A: Datasheet

Algorithm: lookman_3

Developer: Lookman Electroplast Industries

Submission Date: 2018_10_28

Template size: 292 bytes

Template time (2.5 percentile): 334 msec

Template time (median): 336 msec

Template time (97.5 percentile): 367 msec

Investigation:

Frontal mugshot ranking 128 (out of 279) –– FNIR(1600000, 0, 1) = 0.0088 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 140 (out of 241) –– FNIR(1600000, 0, 1) = 0.0379 vs. lowest 0.0062 from sensetime_005

Immigration visa–border ranking 104 (out of 168) –– FNIR(1600000, 0, 1) = 0.0351 vs. lowest 0.0013 from visionlabs_010

Immigration visa–kiosk ranking 103 (out of 165) –– FNIR(1600000, 0, 1) = 0.2394 vs. lowest 0.0568 from cloudwalk_hr_000
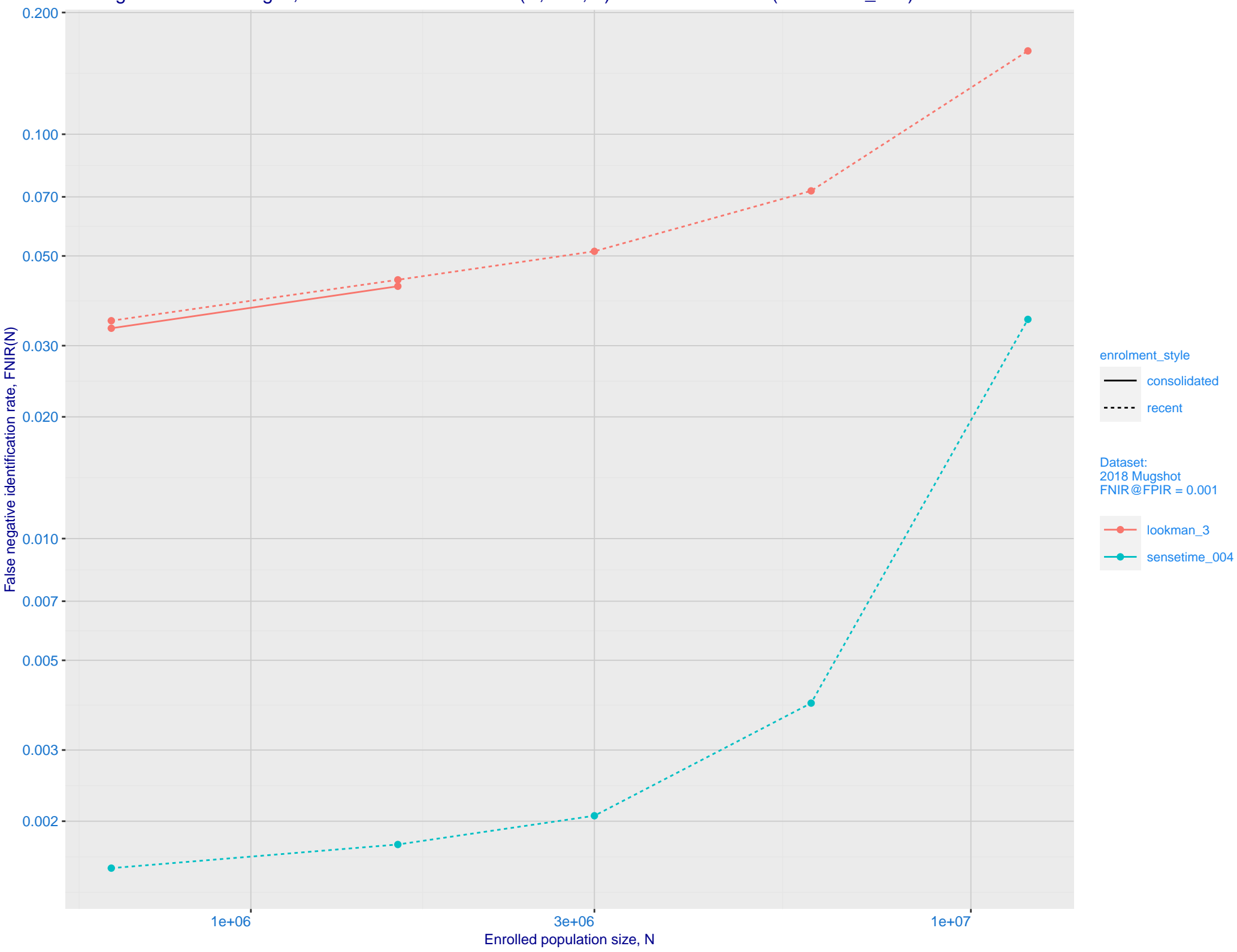
Identification:

Frontal mugshot ranking 78 (out of 279) –– FNIR(1600000, T, L+1) = 0.0437, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 84 (out of 236) –– FNIR(1600000, T, L+1) = 0.1123, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003
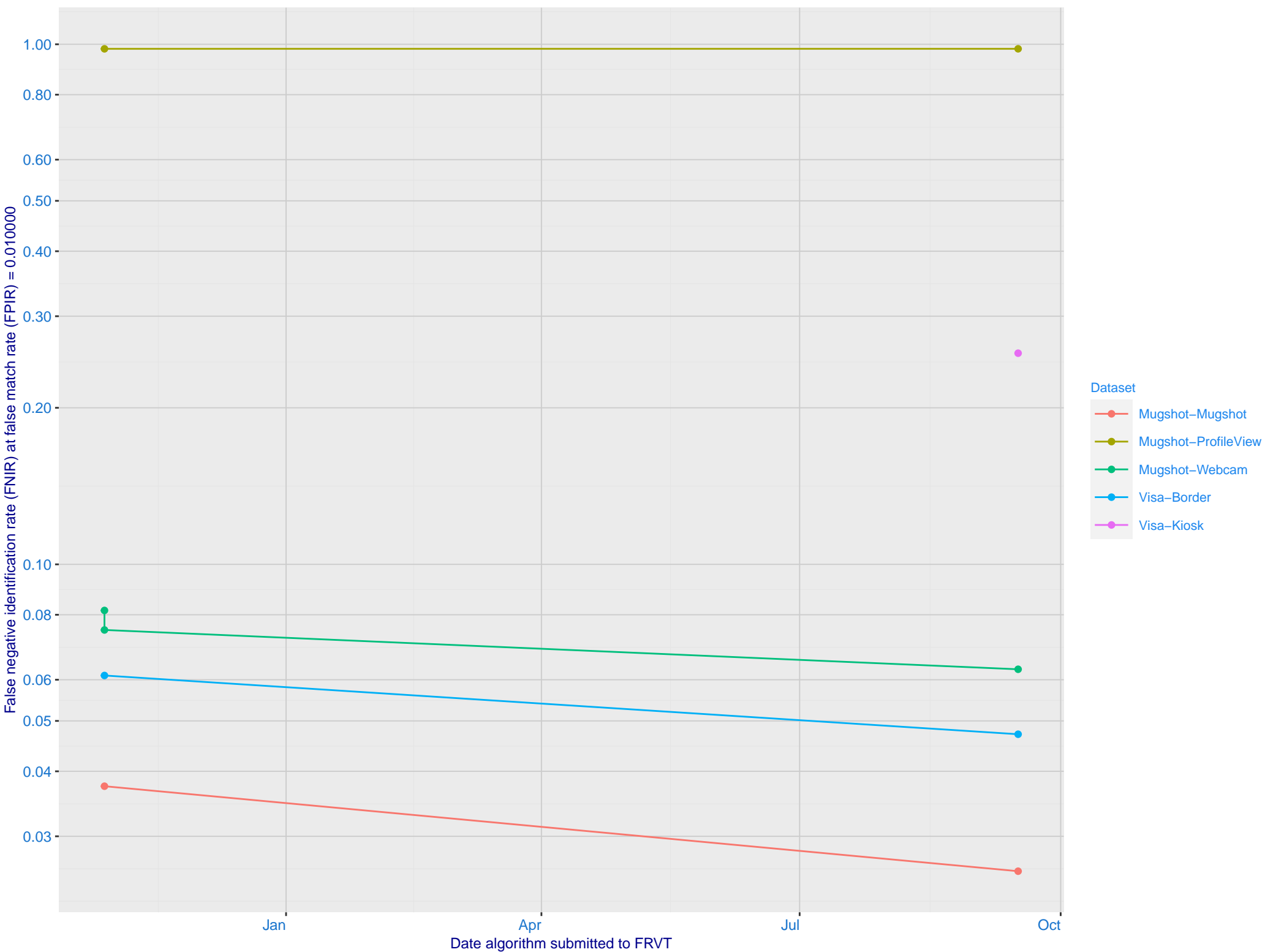
Immigration visa–border ranking 77 (out of 167) –– FNIR(1600000, T, L+1) = 0.0841, FPIR=0.001000 vs. lowest 0.0047 from idemia_008

Immigration visa–kiosk ranking 55 (out of 162) –– FNIR(1600000, T, L+1) = 0.3572, FPIR=0.001000 vs. lowest 0.0996 from cloudwalk_hr_000
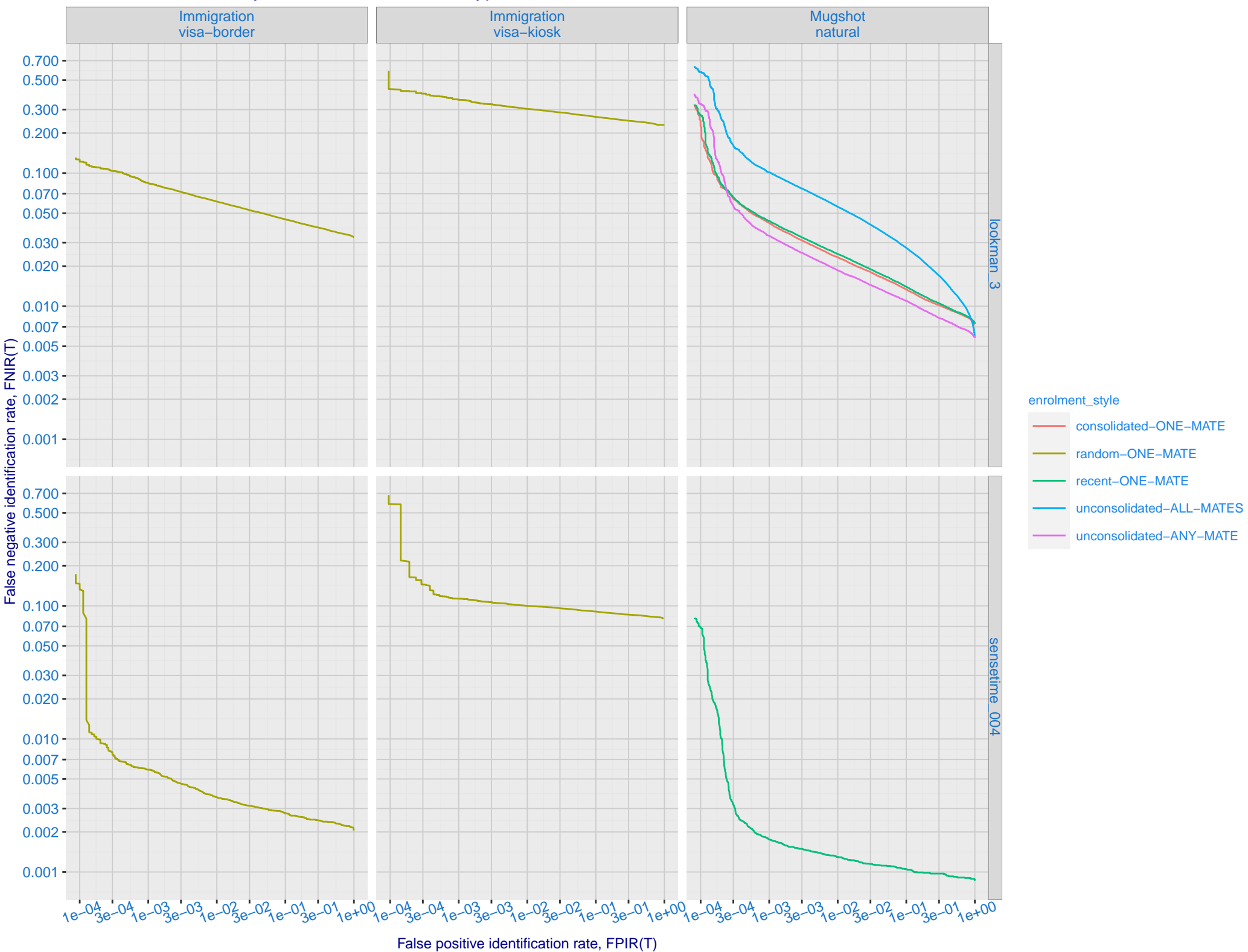
B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime_004)
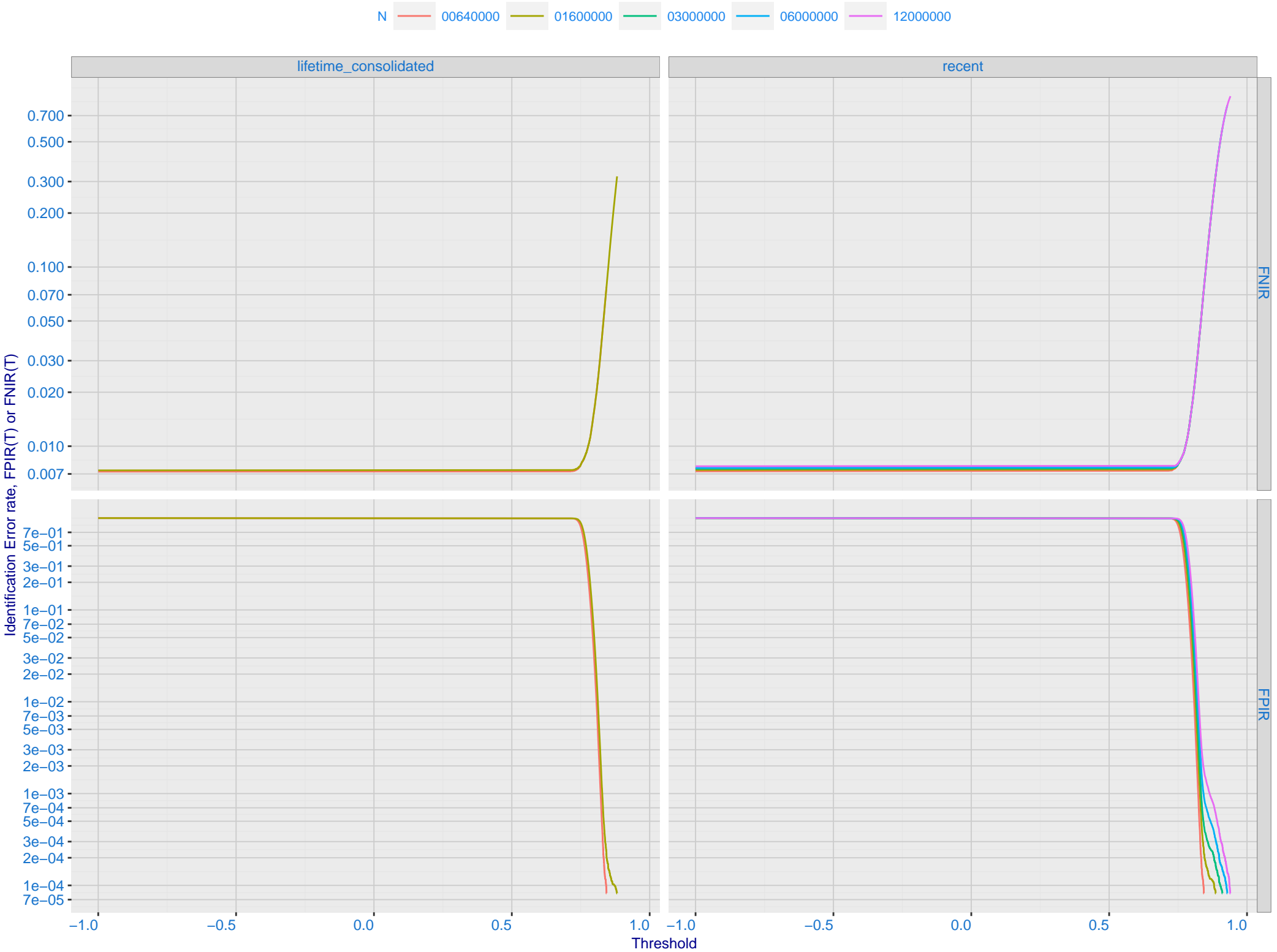
C: Evolution of accuracy for LOOKMAN algorithms on three datasets 2018 – present
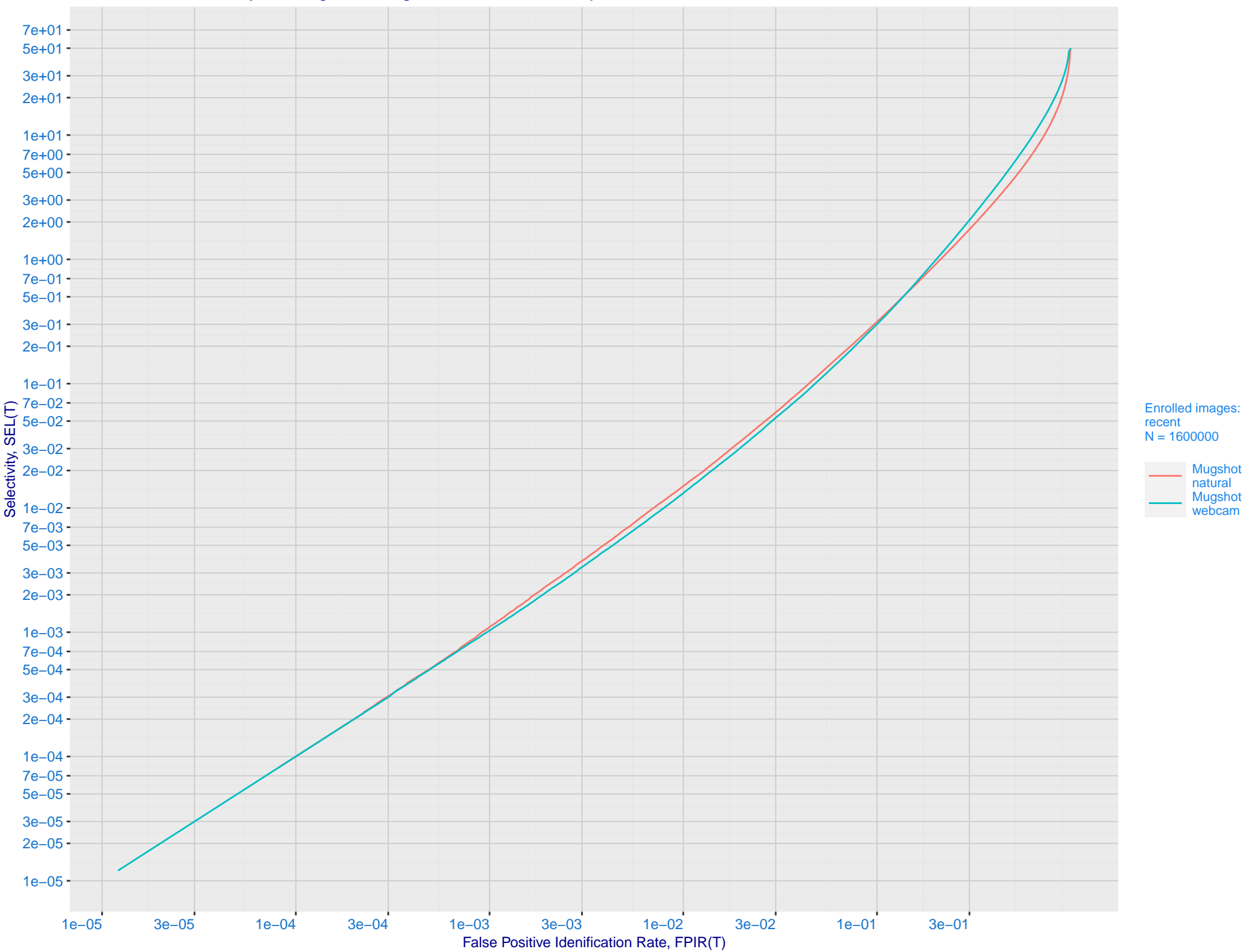
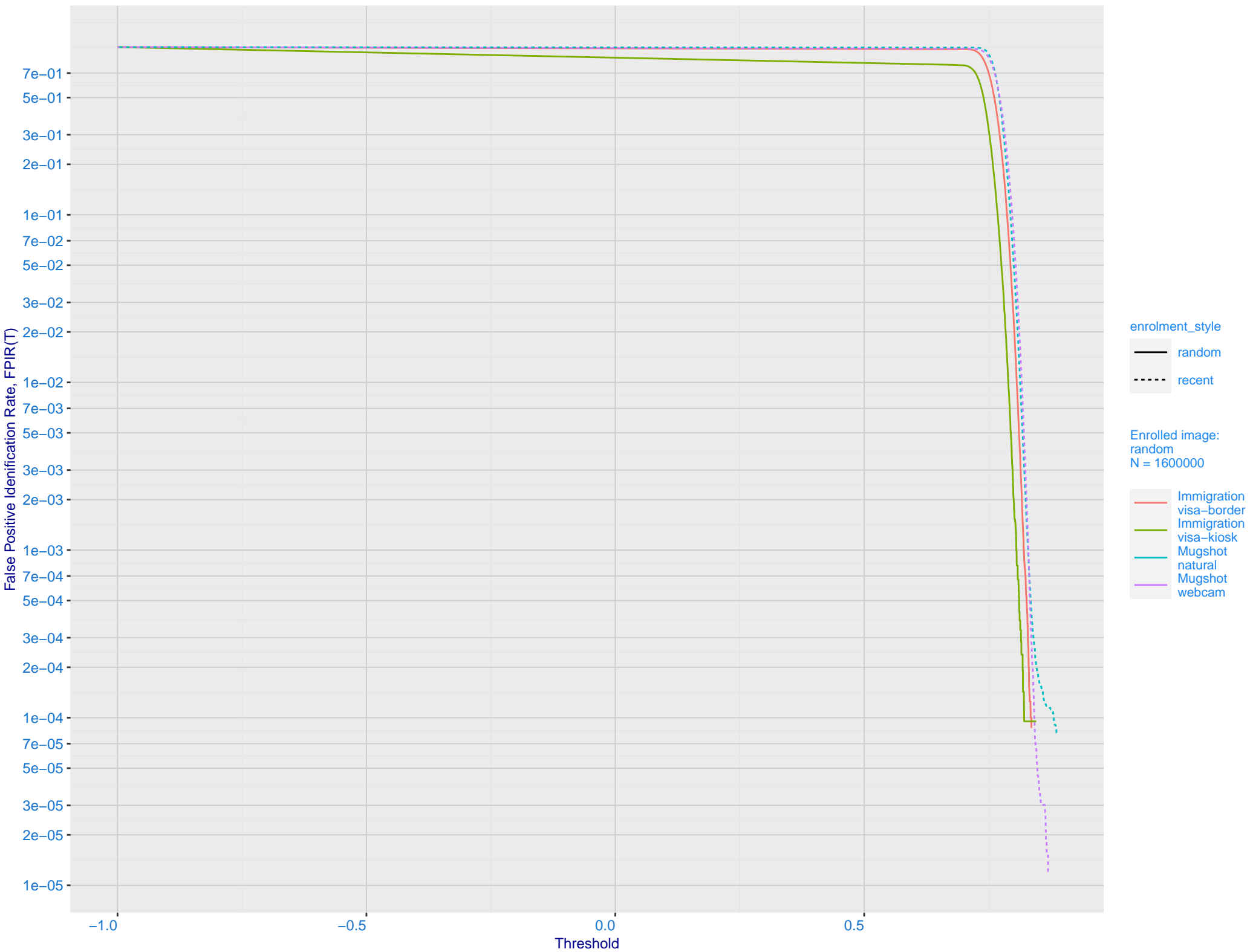D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals

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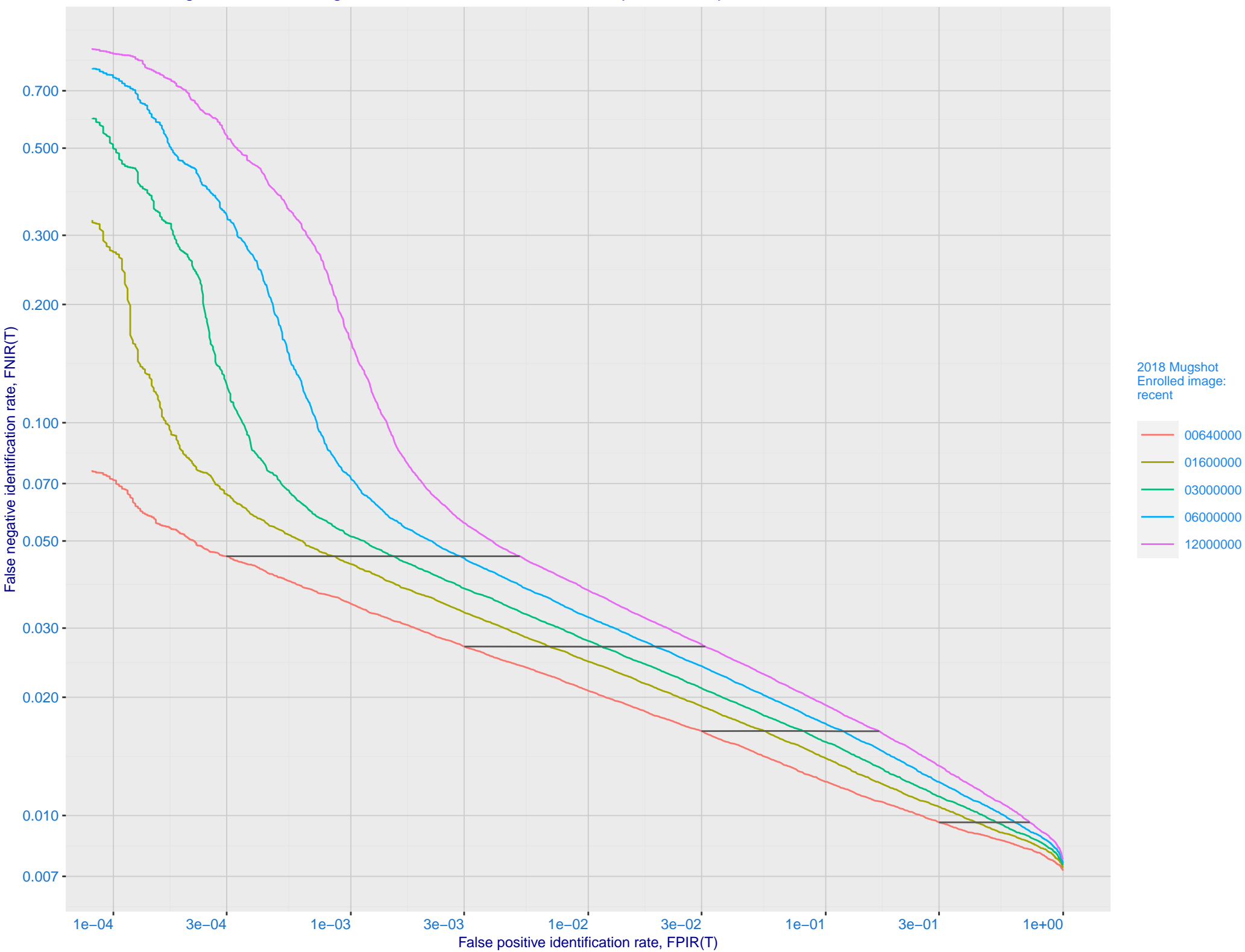
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate
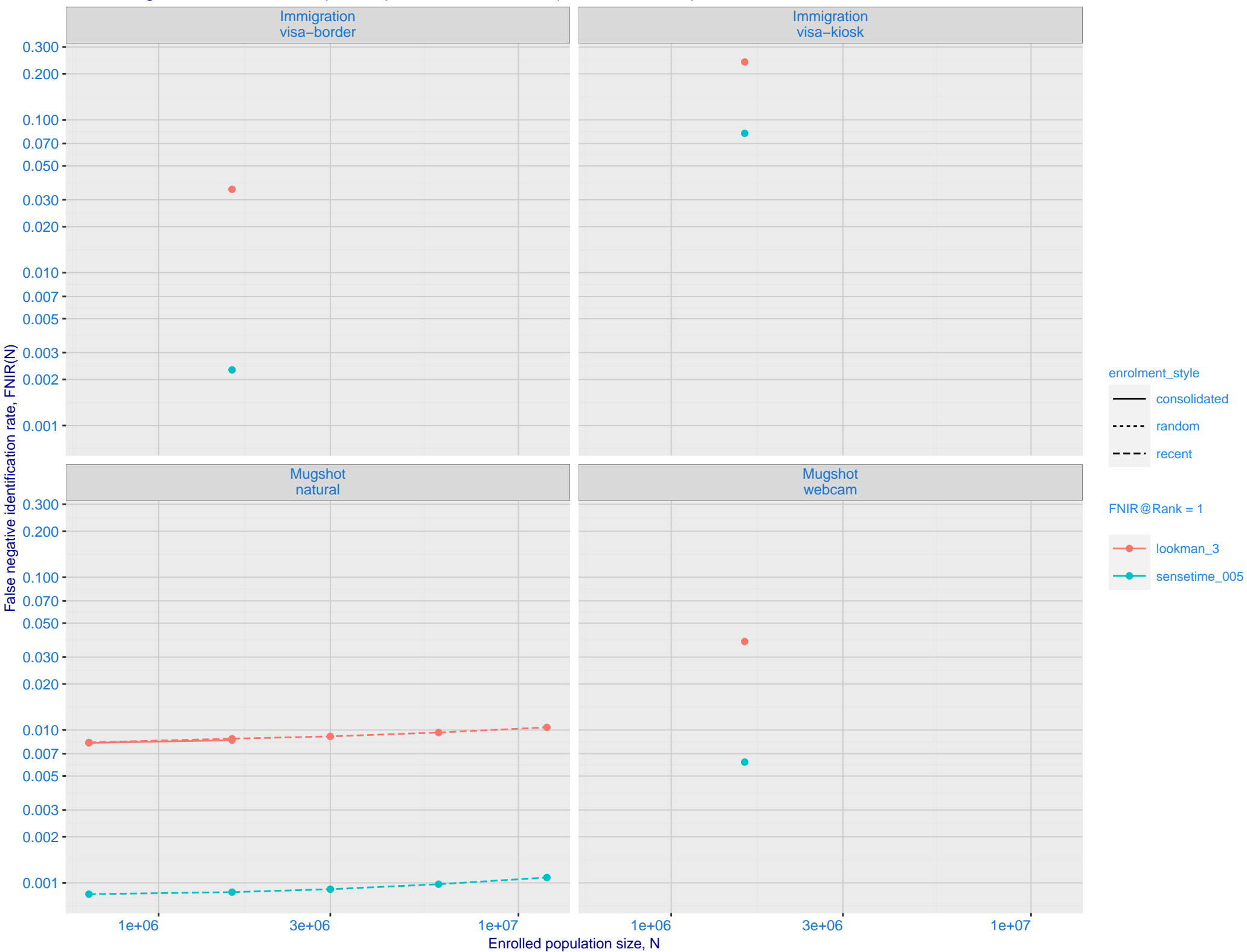
G: FPIR dependence on T by probe type for N = 1600000 subjects

Threshold

False Positive Idenification Rate, FPIR(T)

enrolment_style
— random
···· recent

Enrolled image:
random
N = 1600000

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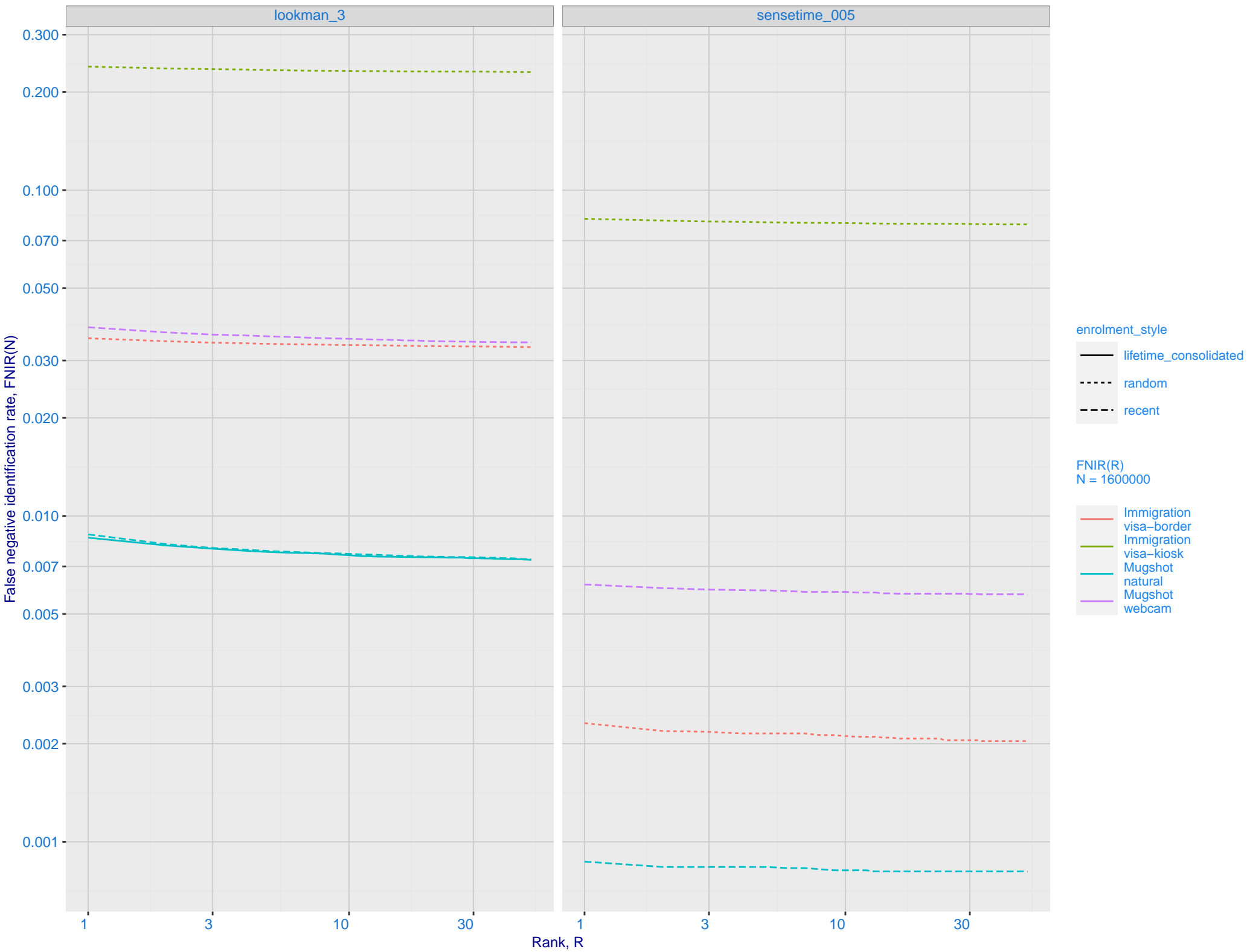visa–kiosk
— Mugshot
natural
— Mugshot
webcam

J: DET for Mugshot natural images and various N. Links connect points of equal threshold.
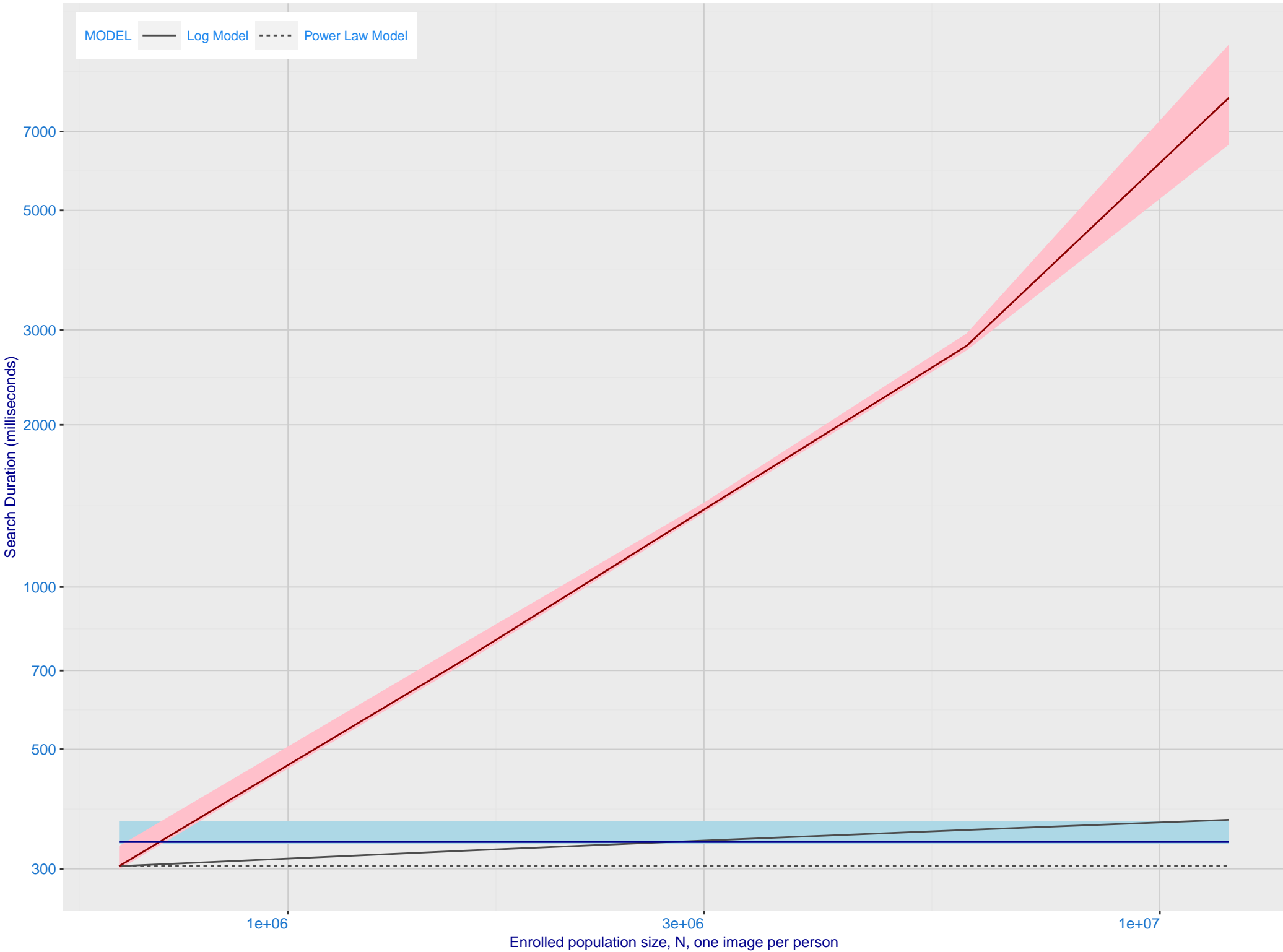
K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005)

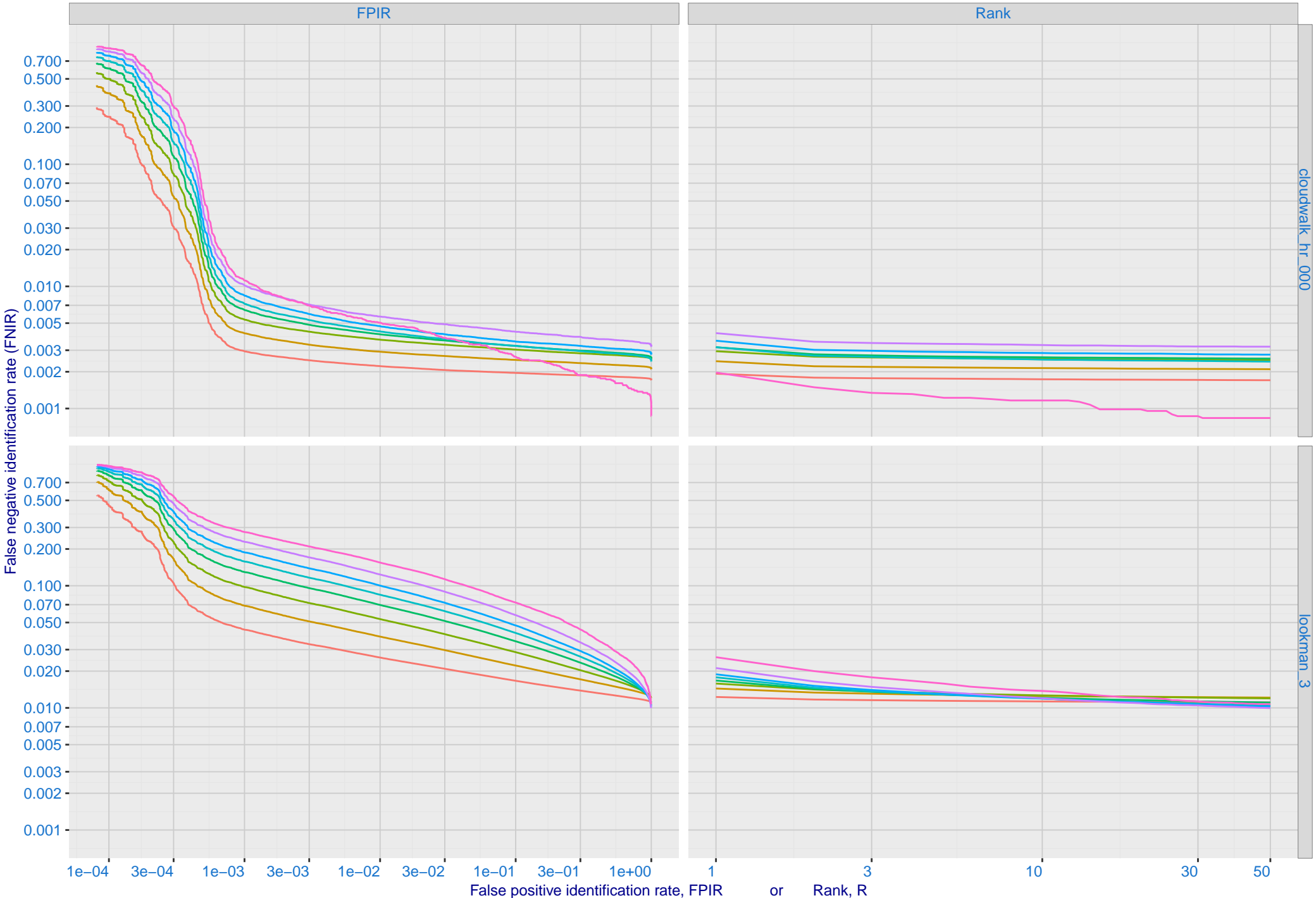L: Investigational mode: FNIR(1600000, R, 0) by probe type

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

R: Decline of genuine scores with ageing, with some eventually dropping below typical thresholds shown by the horizontal lines