A: Datasheet

Algorithm: ntechlab_009

Developer: N–Tech Lab

Submission Date: 2021_03_01

Template size: 1300 bytes

Template time (2.5 percentile): 896 msec

Template time (median): 900 msec

Template time (97.5 percentile): 905 msec

Investigation:

Frontal mugshot ranking 8 (out of 265) –– FNIR(1600000, 0, 1) = 0.0013 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 6 (out of 227) –– FNIR(1600000, 0, 1) = 0.0079 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 12 (out of 196) –– FNIR(1600000, 0, 1) = 0.1380 vs. lowest 0.0591 from sensetime_005

Immigration visa–border ranking 6 (out of 148) –– FNIR(1600000, 0, 1) = 0.0022 vs. lowest 0.0013 from visionlabs_010

Immigration visa–kiosk ranking 7 (out of 145) –– FNIR(1600000, 0, 1) = 0.0744 vs. lowest 0.0568 from hr_000

Identification:

Frontal mugshot ranking 12 (out of 265) –– FNIR(1600000, T, L+1) = 0.0049, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004
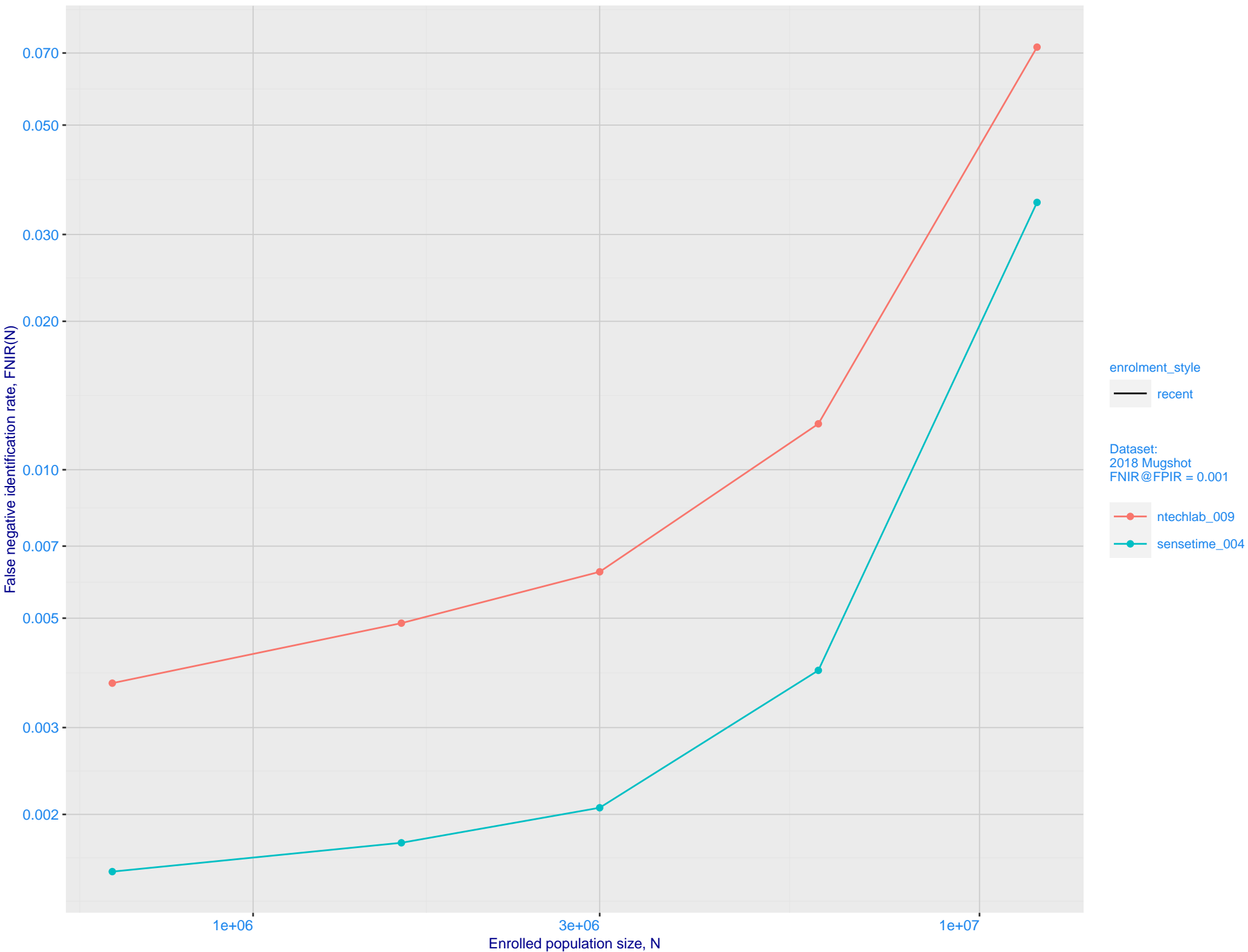
Mugshot webcam ranking 8 (out of 225) –– FNIR(1600000, T, L+1) = 0.0224, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 5 (out of 195) –– FNIR(1600000, T, L+1) = 0.4309, FPIR=0.001000 vs. lowest 0.1331 from hr_000
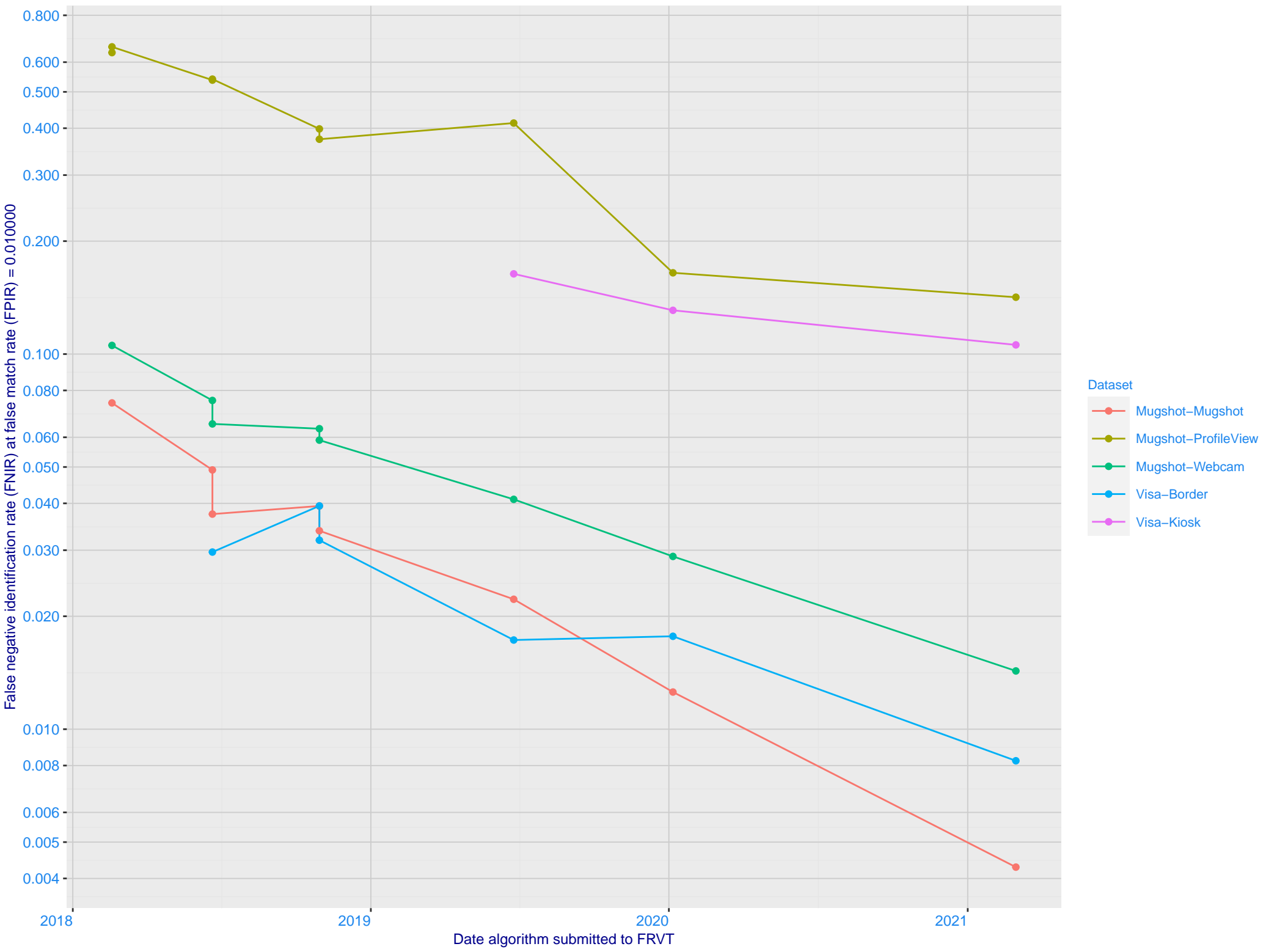
Immigration visa–border ranking 15 (out of 146) –– FNIR(1600000, T, L+1) = 0.0145, FPIR=0.001000 vs. lowest 0.0049 from hr_000

Immigration visa–kiosk ranking 10 (out of 141) –– FNIR(1600000, T, L+1) = 0.1420, FPIR=0.001000 vs. lowest 0.0996 from hr_000
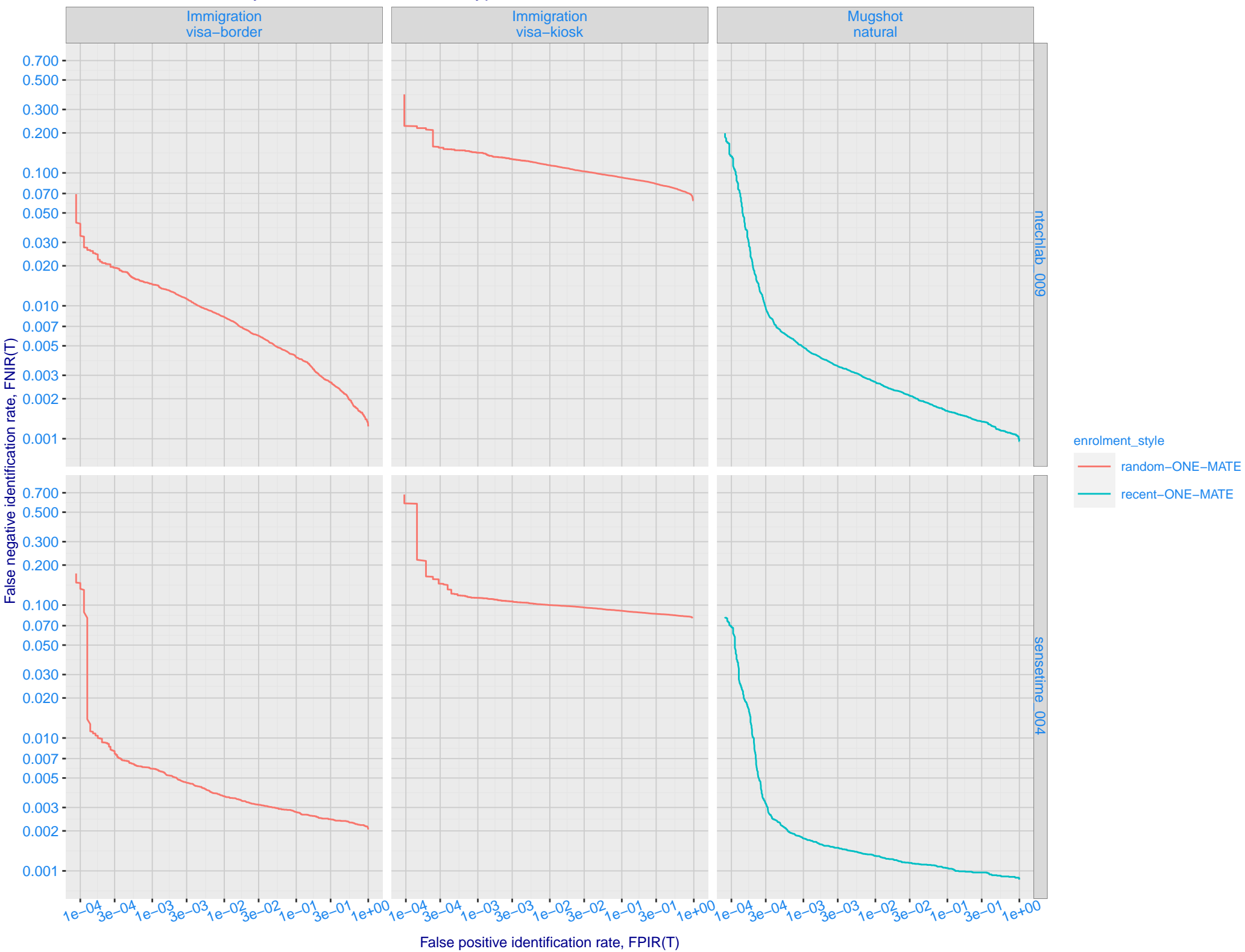
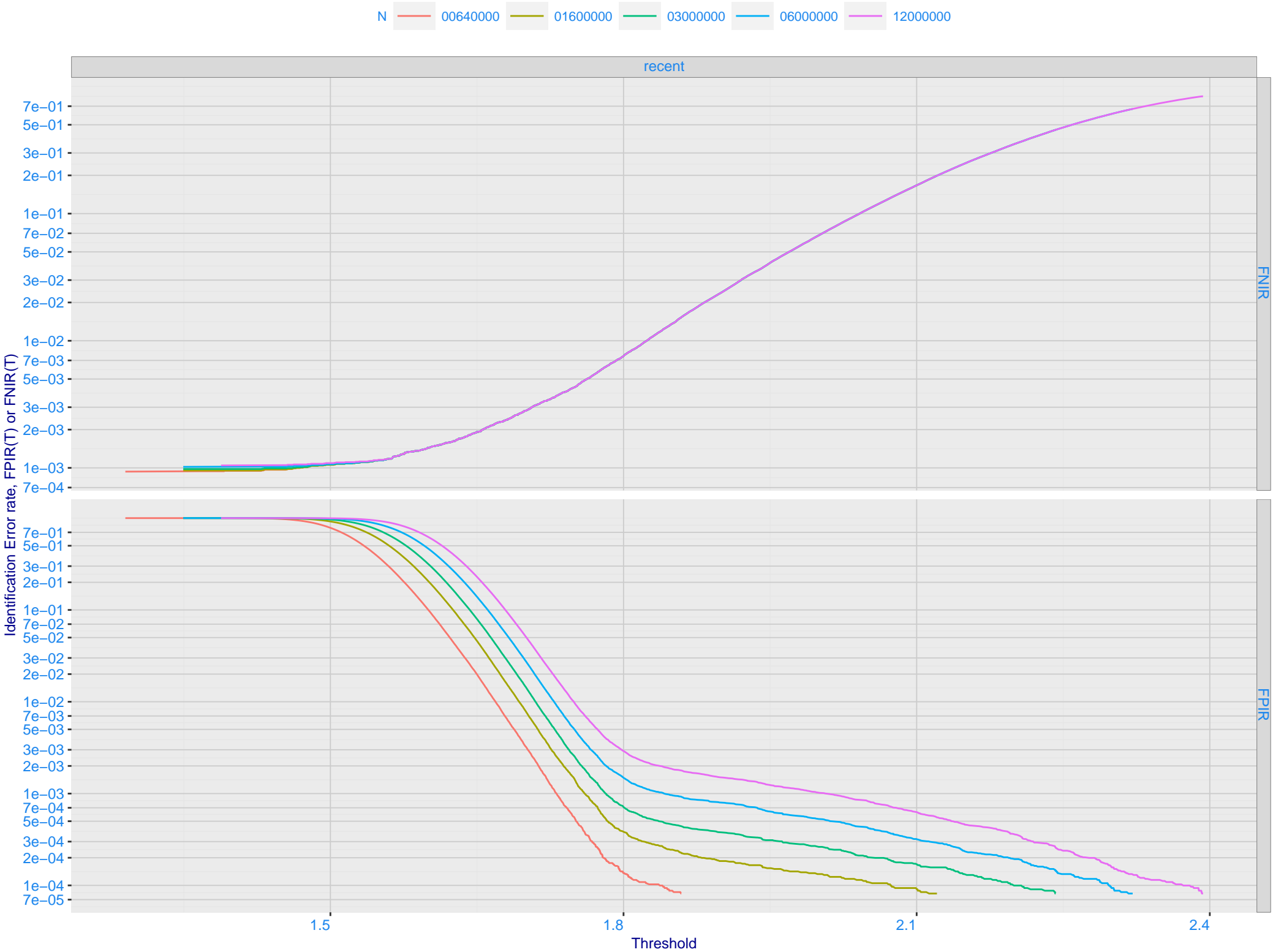B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)

C: Evolution of accuracy for NTECHLAB algorithms on three datasets 2018 – present
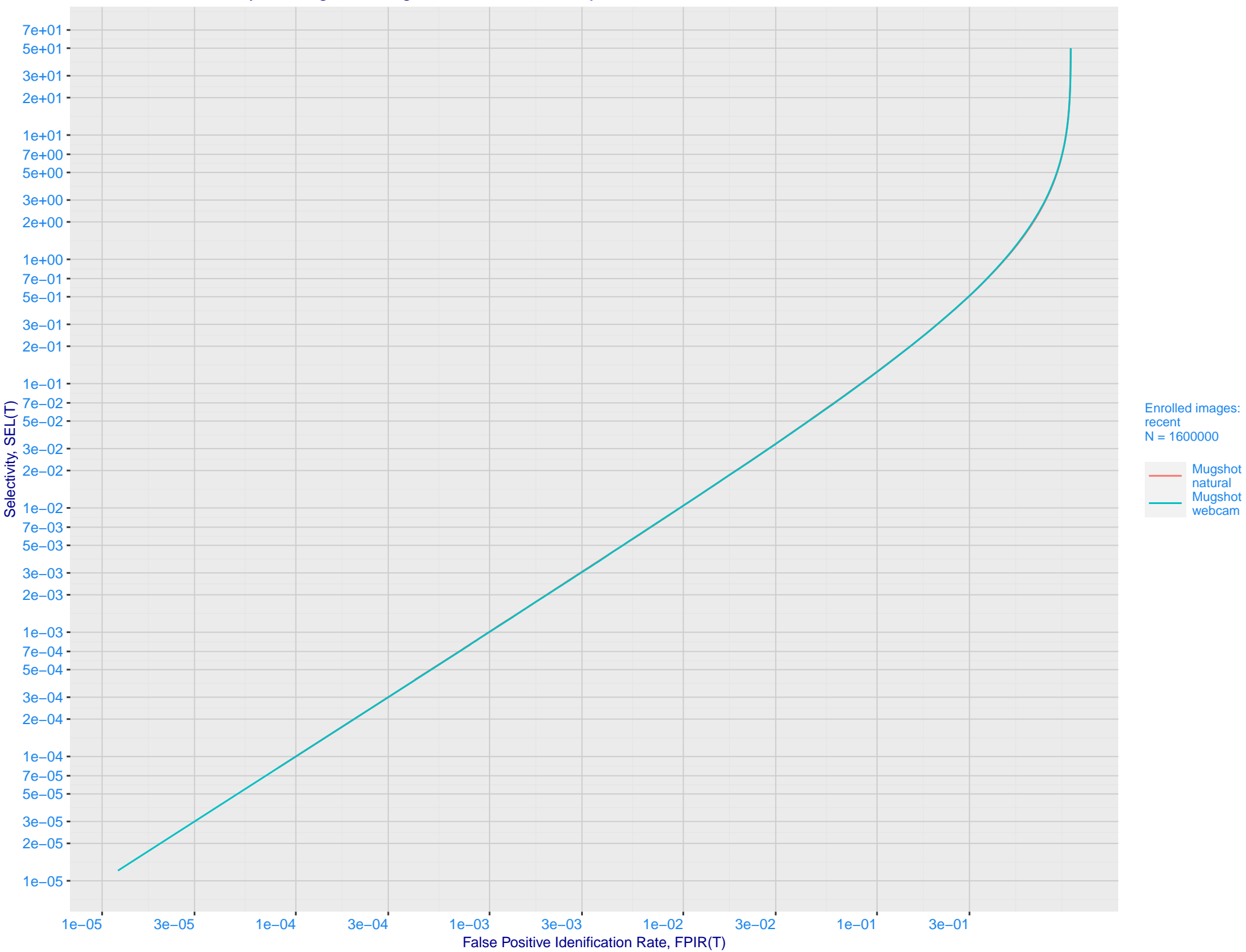
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals
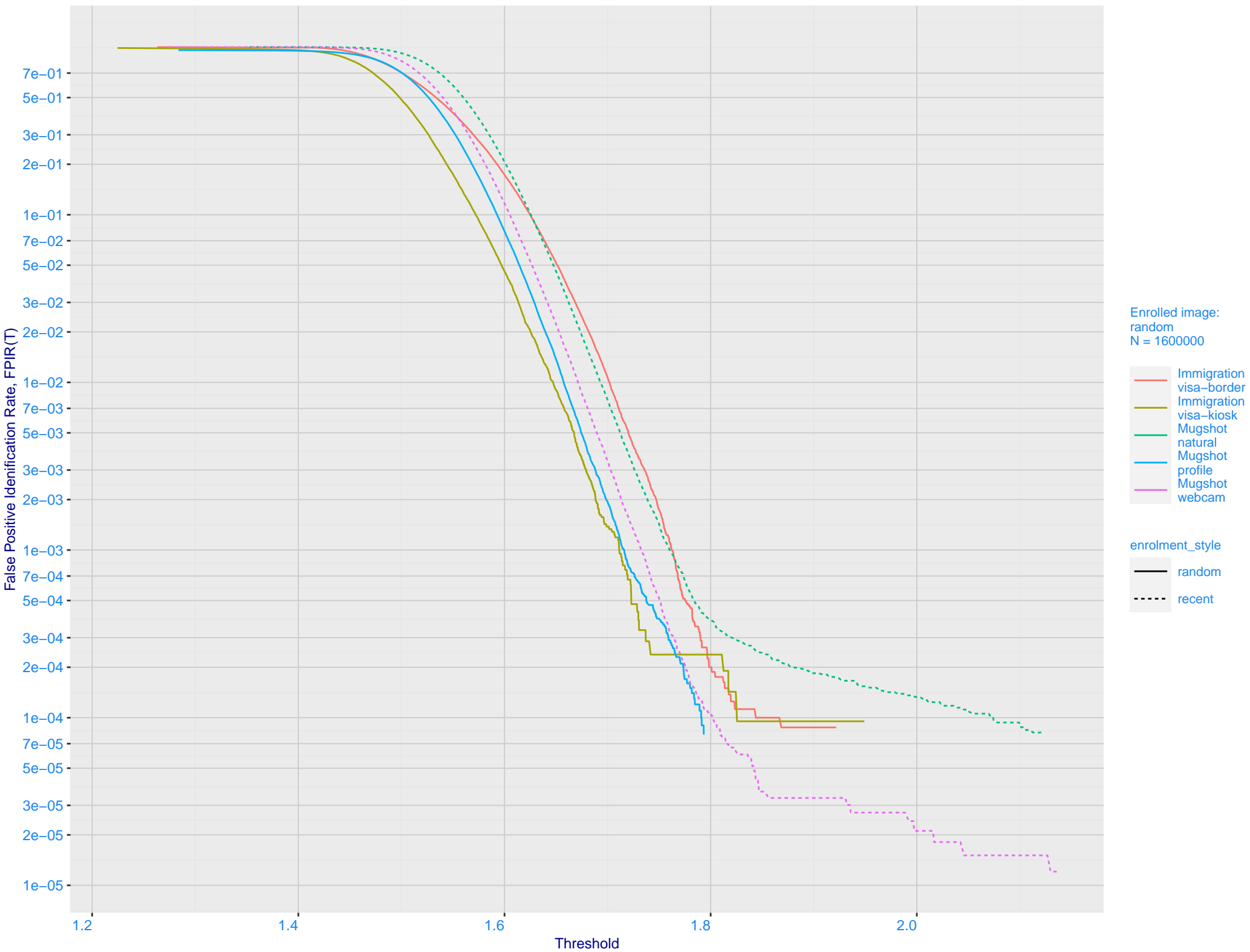
E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images
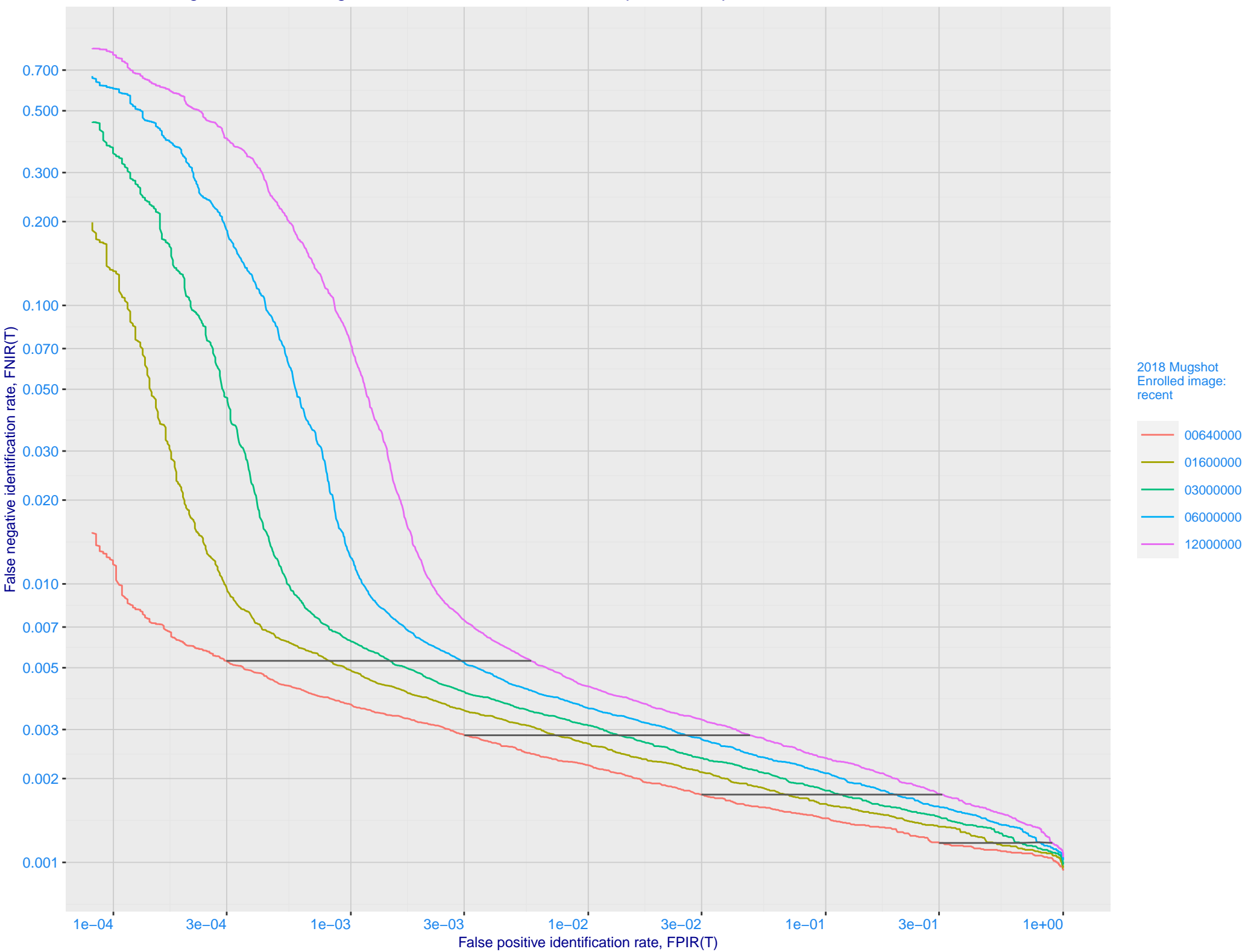
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate
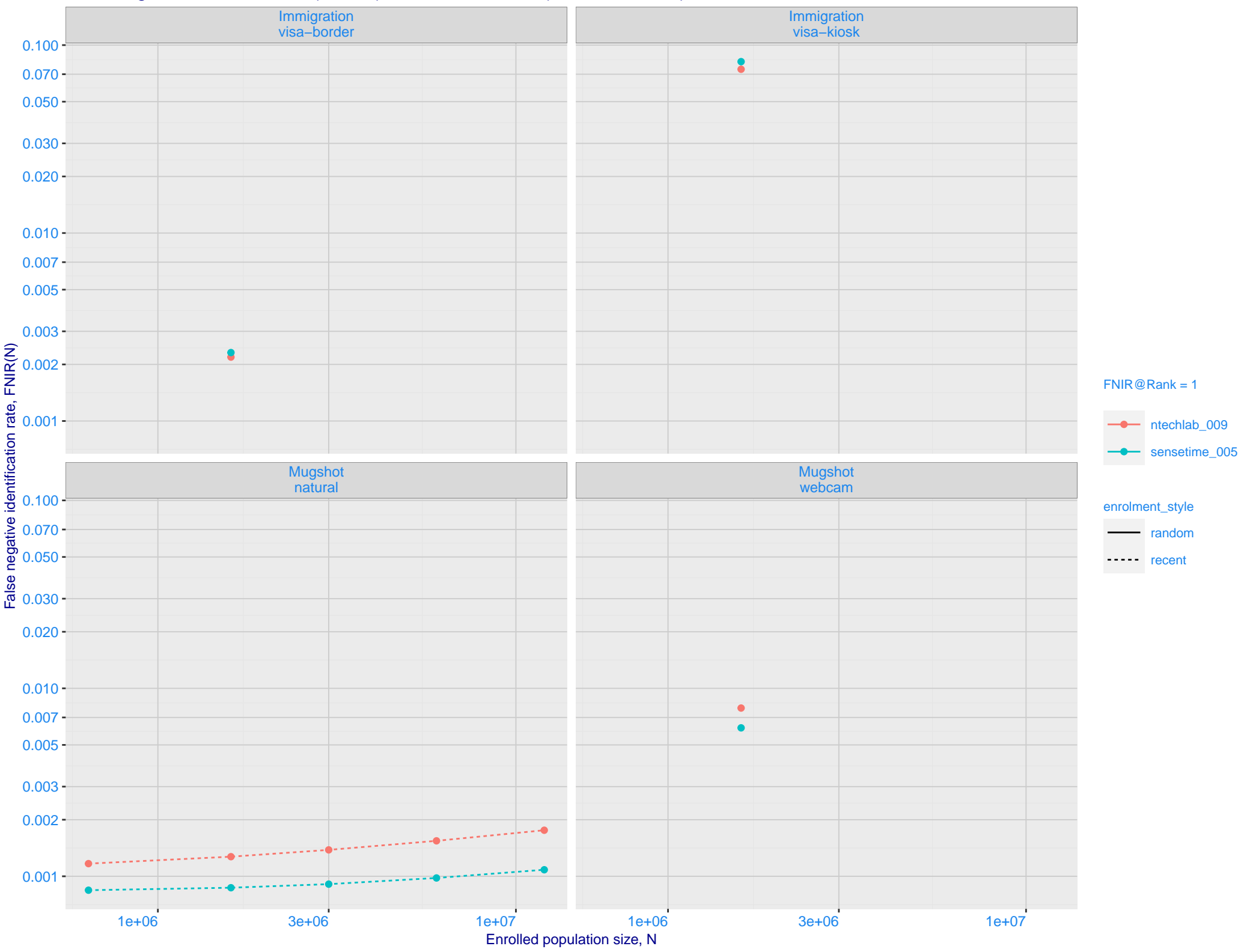
G: FPIR dependence on T by probe type for N = 1600000 subjects

Enrolled image:
random
N = 1600000

Immigration visa–border
Immigration visa–kiosk
Mugshot natural
Mugshot profile
Mugshot webcam

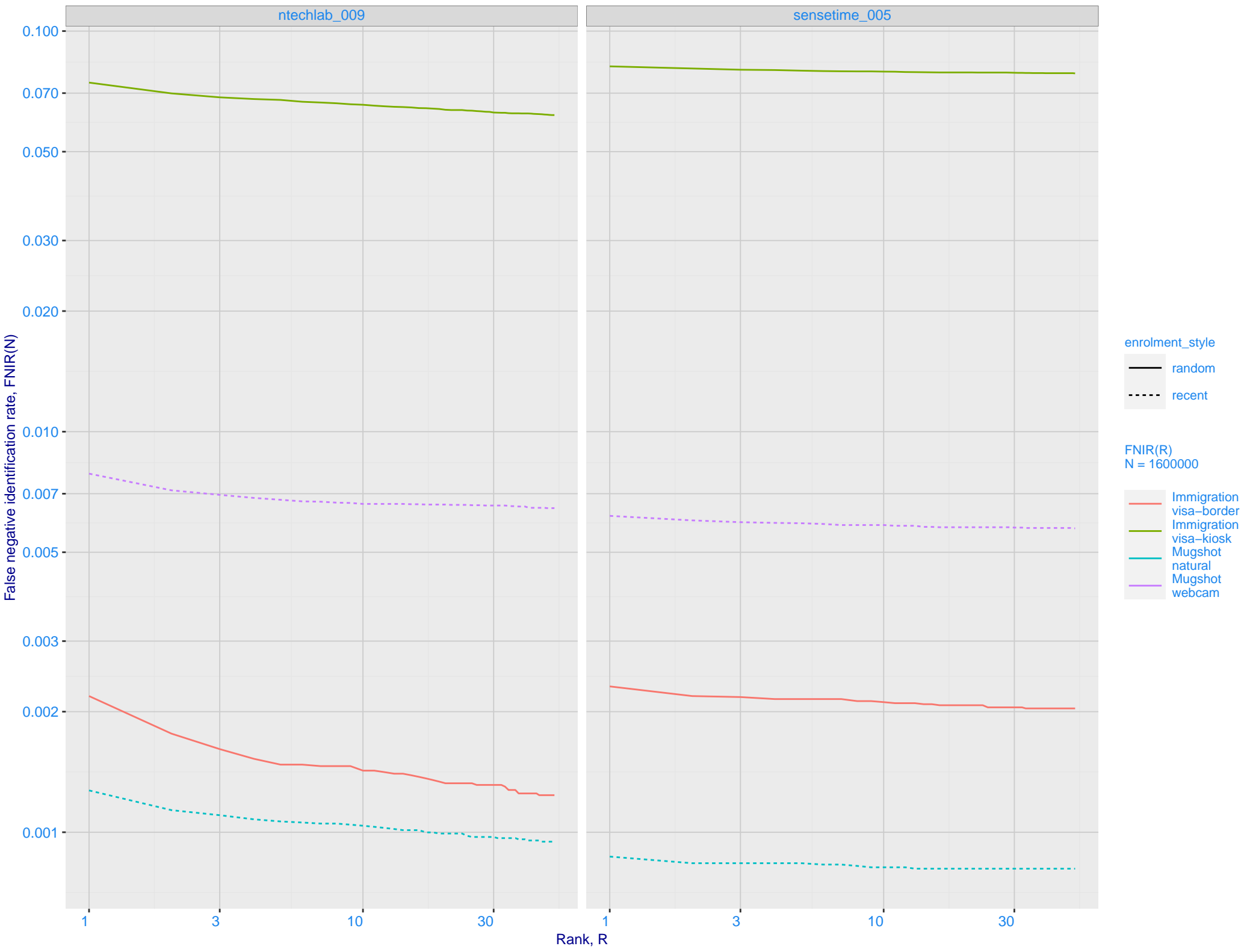enrolment_style
— random
---- recent

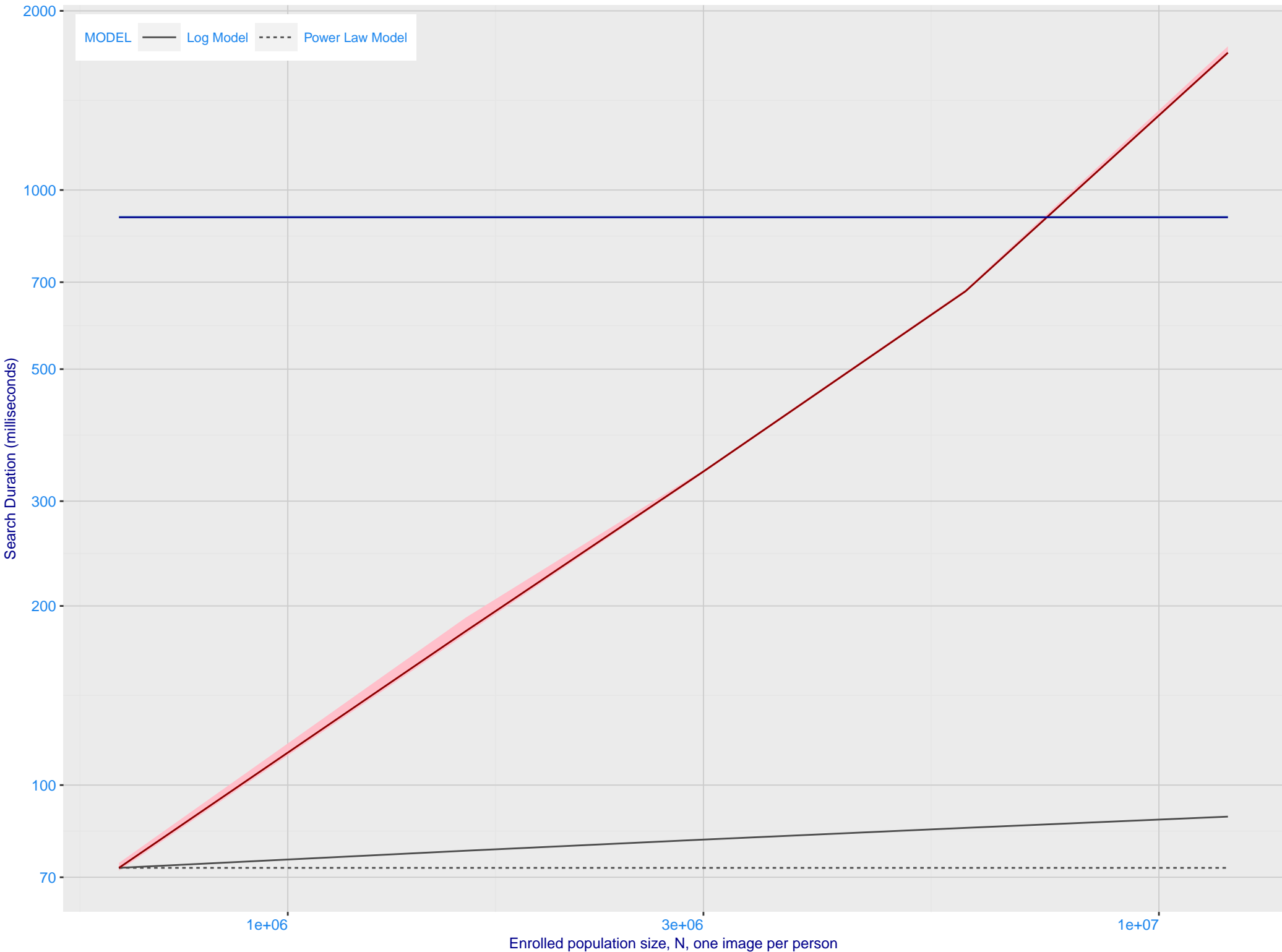H: DET for Mugshot natural images and various N. Links connect points of equal threshold.

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

Legend:
- (00,02]
- (02,04]
- (04,06]
- (06,08]
- (08,10]
- (10,12]
- (12,14]
- (14,18]

FPIR

Rank

sensetime_005

False negative identification rate (FNIR)

False positive identification rate, FPIR   or   Rank, R