A: Datasheet

Algorithm: dermalog_5

Developer: Dermalog

Submission Date: 2018_10_26

Template size: 128 bytes

Template time (2.5 percentile): 506 msec

Template time (median): 528 msec

Template time (97.5 percentile): 583 msec

Investigation:

Frontal mugshot ranking 164 (out of 279) –– FNIR(1600000, 0, 1) = 0.0149 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 135 (out of 241) –– FNIR(1600000, 0, 1) = 0.0367 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 87 (out of 210) –– FNIR(1600000, 0, 1) = 0.7008 vs. lowest 0.0587 from xforwardai_002

Immigration visa–border ranking 138 (out of 168) –– FNIR(1600000, 0, 1) = 0.2421 vs. lowest 0.0013 from visionlabs_010

Immigration visa–kiosk ranking 127 (out of 165) –– FNIR(1600000, 0, 1) = 0.3845 vs. lowest 0.0568 from cloudwalk_hr_000

Identification:

Frontal mugshot ranking 139 (out of 279) –– FNIR(1600000, T, L+1) = 0.0880, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004
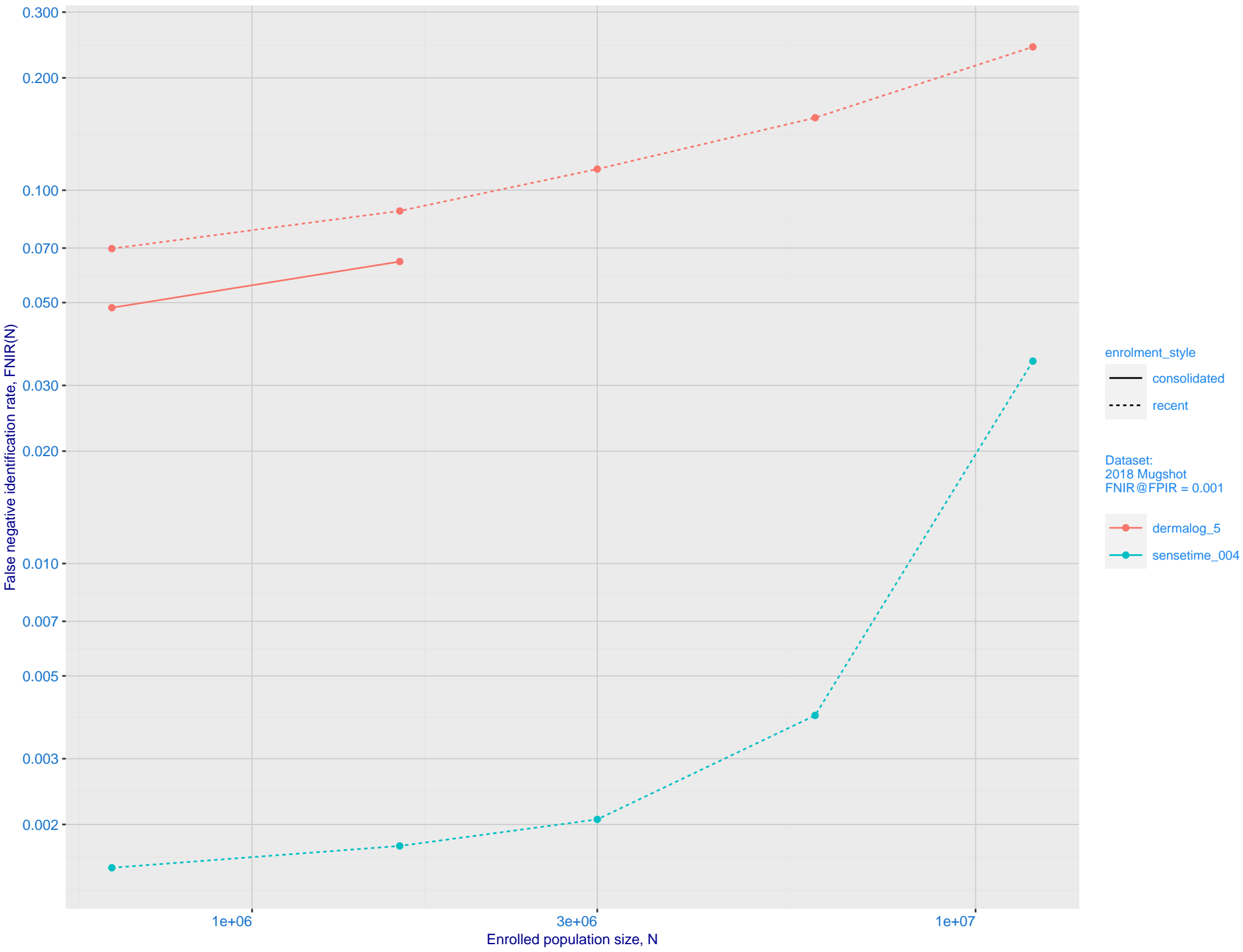
Mugshot webcam ranking 117 (out of 236) –– FNIR(1600000, T, L+1) = 0.1538, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 86 (out of 209) –– FNIR(1600000, T, L+1) = 0.9902, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000
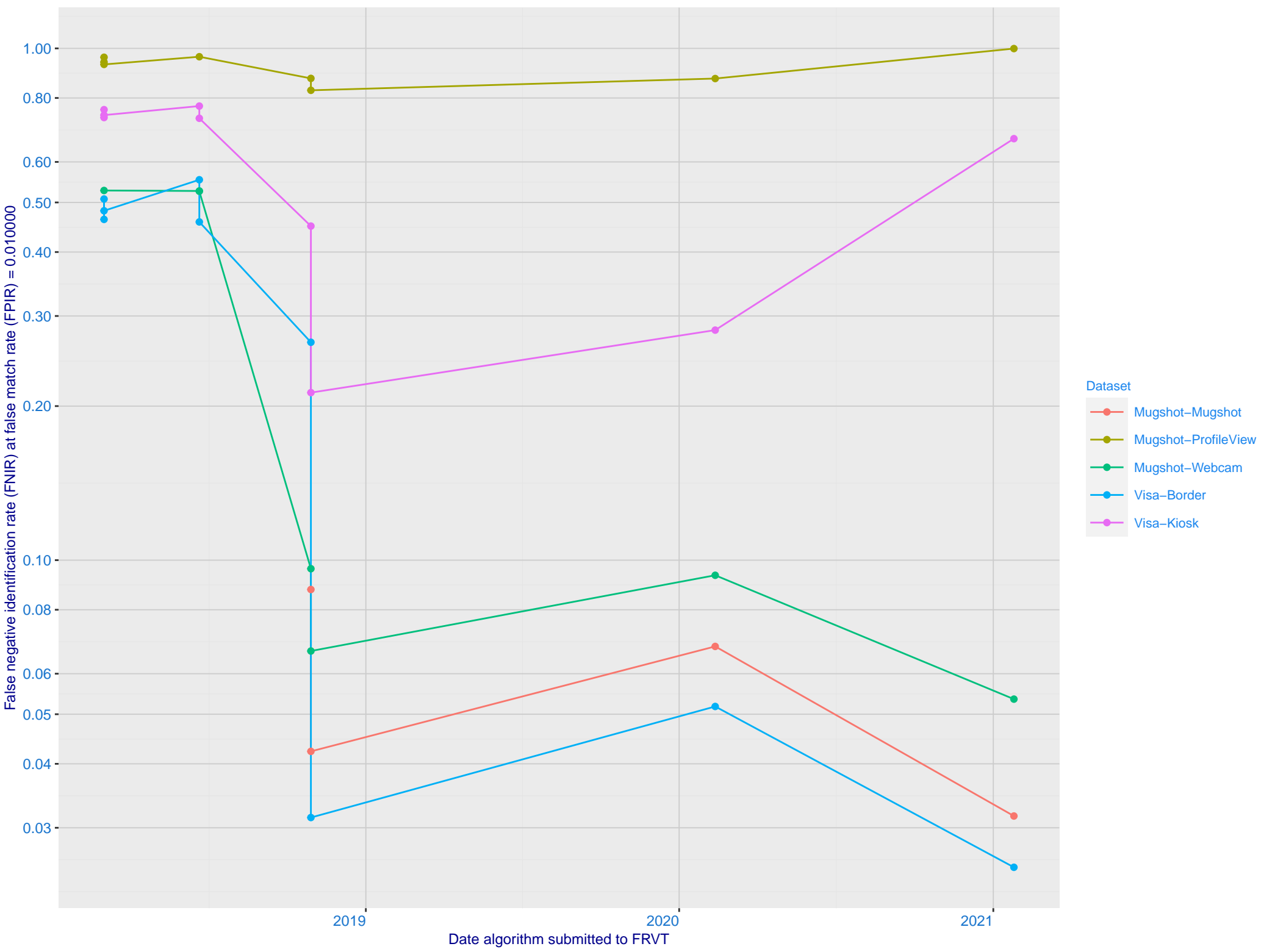
Immigration visa–border ranking 109 (out of 167) –– FNIR(1600000, T, L+1) = 0.3004, FPIR=0.001000 vs. lowest 0.0047 from idemia_008

Immigration visa–kiosk ranking 85 (out of 162) –– FNIR(1600000, T, L+1) = 0.6191, FPIR=0.001000 vs. lowest 0.0996 from cloudwalk_hr_000
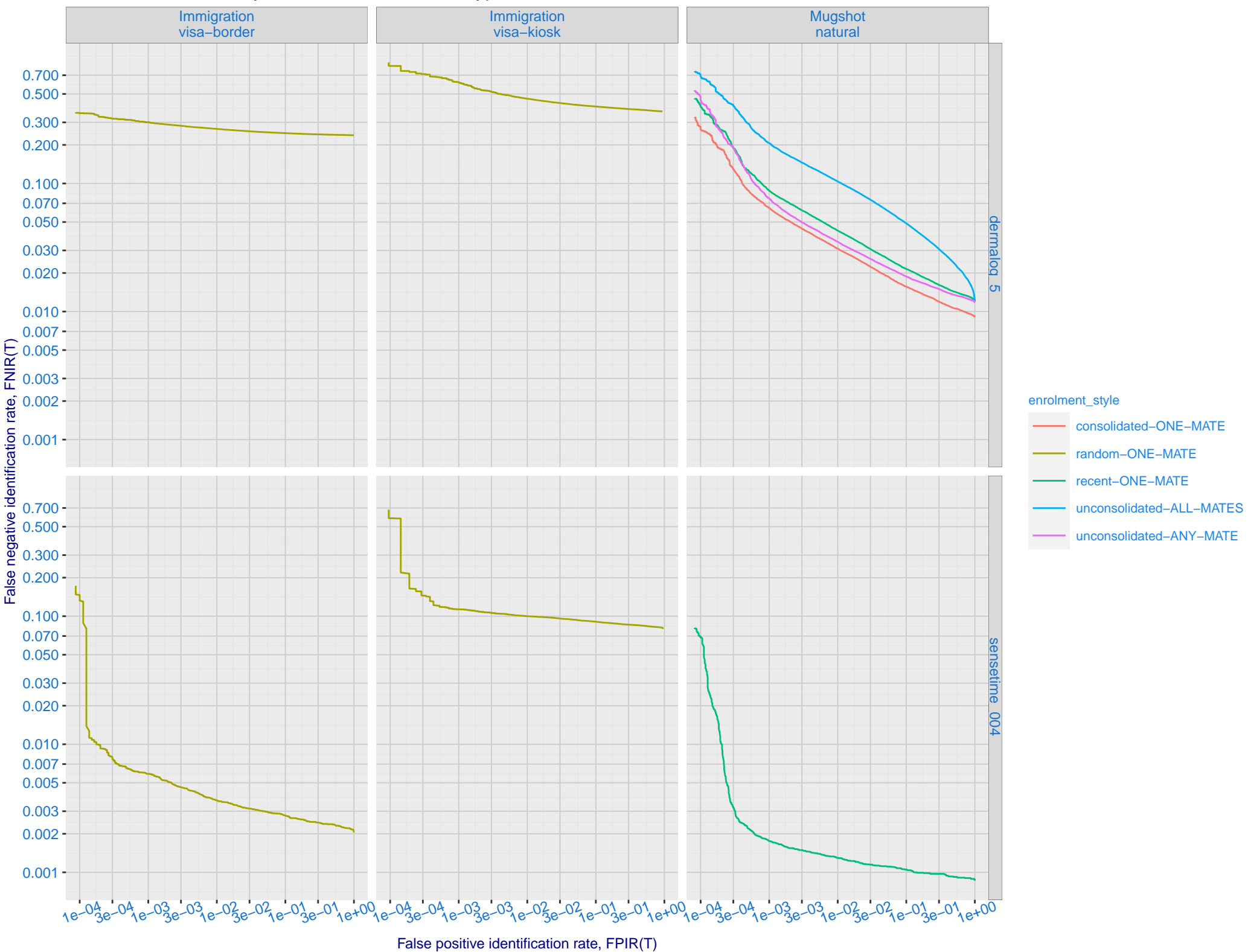
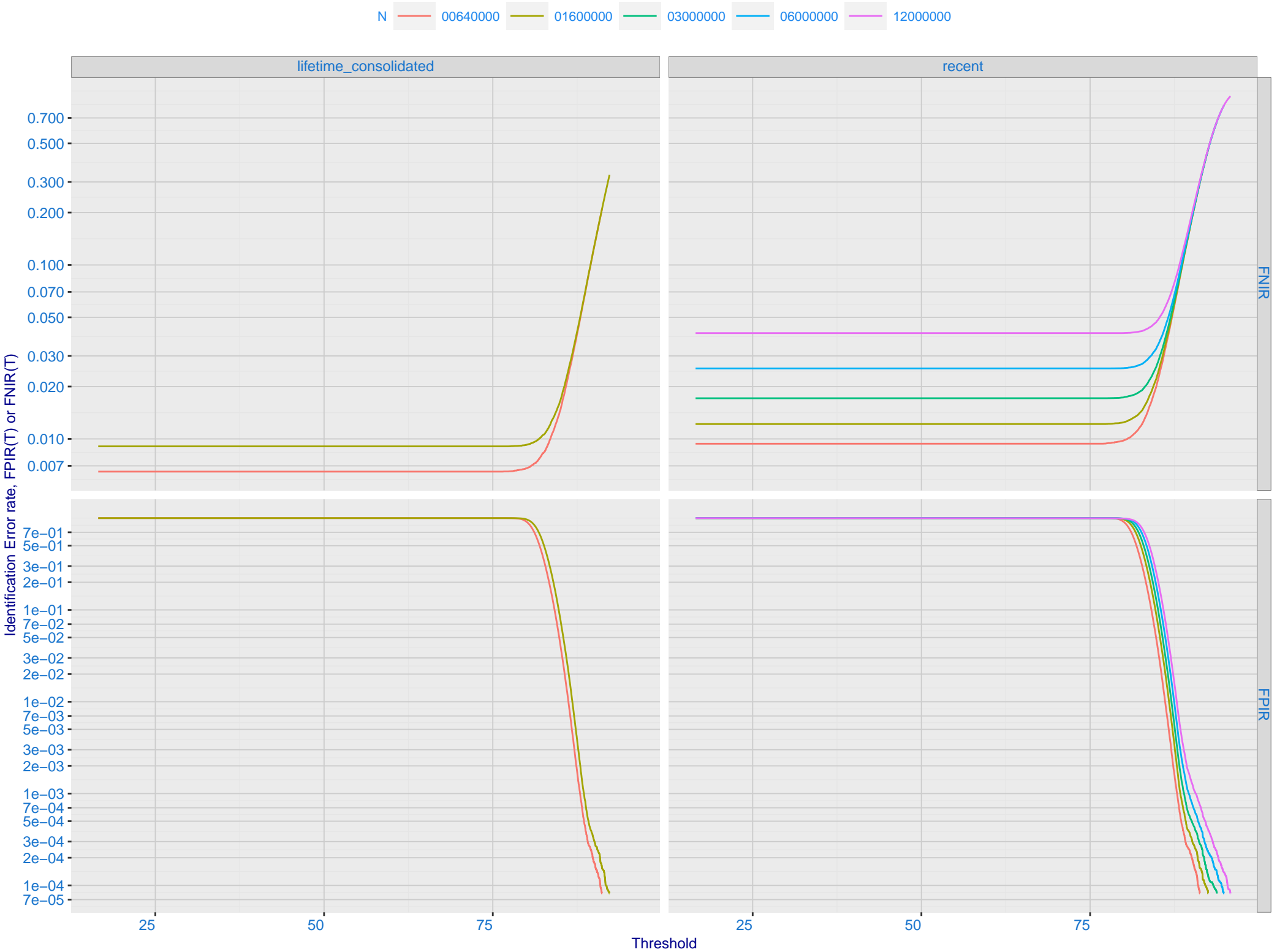B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)

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

Dataset
- Mugshot–Mugshot
- Mugshot–ProfileView
- Mugshot–Webcam
- Visa–Border
- Visa–Kiosk

False negative identification rate (FNIR) at false match rate (FPIR) = 0.010000

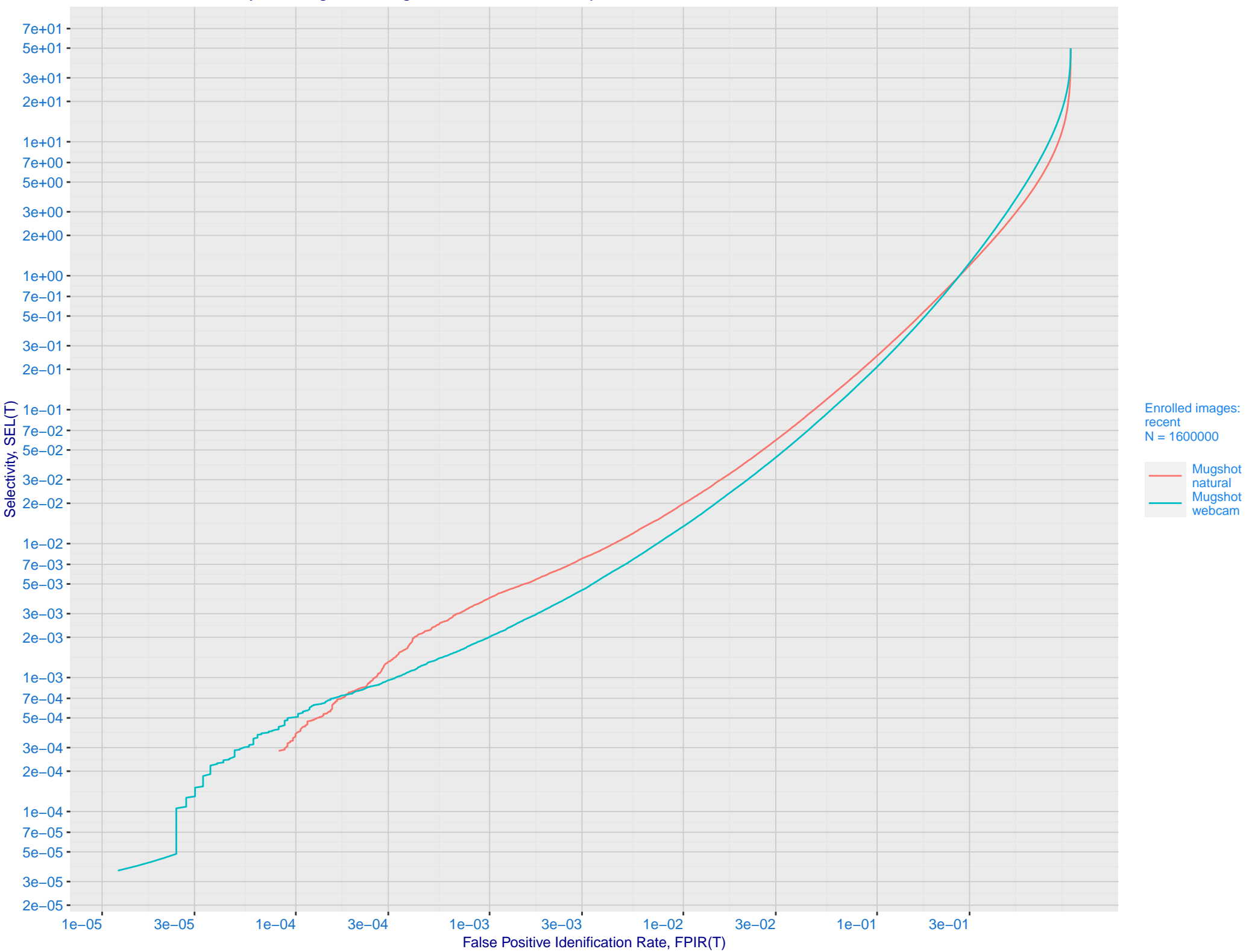Date algorithm submitted to FRVT

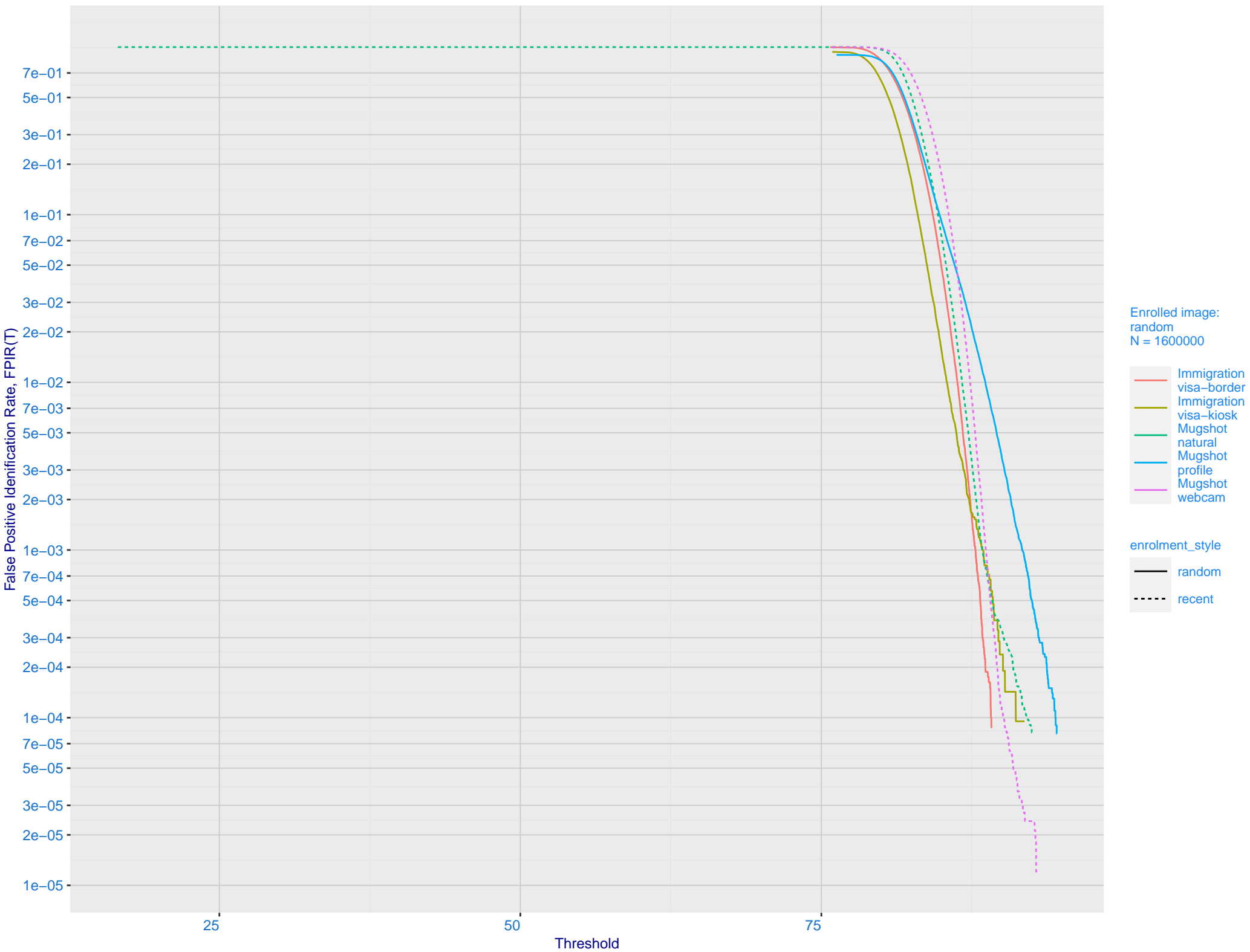D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals

E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images
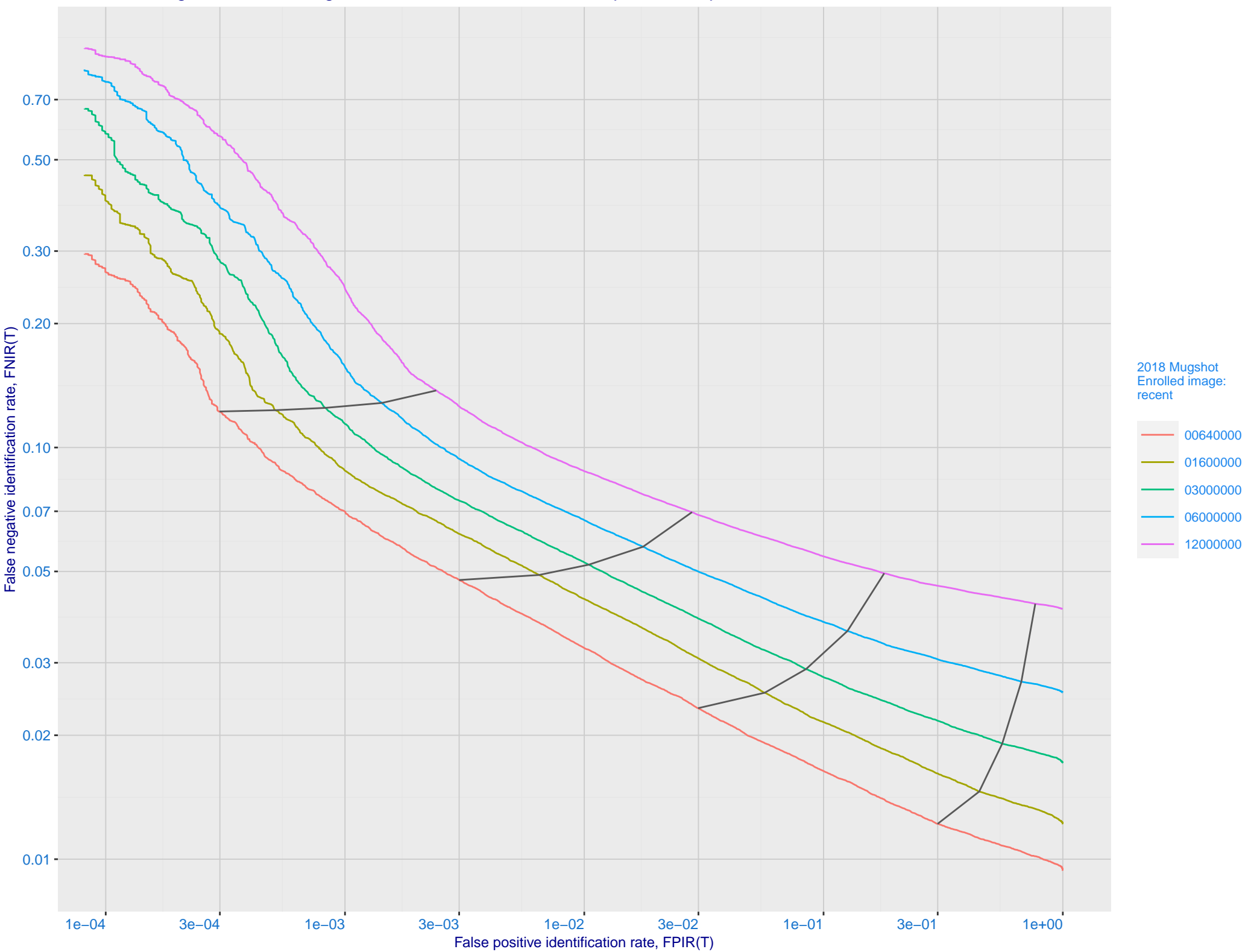
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate

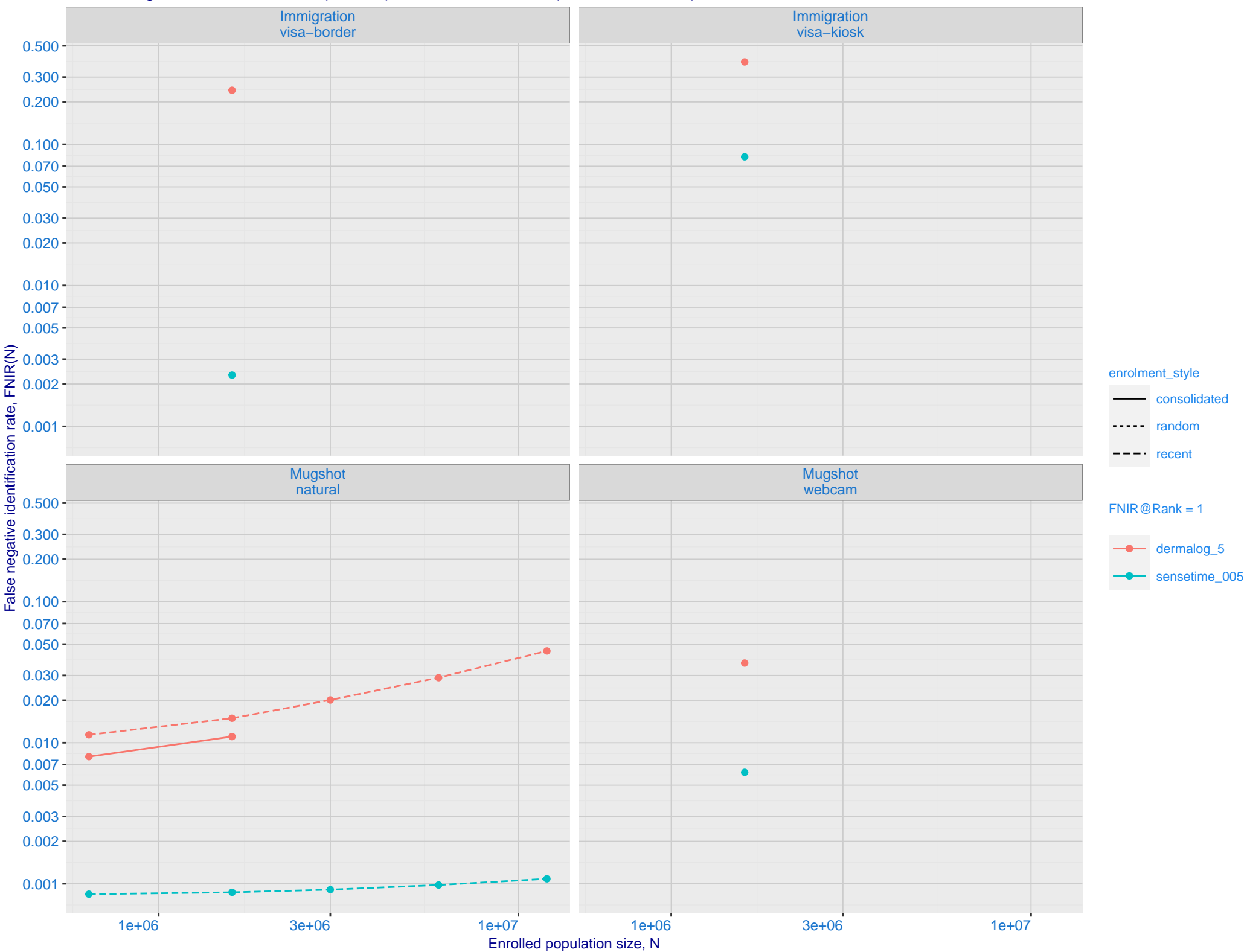G: FPIR dependence on T by probe type for N = 1600000 subjects

Threshold

False Positive Idenification Rate, FPIR(T)

Enrolled image: random
N = 1600000

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

enrolment_style

random
recent

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

2018 Mugshot
Enrolled image:
recent

— 00640000
— 01600000
— 03000000
— 06000000
— 12000000

False negative identification rate, FNIR(T)
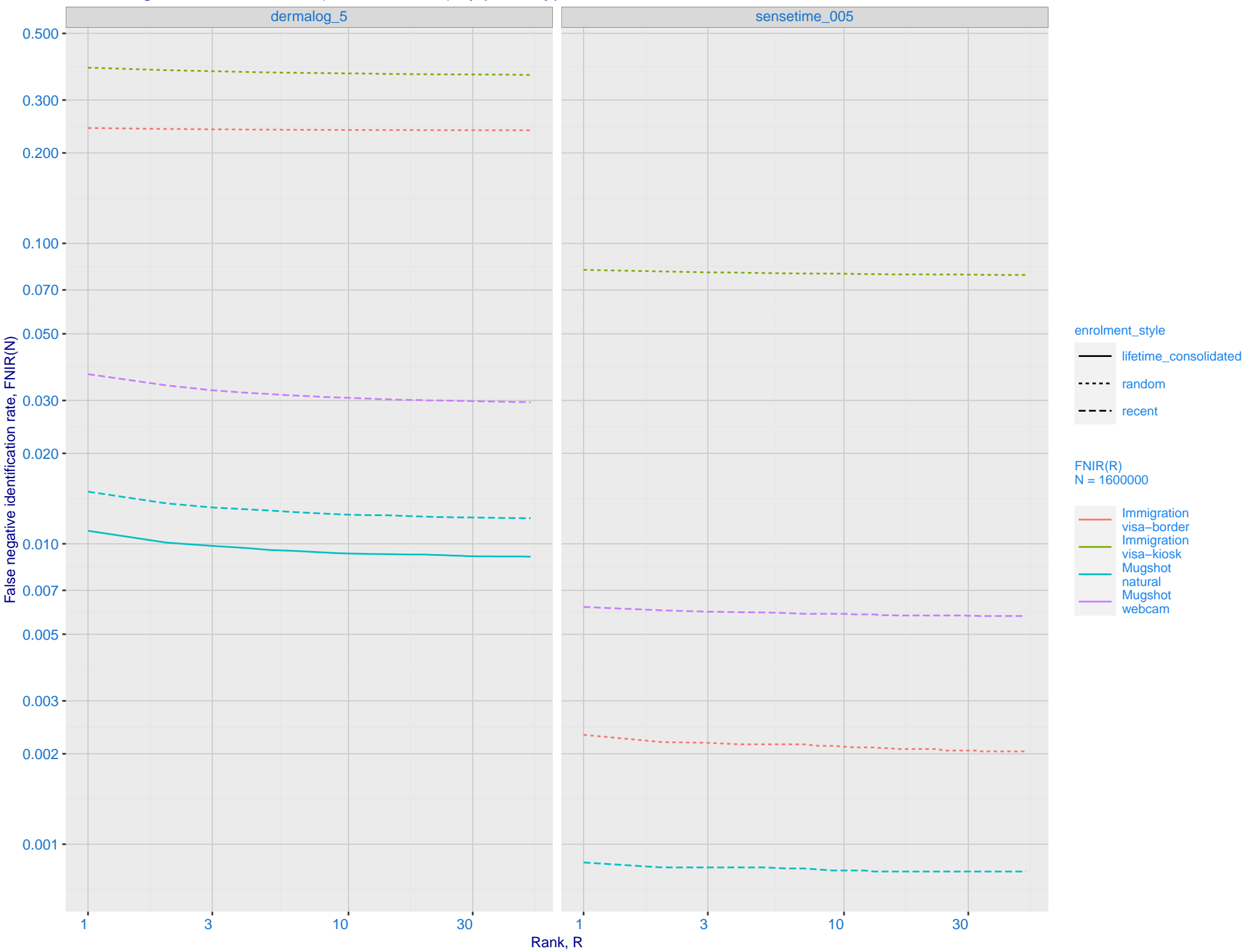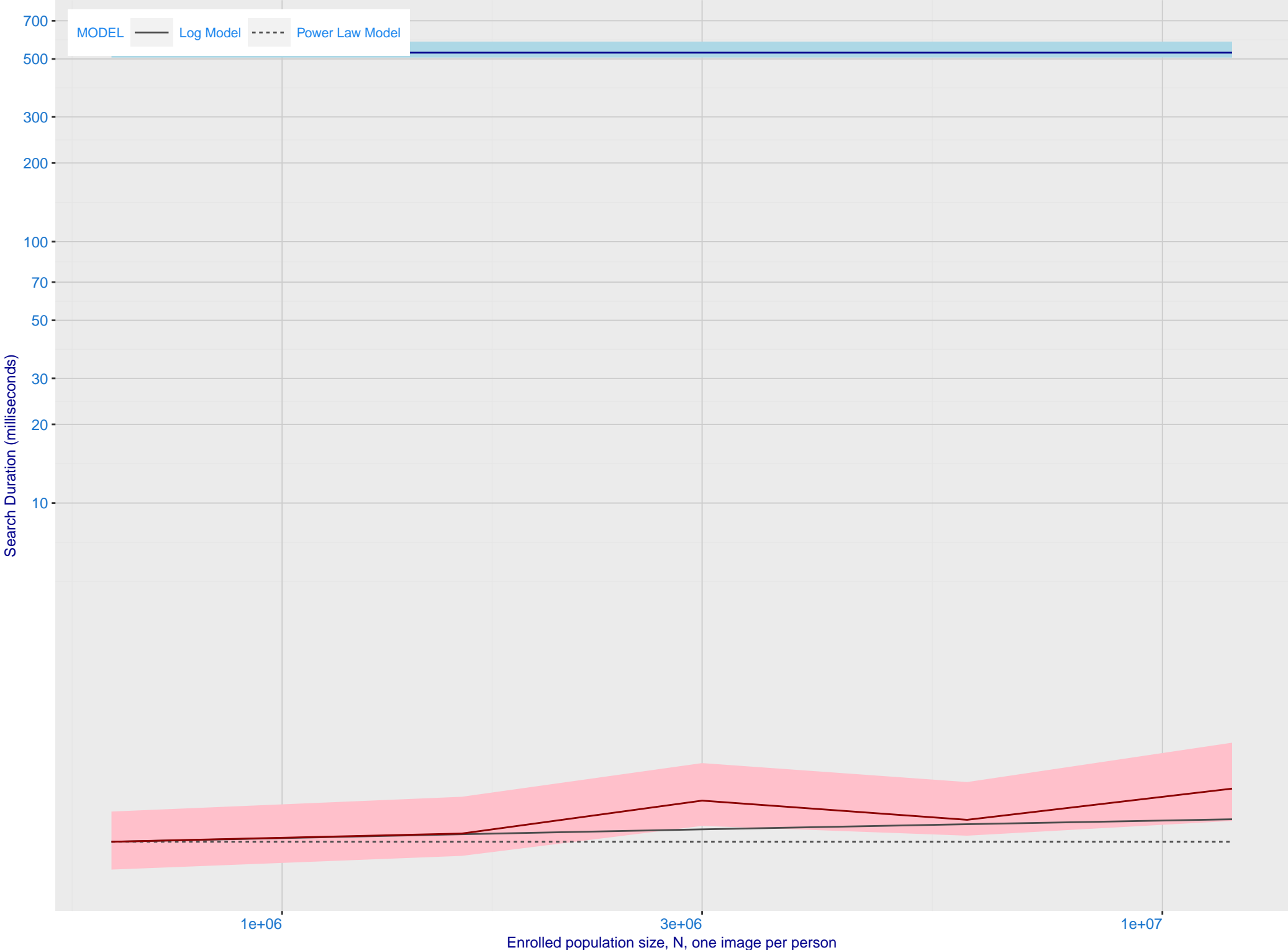
False positive identification rate, FPIR(T)

K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005)

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

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