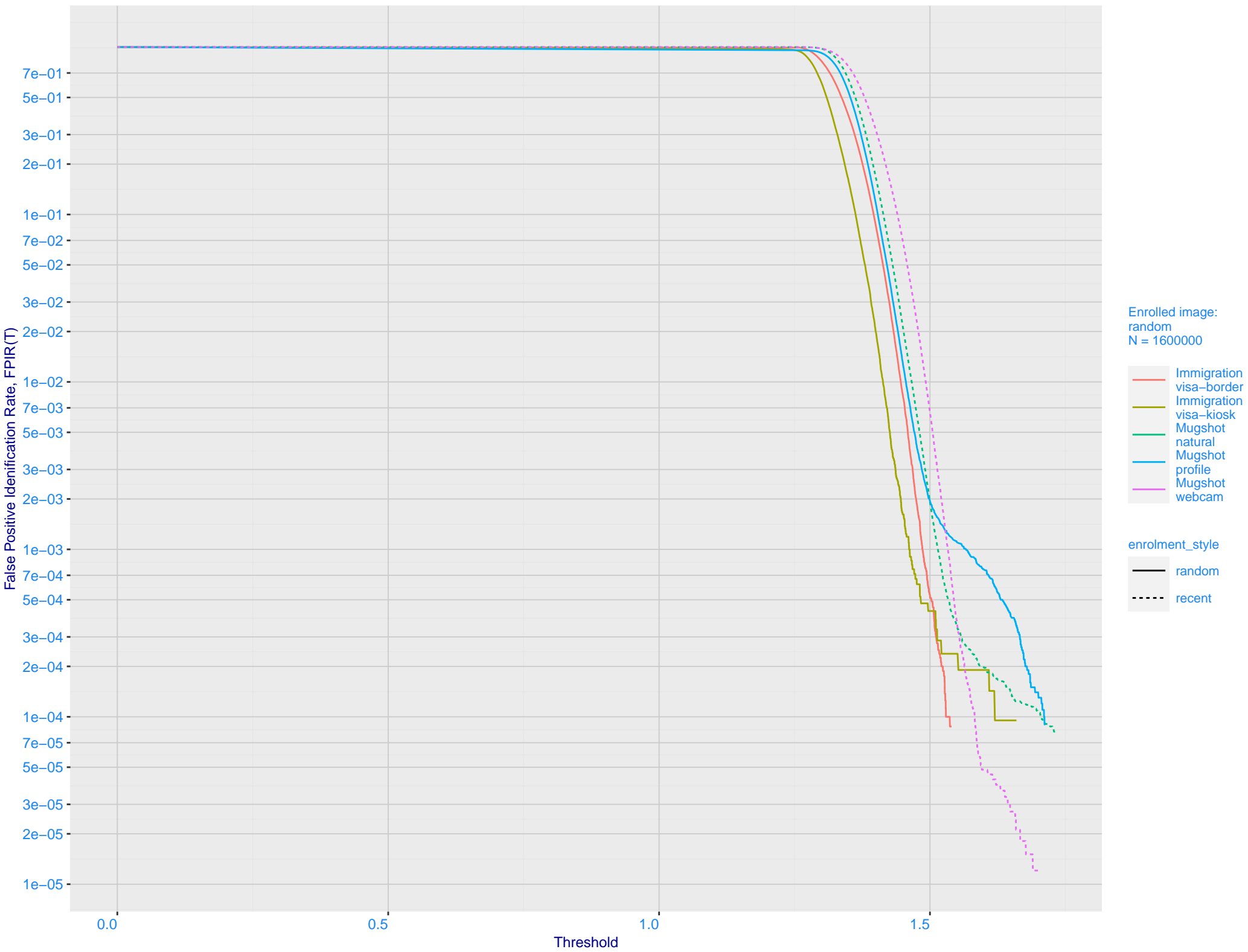
E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



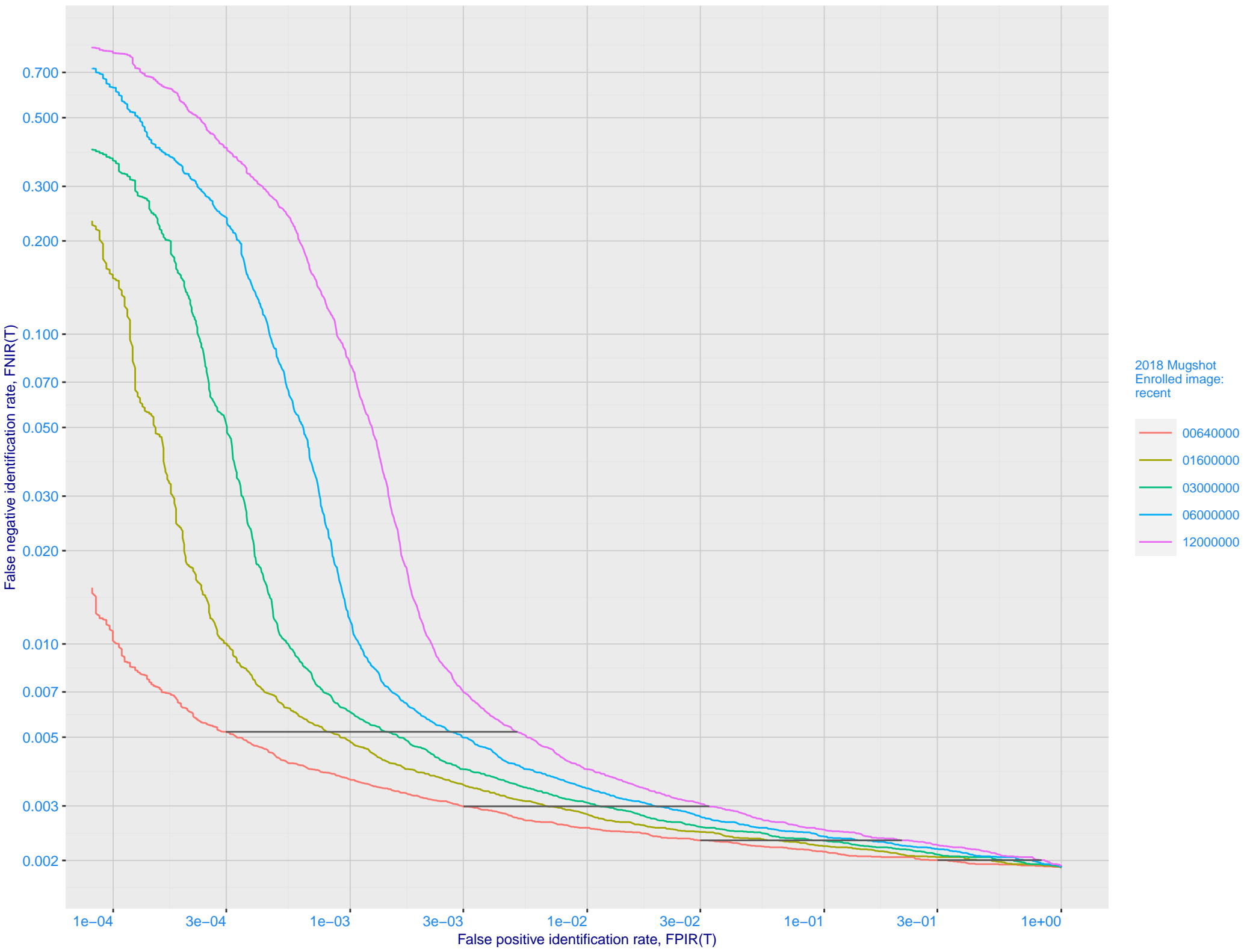
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate



G: FPIR dependence on T by probe type for N = 1600000 subjects

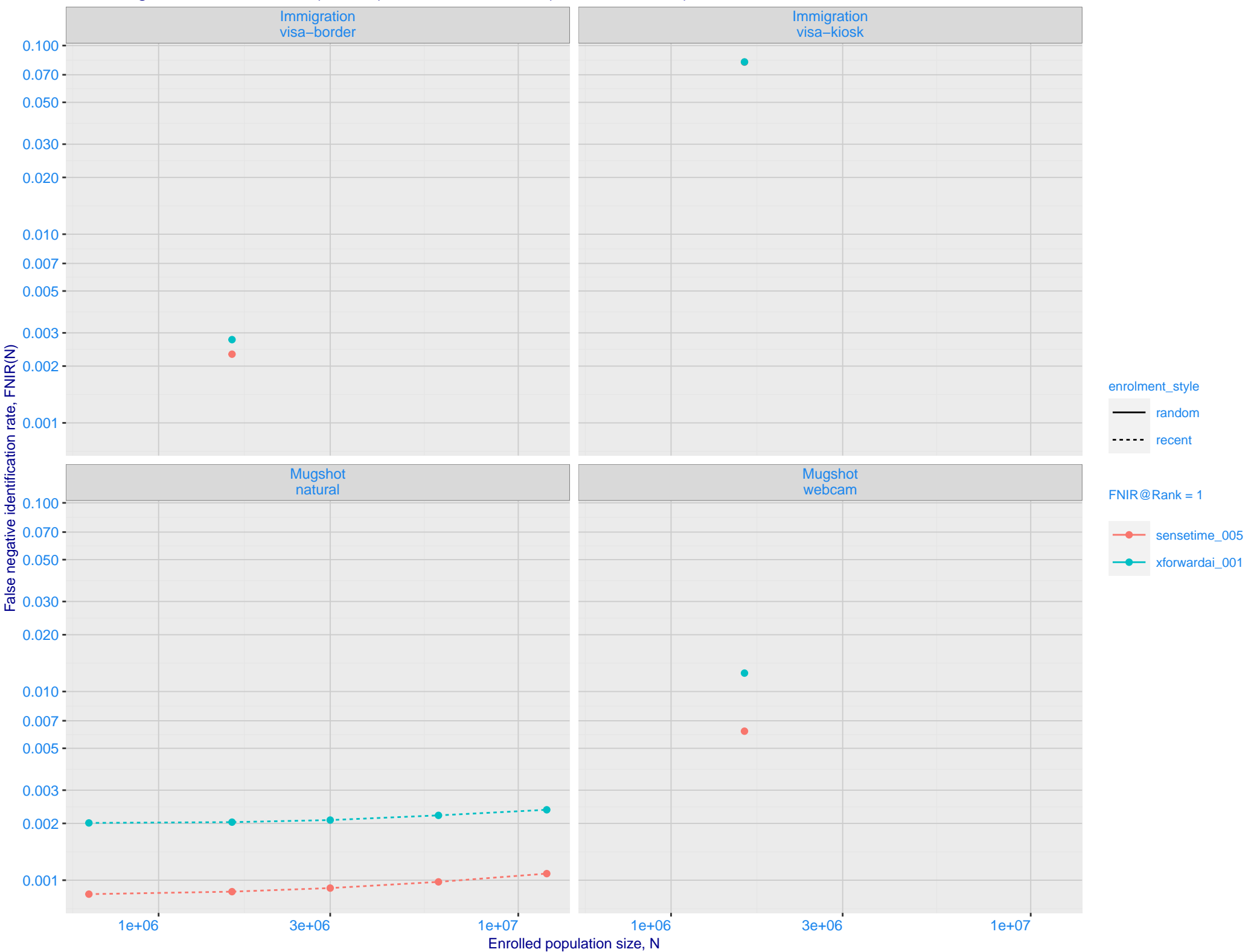


H: DET for Mugshot natural images and various N. Links connect points of equal threshold.

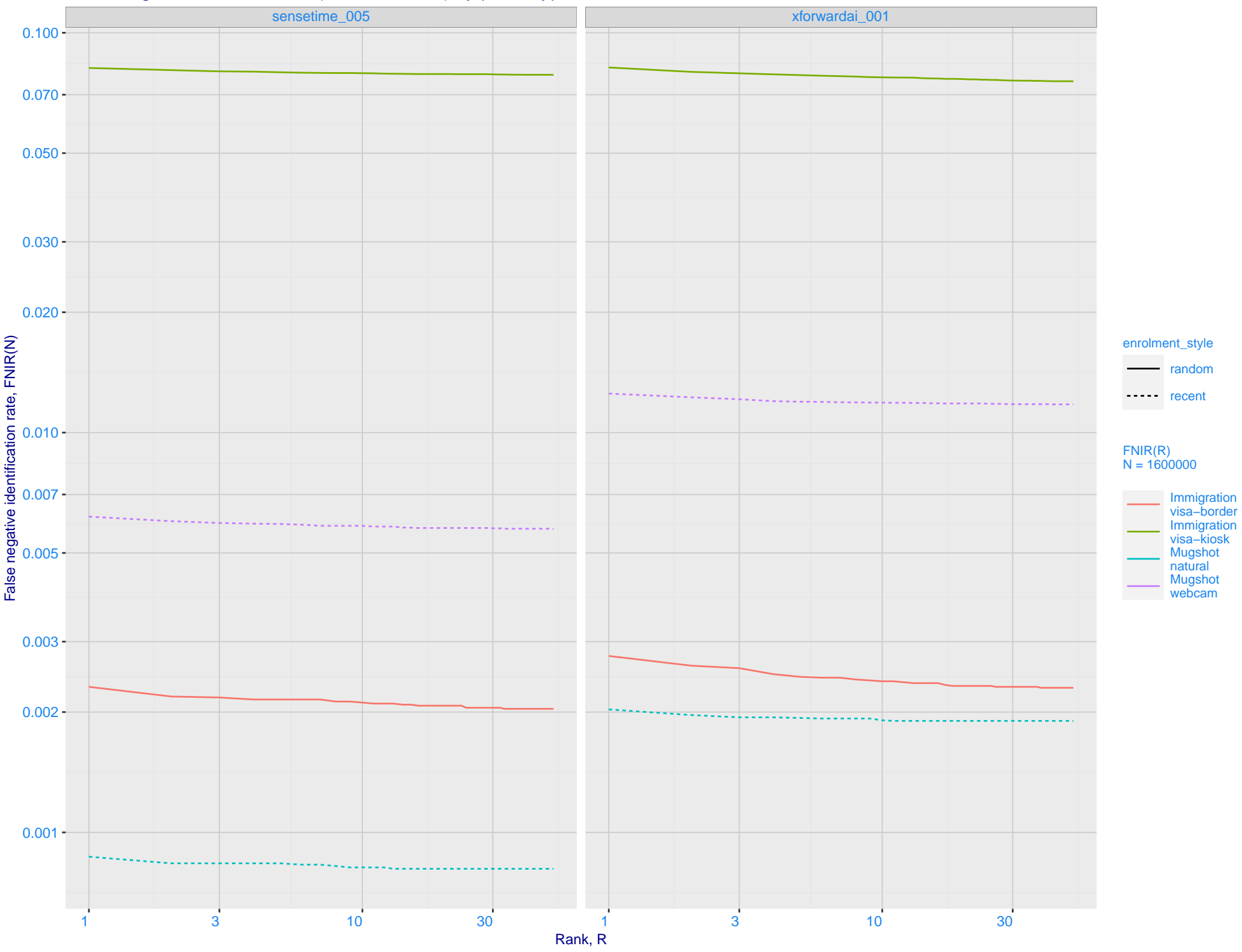




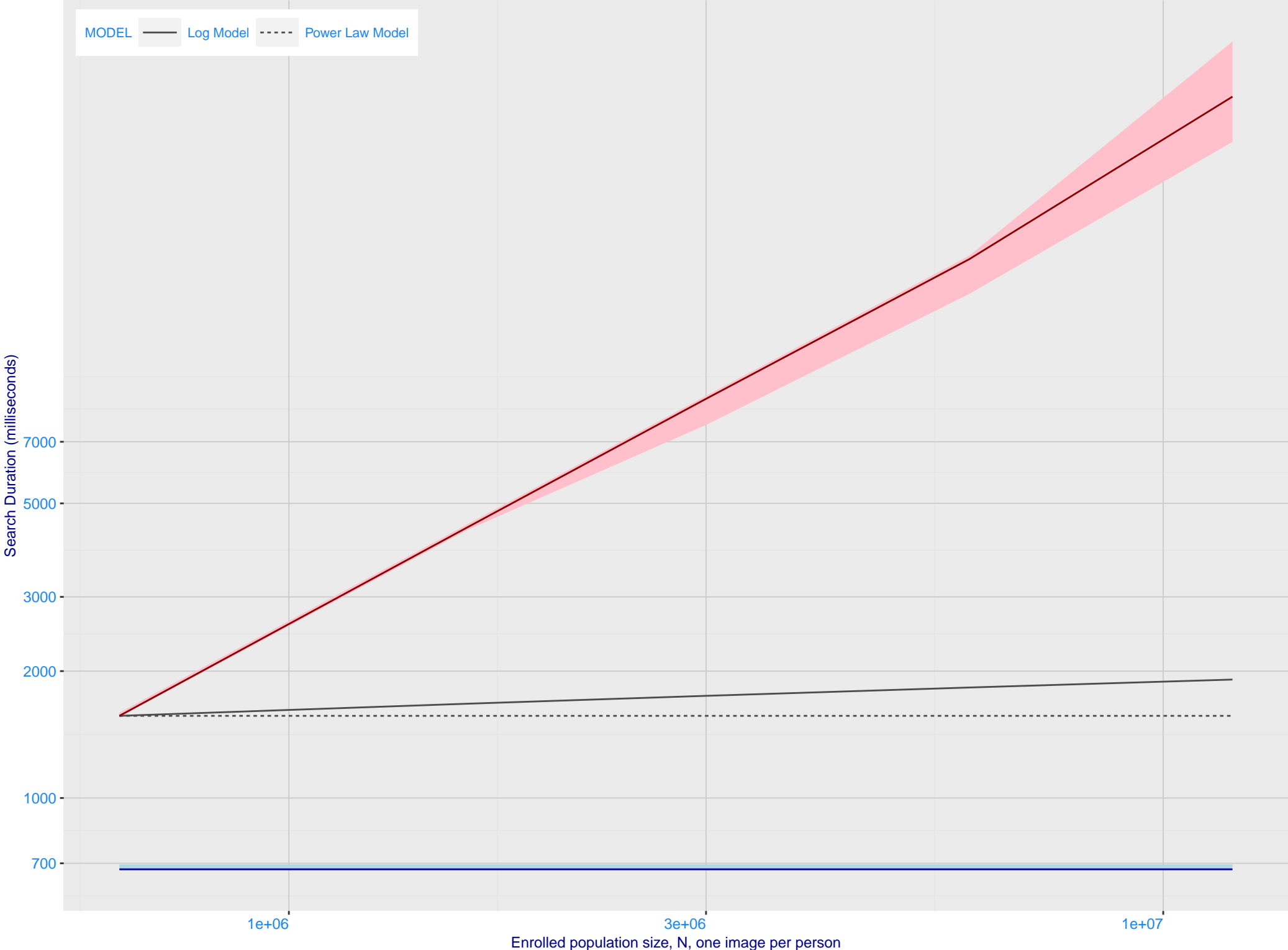
I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime\_005)



# J: Investigational mode: FNIR(1600000, R, 0) by probe type



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

Dataset: 2018 Mugshot N = 3068801

