

A: Datasheet

Algorithm: smilart\_4

Developer: Smilart

Submission Date: 2018\_10\_30

Template size: 512 bytes

Template time (2.5 percentile): 149 msec

Template time (median): 168 msec

Template time (97.5 percentile): 191 msec

Investigation:

Frontal mugshot ranking 277 (out of 279) --- FNIR(1600000, 0, 1) = 0.9648 vs. lowest 0.0009 from sensetime\_005

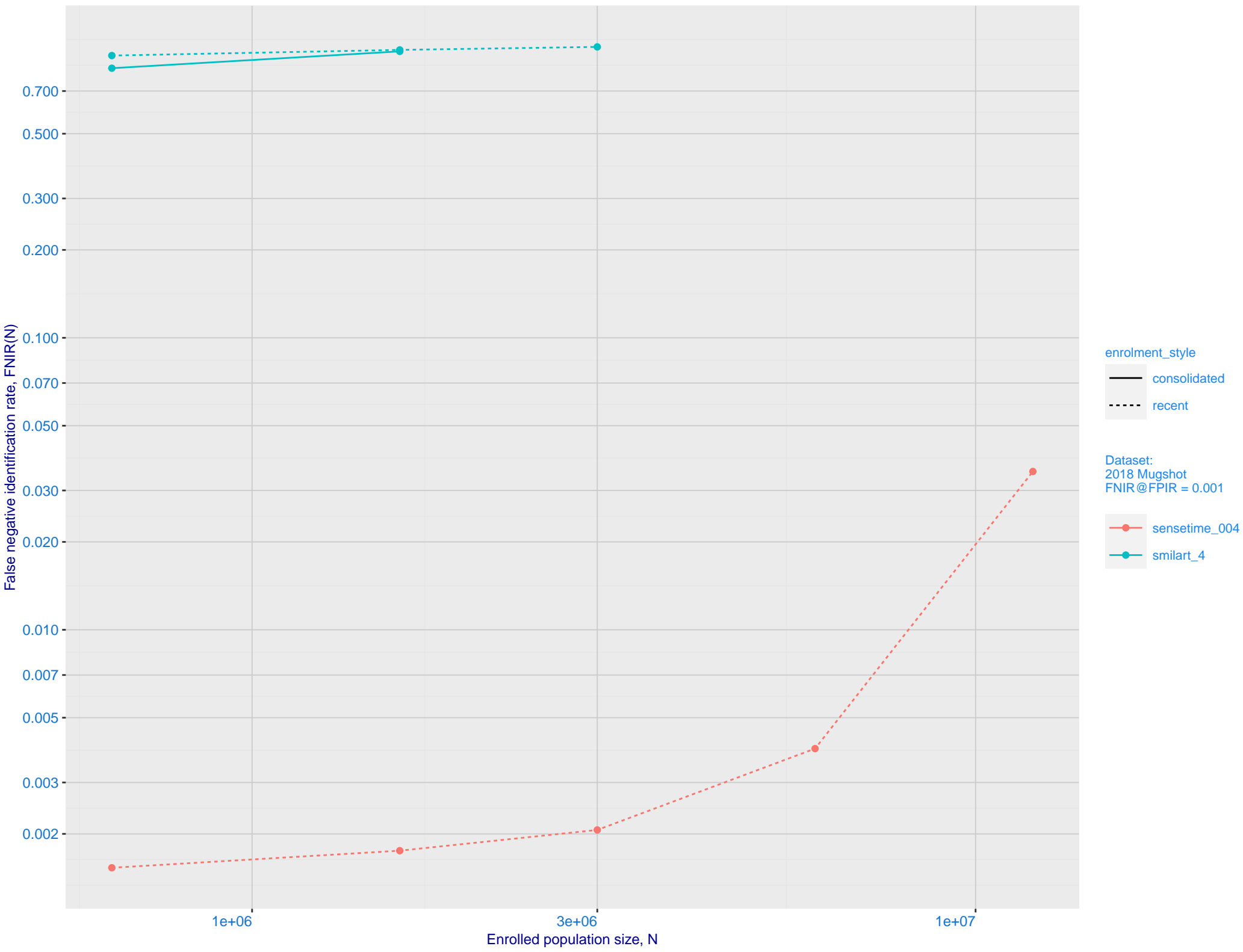
Mugshot webcam ranking 239 (out of 241) --- FNIR(1600000, 0, 1) = 0.9742 vs. lowest 0.0062 from sensetime\_005

Identification:

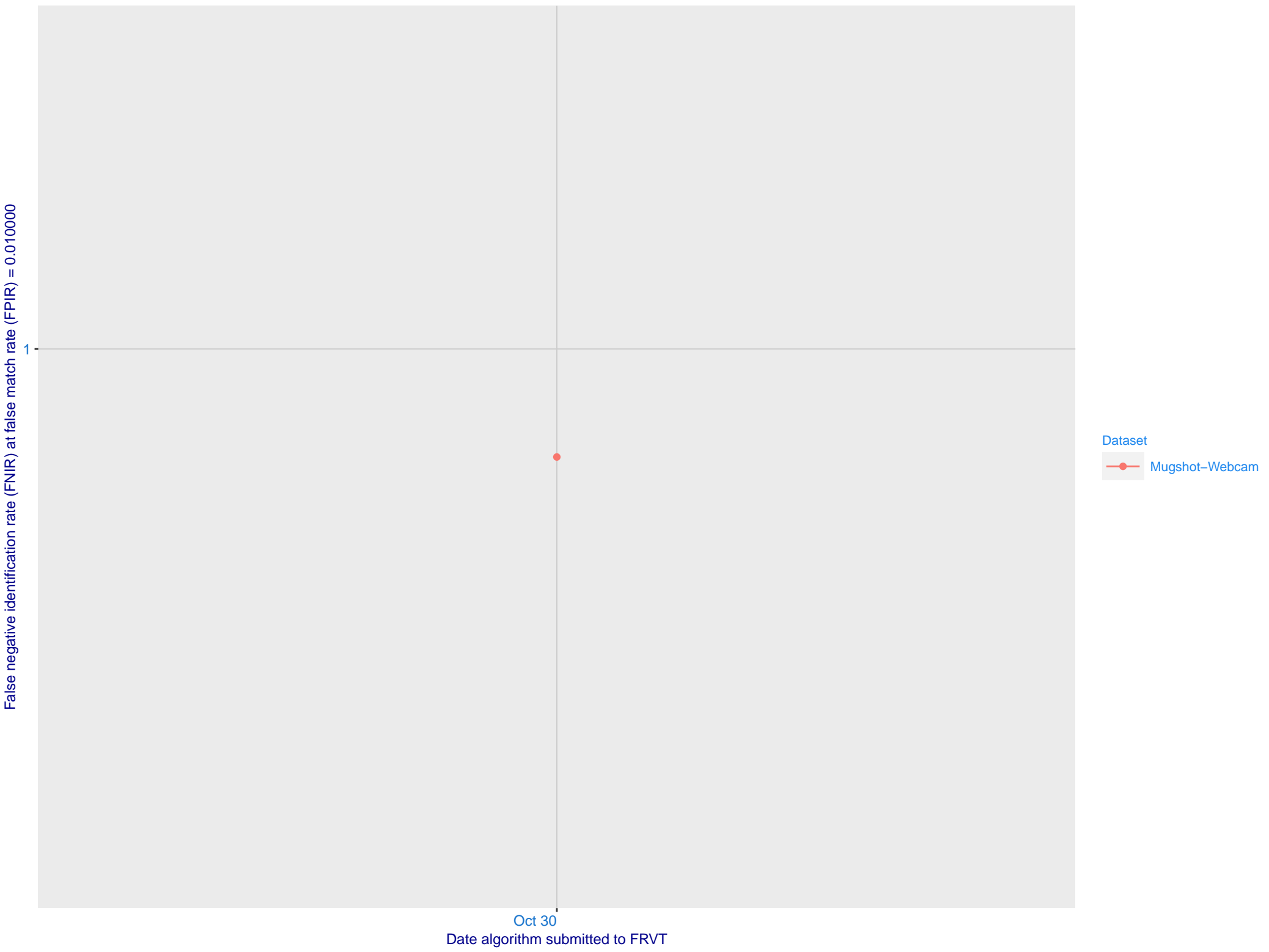
Frontal mugshot ranking 267 (out of 279) --- FNIR(1600000, T, L+1) = 0.9682, FPIR=0.001000 vs. lowest 0.0018 from sensetime\_004

Mugshot webcam ranking 228 (out of 236) --- FNIR(1600000, T, L+1) = 0.9756, FPIR=0.001000 vs. lowest 0.0122 from sensetime\_003

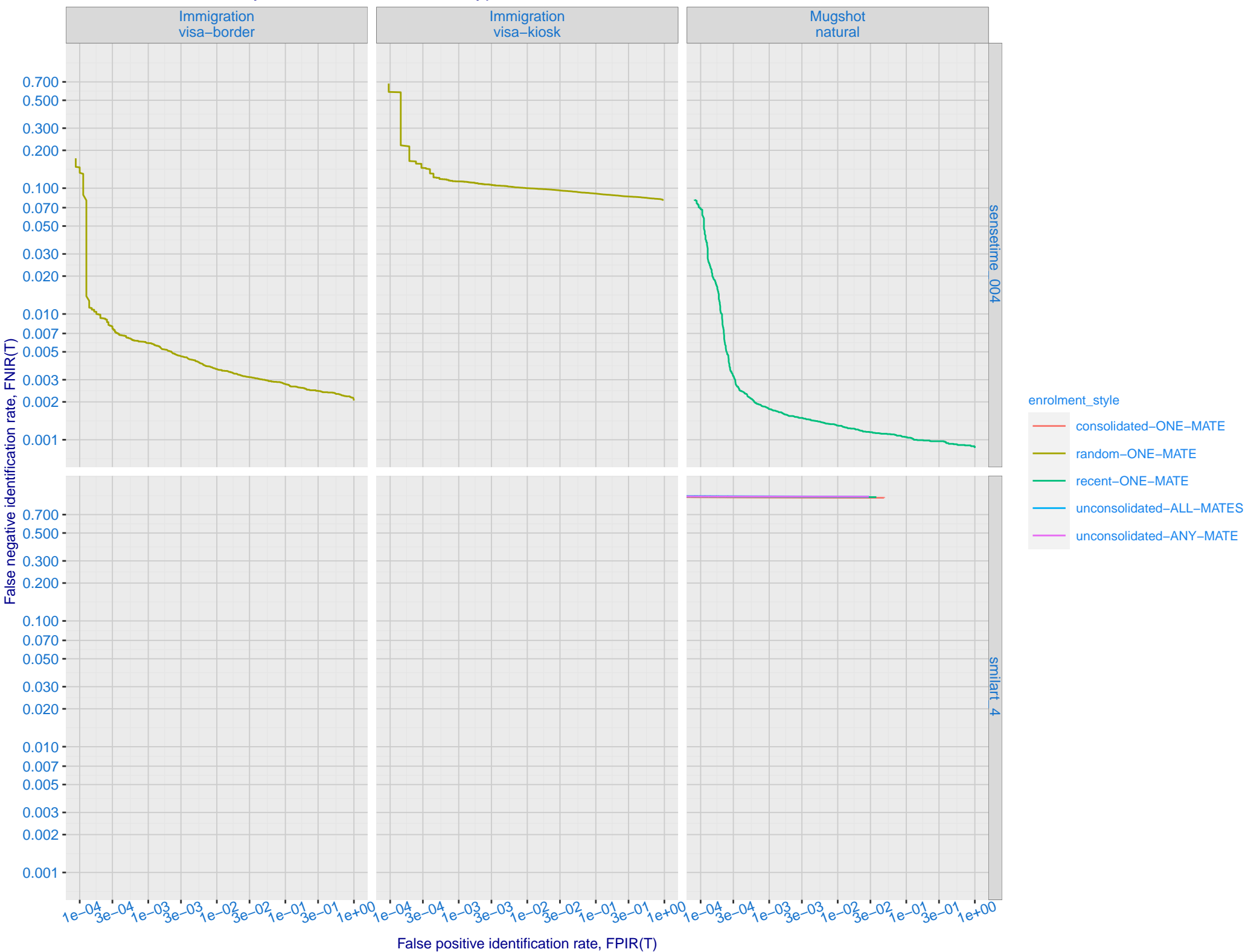
B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (sensetime\_004)



C: Evolution of accuracy for SMILART 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

N — 00640000 — 01600000 — 03000000

Identification Error rate, FPIR(T) or FNIR(T)

lifetime\_consolidated

recent

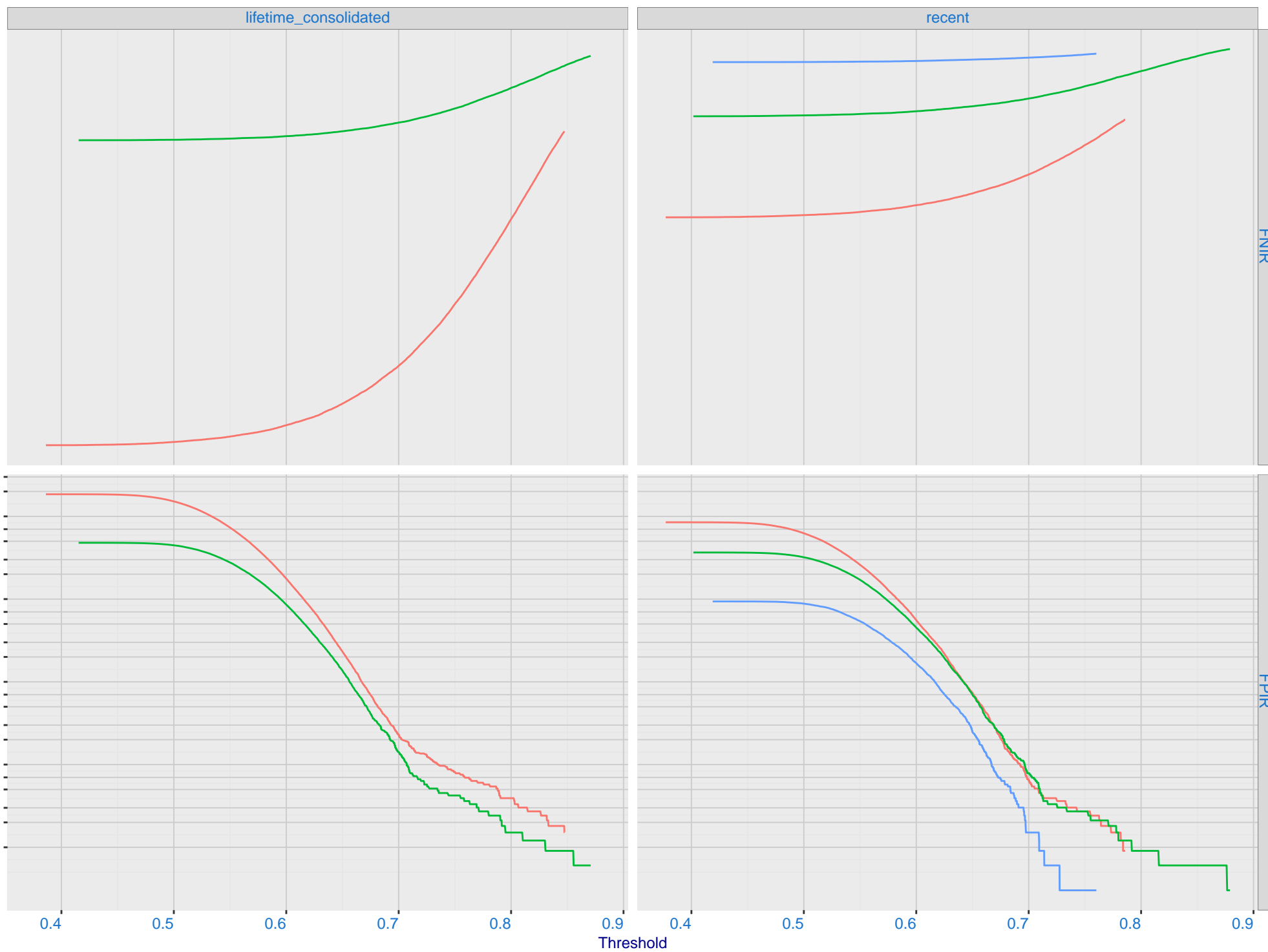
FNIR

FPIR

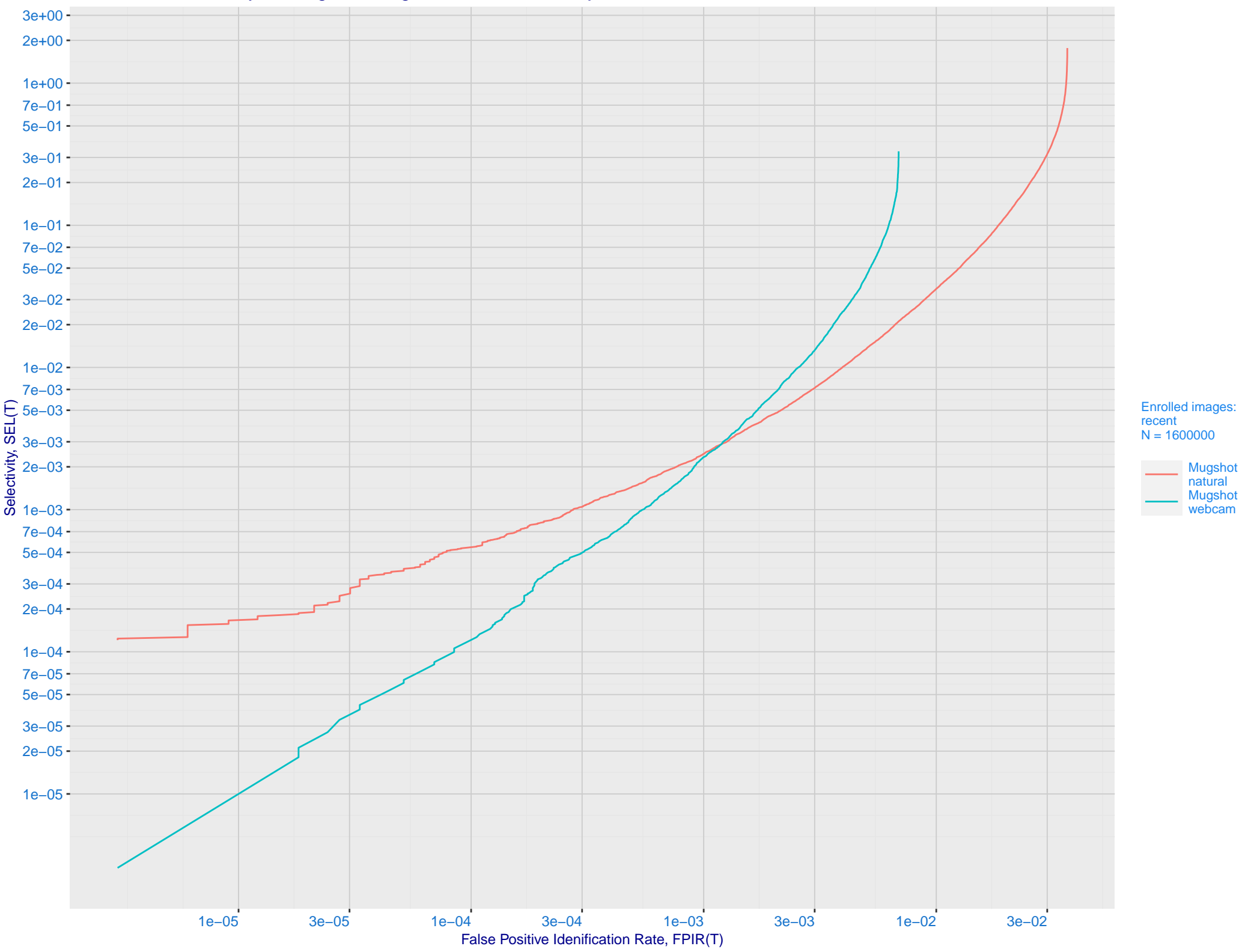
3e-01  
2e-01  
1e-01  
7e-02  
5e-02  
3e-02  
2e-02  
1e-02  
7e-03  
5e-03  
3e-03  
2e-03  
1e-03  
7e-04  
5e-04  
3e-04  
2e-04  
1e-04  
7e-05  
5e-05  
3e-05  
2e-05  
1e-05

0.4 0.5 0.6 0.7 0.8 0.9 0.4 0.5 0.6 0.7 0.8 0.9

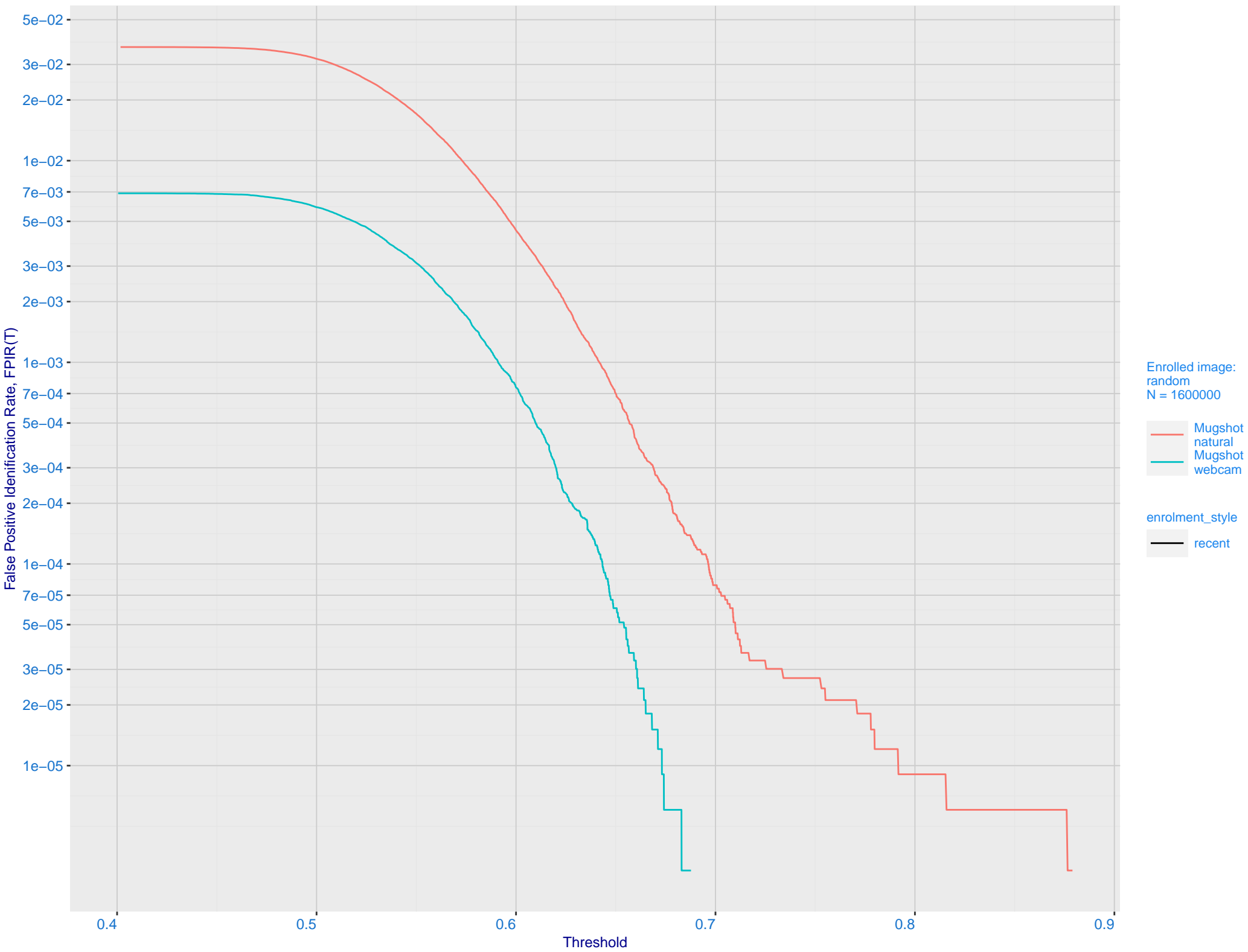
Threshold



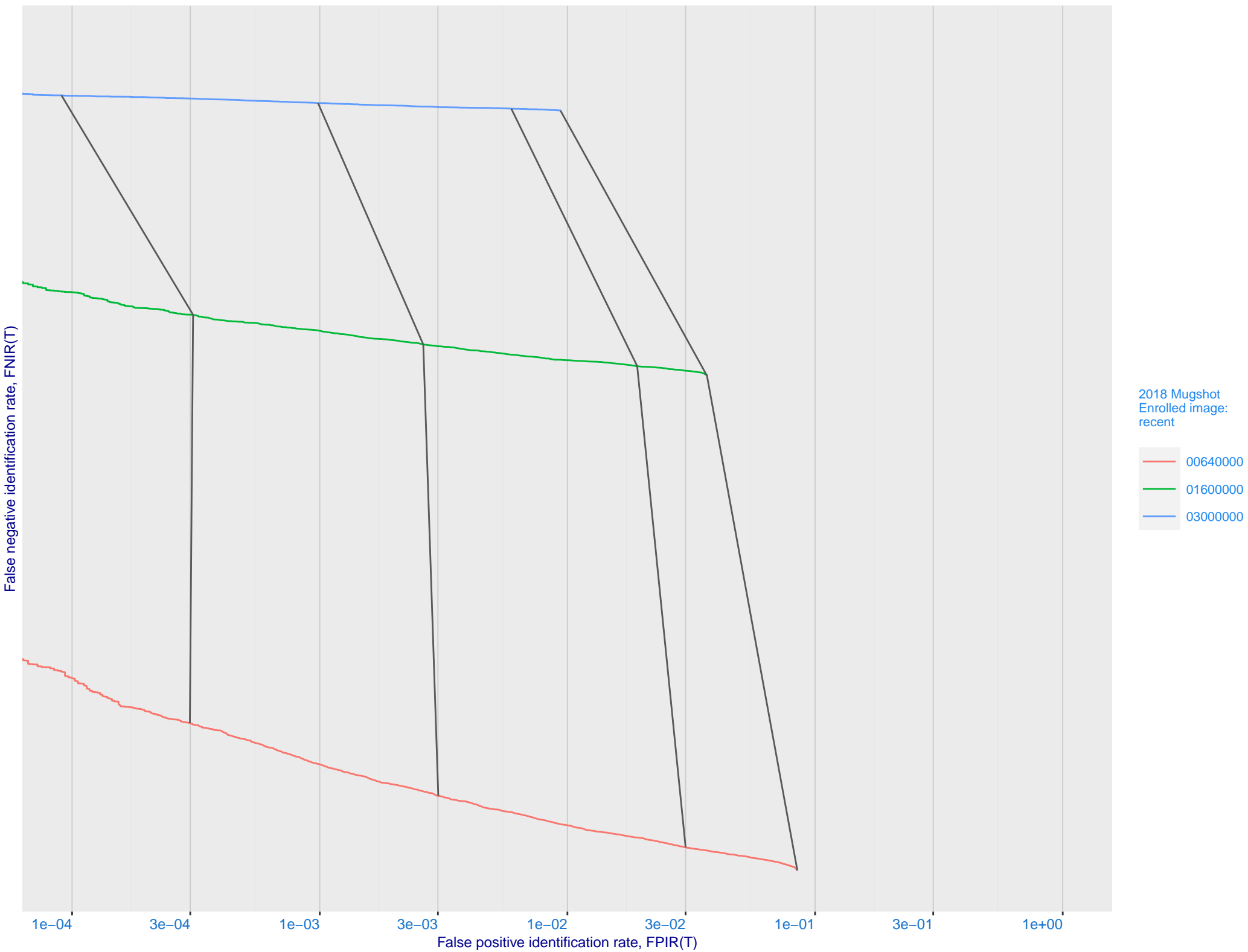
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate



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

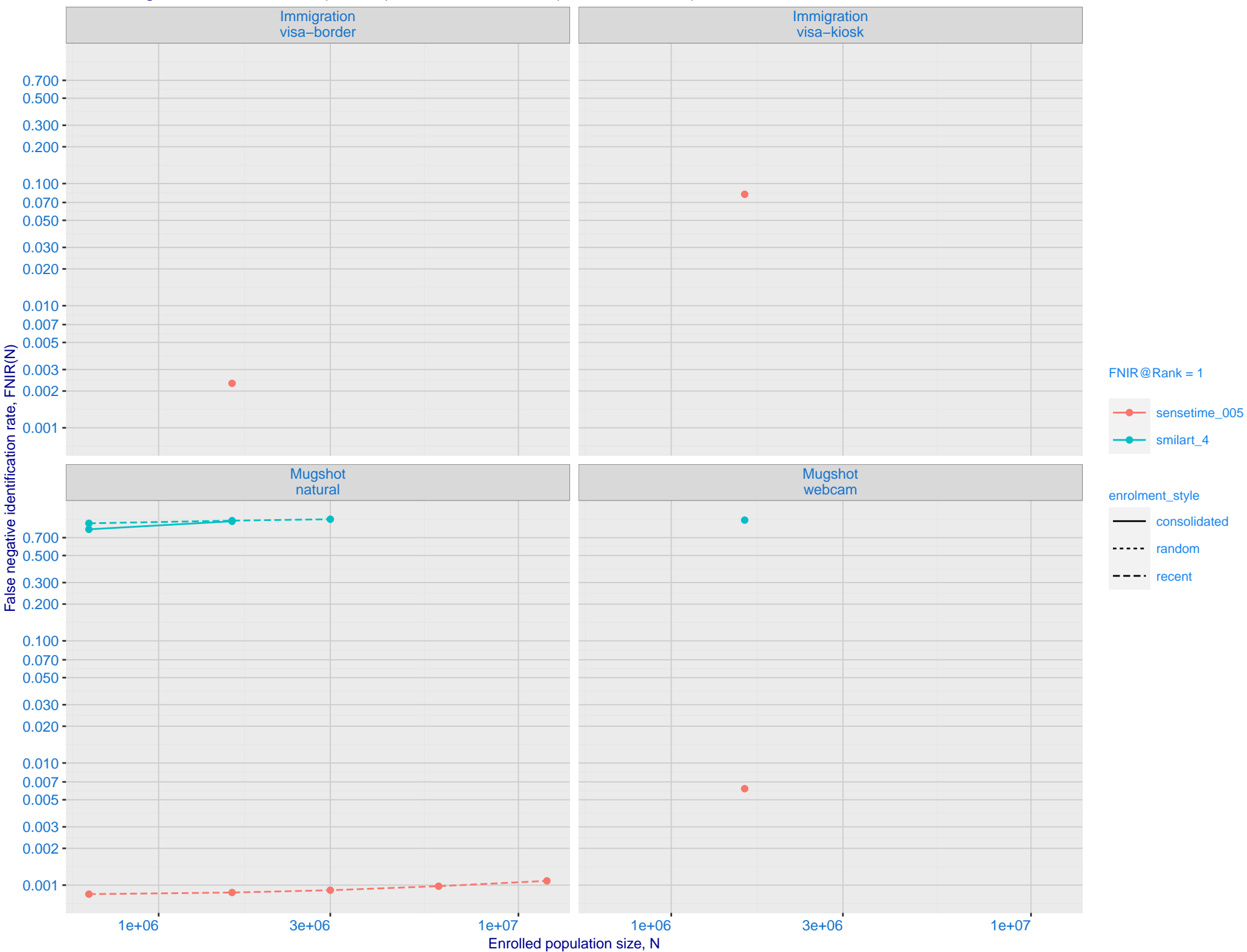


J: DET for Mugshot natural images and various N. Links connect points of equal threshold.

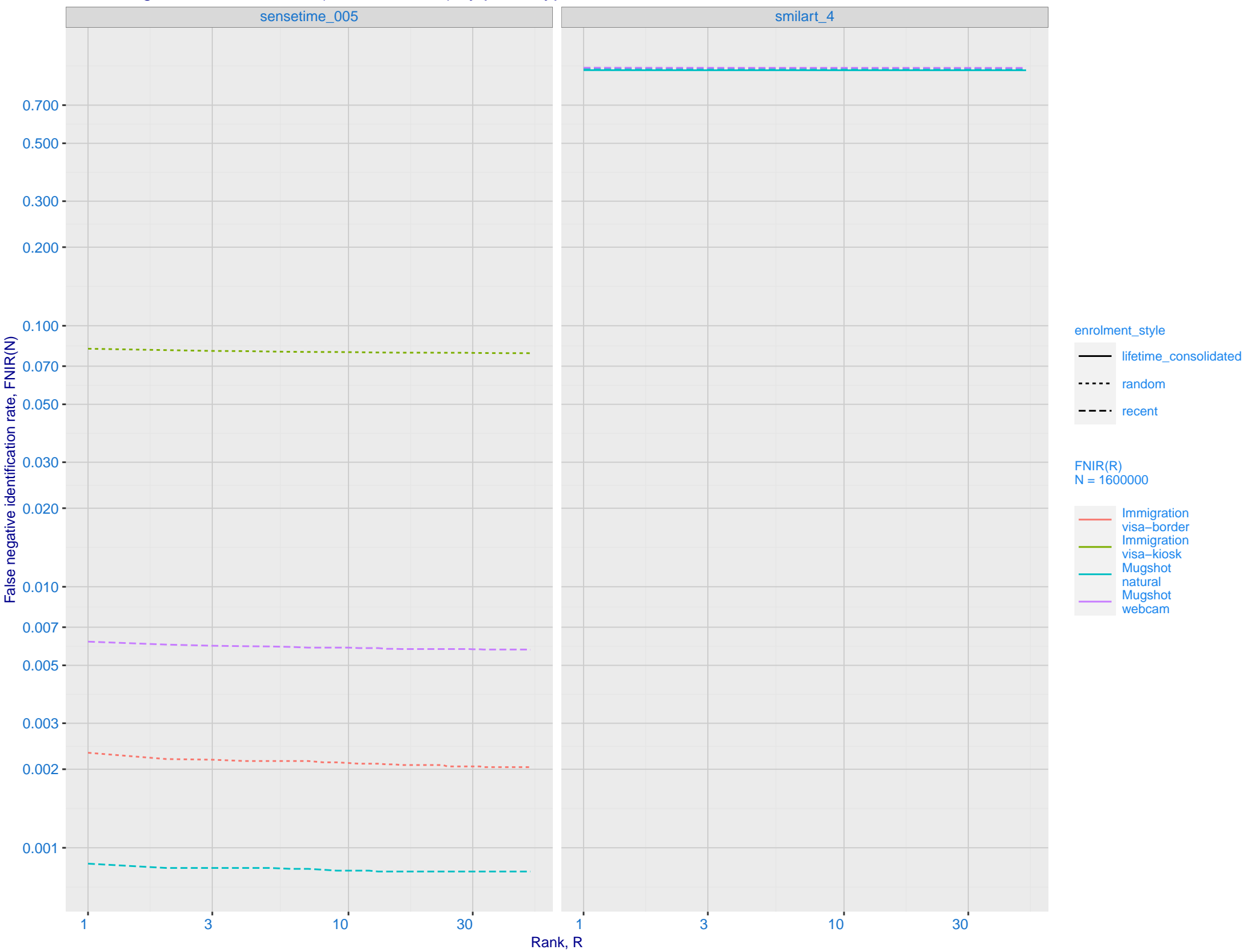




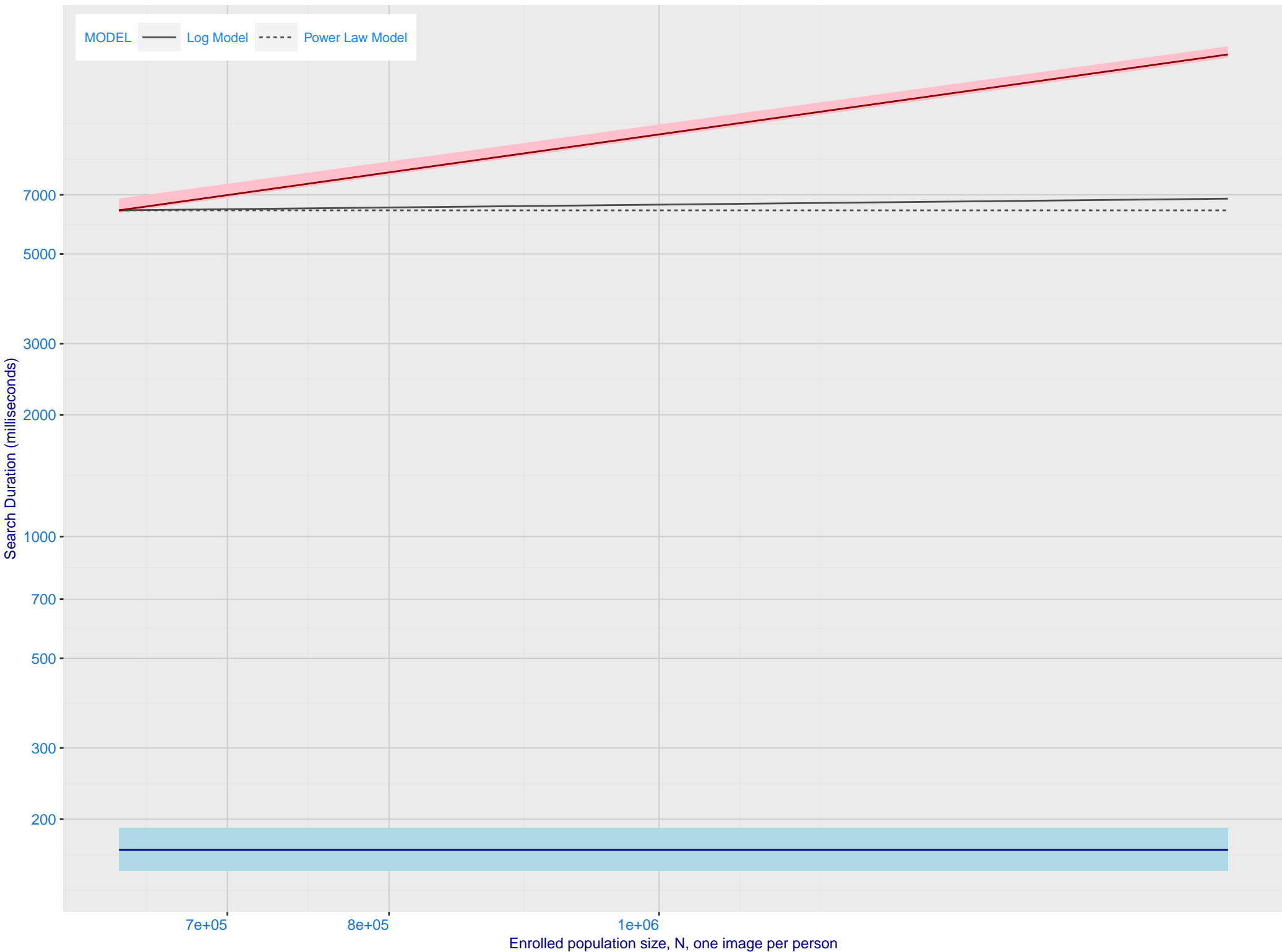
K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime\_005)



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

Dataset: 2018 Mugshot N = 3068801

