A: Datasheet

Algorithm: cyberlink_002

Developer: Cyberlink Corp

Submission Date: 2020_07_31

Template size: 4140 bytes

Template time (2.5 percentile): 723 msec

Template time (median): 725 msec

Template time (97.5 percentile): 776 msec

Investigation:

Frontal mugshot ranking 89 (out of 329) –– FNIR(1600000, 0, 1) = 0.0026 vs. lowest 0.0009 from sensetime_006

Mugshot webcam ranking 59 (out of 291) –– FNIR(1600000, 0, 1) = 0.0117 vs. lowest 0.0057 from sensetime_006

Mugshot profile ranking 112 (out of 260) –– FNIR(1600000, 0, 1) = 0.5770 vs. lowest 0.0550 from sensetime_006

Immigration visa–border ranking 58 (out of 218) –– FNIR(1600000, 0, 1) = 0.0038 vs. lowest 0.0009 from sensetime_006

Immigration visa–kiosk ranking 74 (out of 215) –– FNIR(1600000, 0, 1) = 0.1073 vs. lowest 0.0487 from cubox_000

Identification:

Frontal mugshot ranking 55 (out of 329) –– FNIR(1600000, T, L+1) = 0.0147, FPIR=0.001000 vs. lowest 0.0017 from nec_005
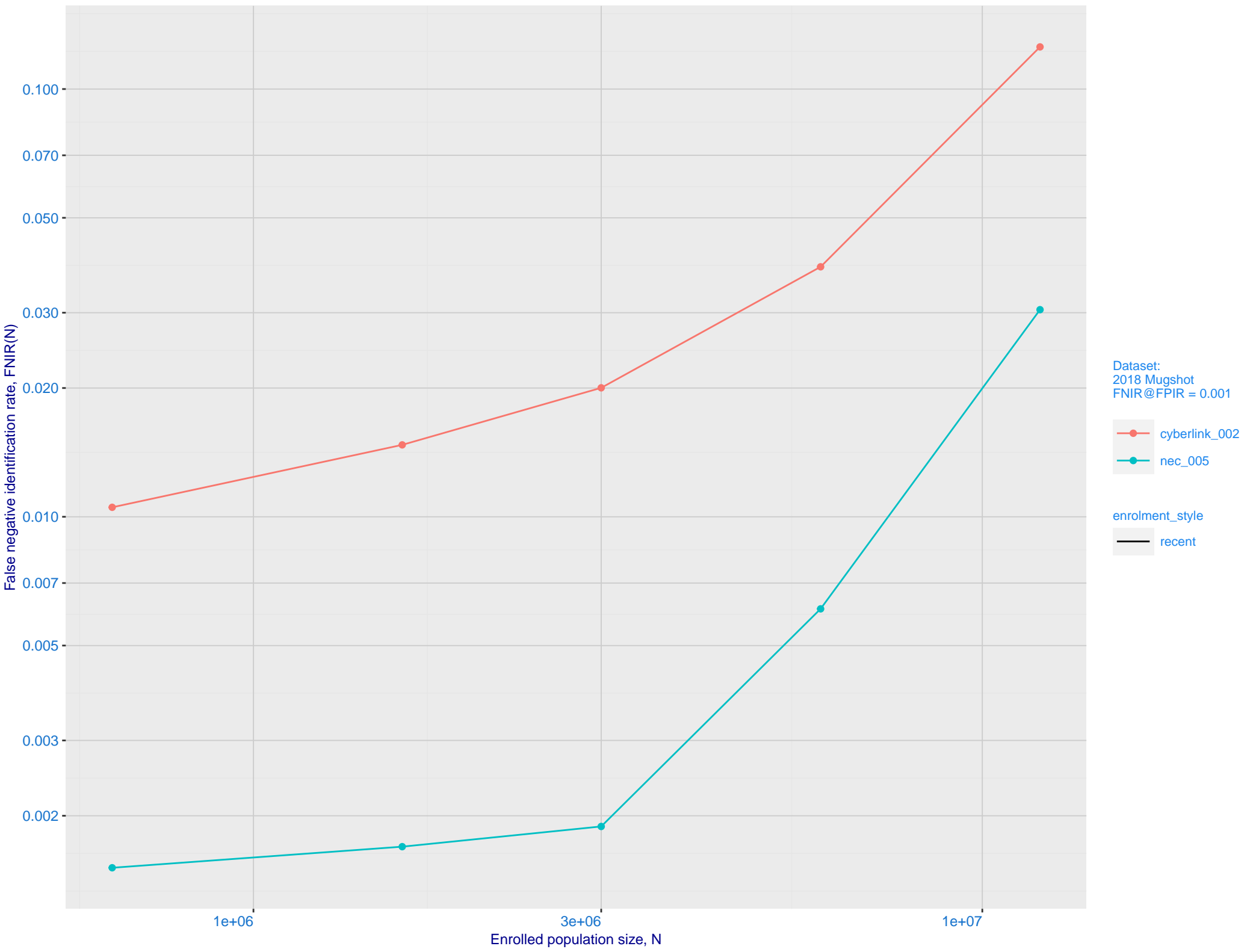
Mugshot webcam ranking 59 (out of 289) –– FNIR(1600000, T, L+1) = 0.0530, FPIR=0.001000 vs. lowest 0.0120 from nec_005

Mugshot profile ranking 103 (out of 259) –– FNIR(1600000, T, L+1) = 0.9884, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000
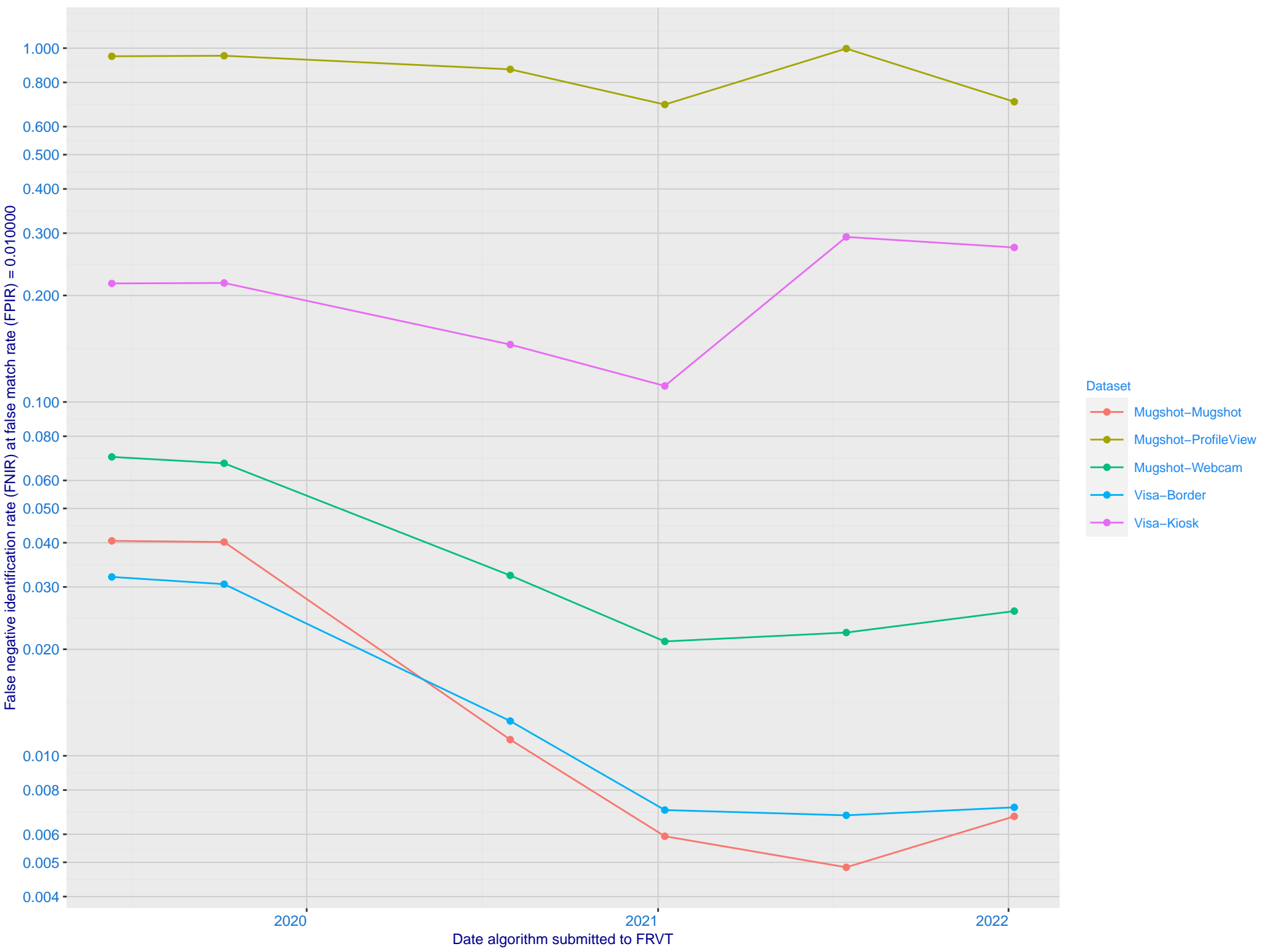
Immigration visa–border ranking 54 (out of 217) –– FNIR(1600000, T, L+1) = 0.0242, FPIR=0.001000 vs. lowest 0.0032 from paravision_009

Immigration visa–kiosk ranking 75 (out of 212) –– FNIR(1600000, T, L+1) = 0.3003, FPIR=0.001000 vs. lowest 0.0728 from paravision_009
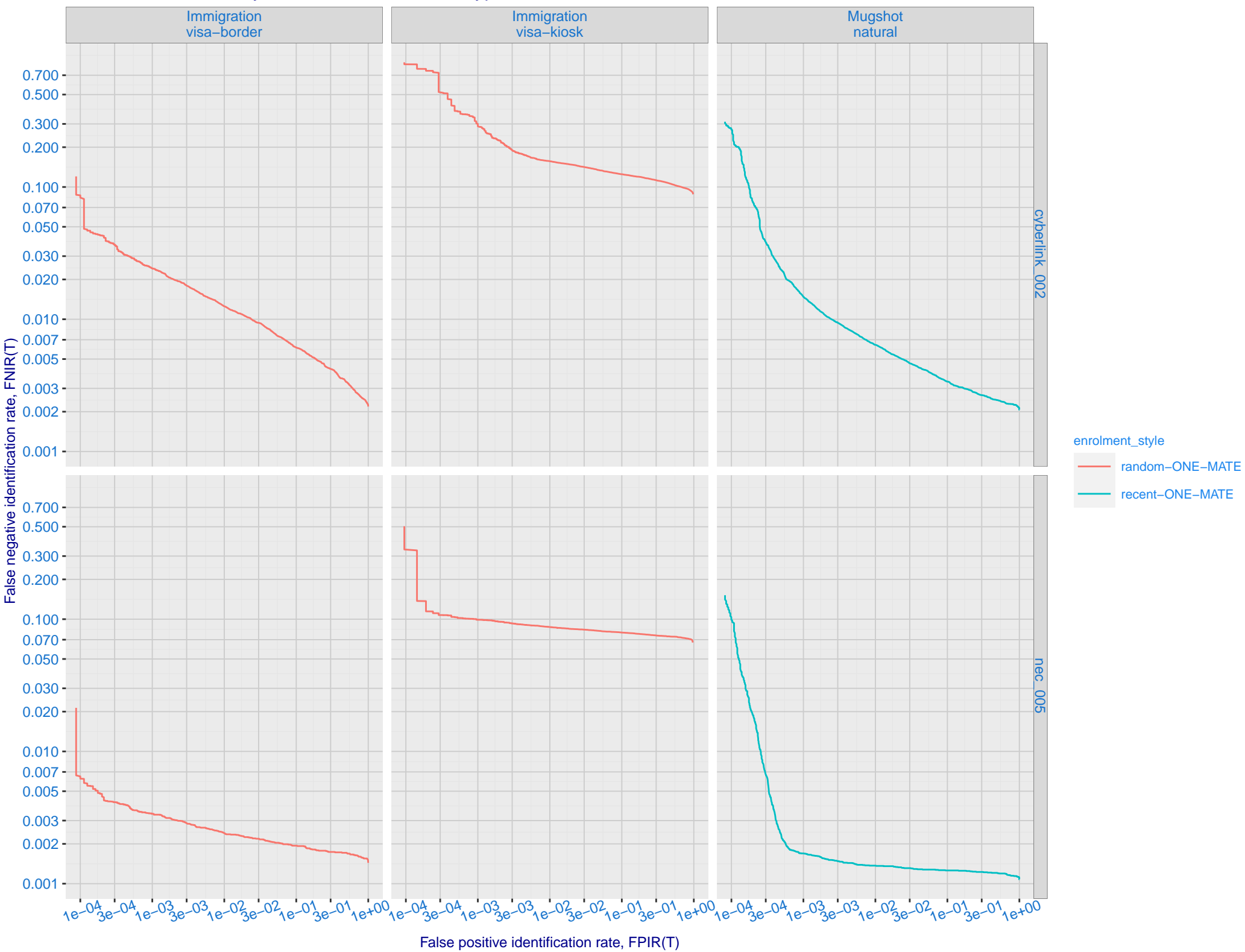
B: Mugshot natural images, identification mode: FNIR(N, L+1, T) vs. most accurate (nec_005)

C: Evolution of accuracy for CYBERLINK 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
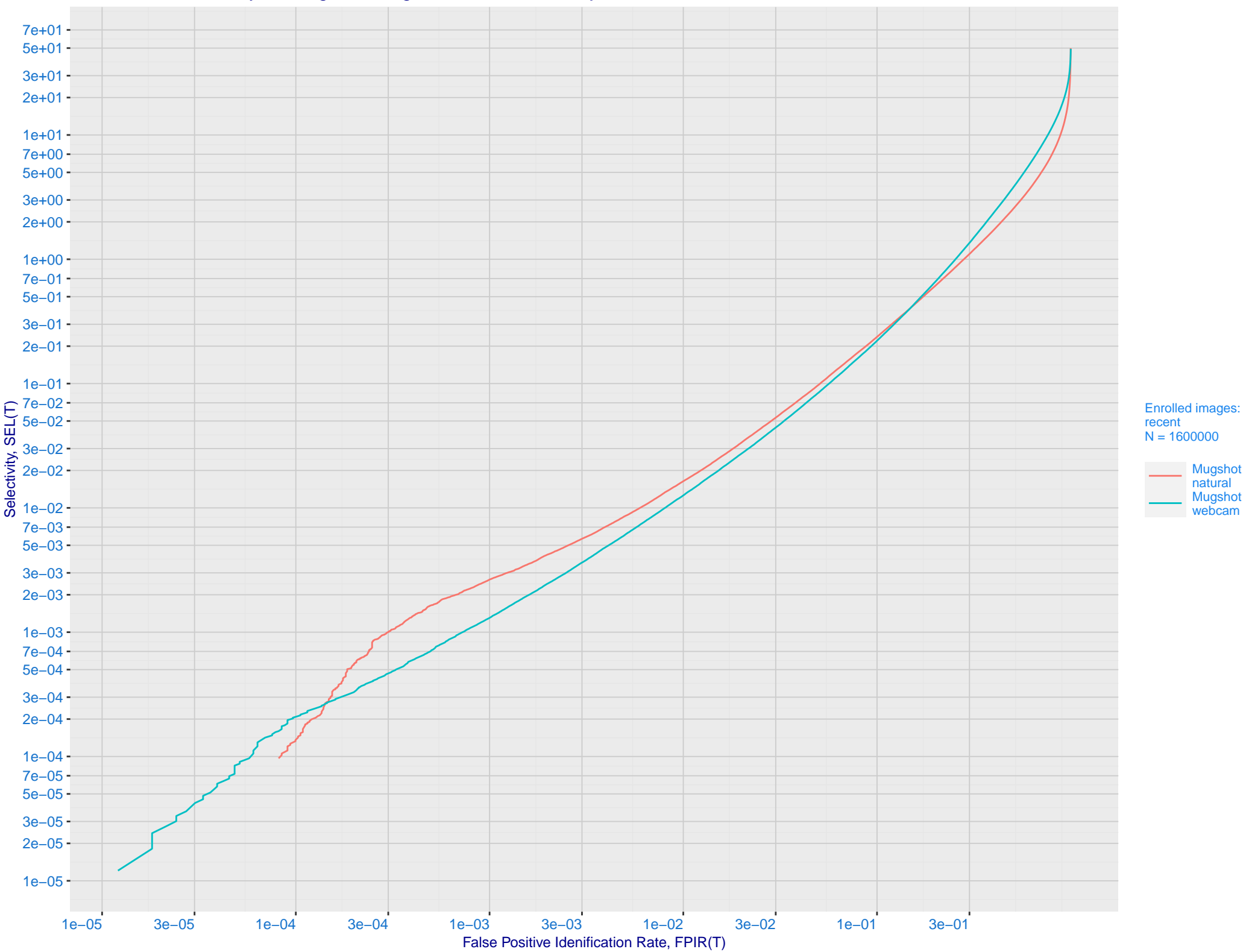
Date algorithm submitted to FRVT

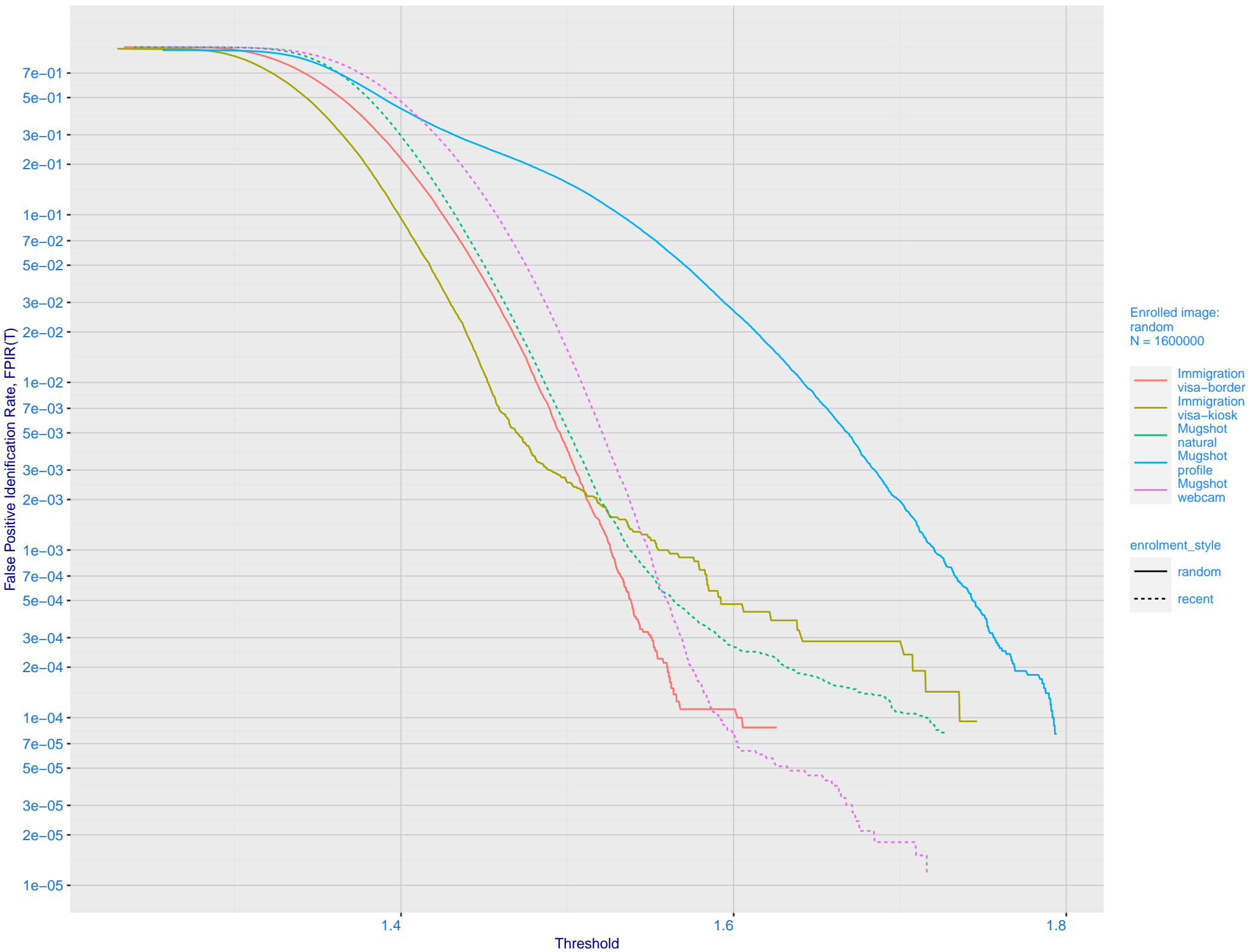D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals

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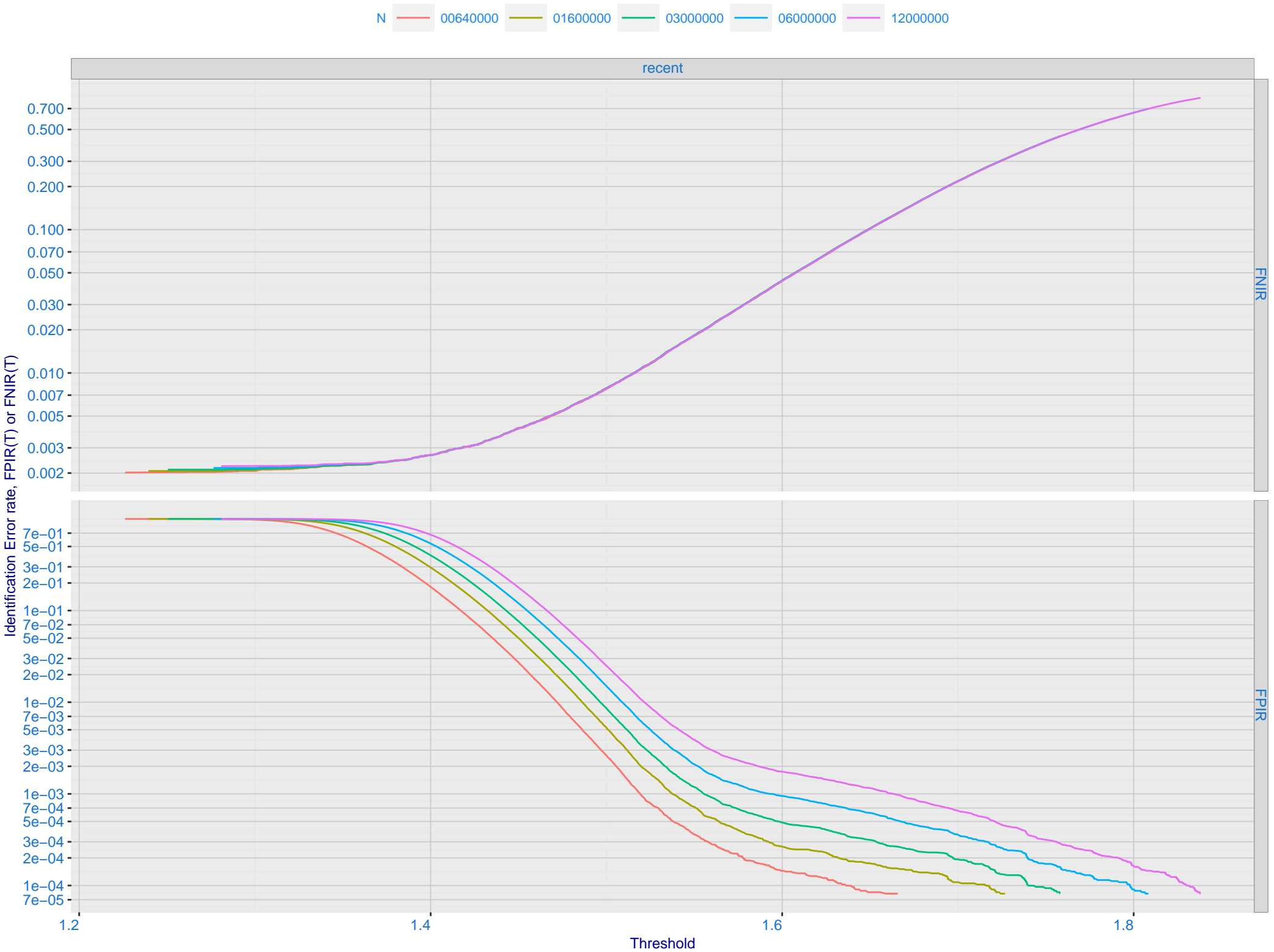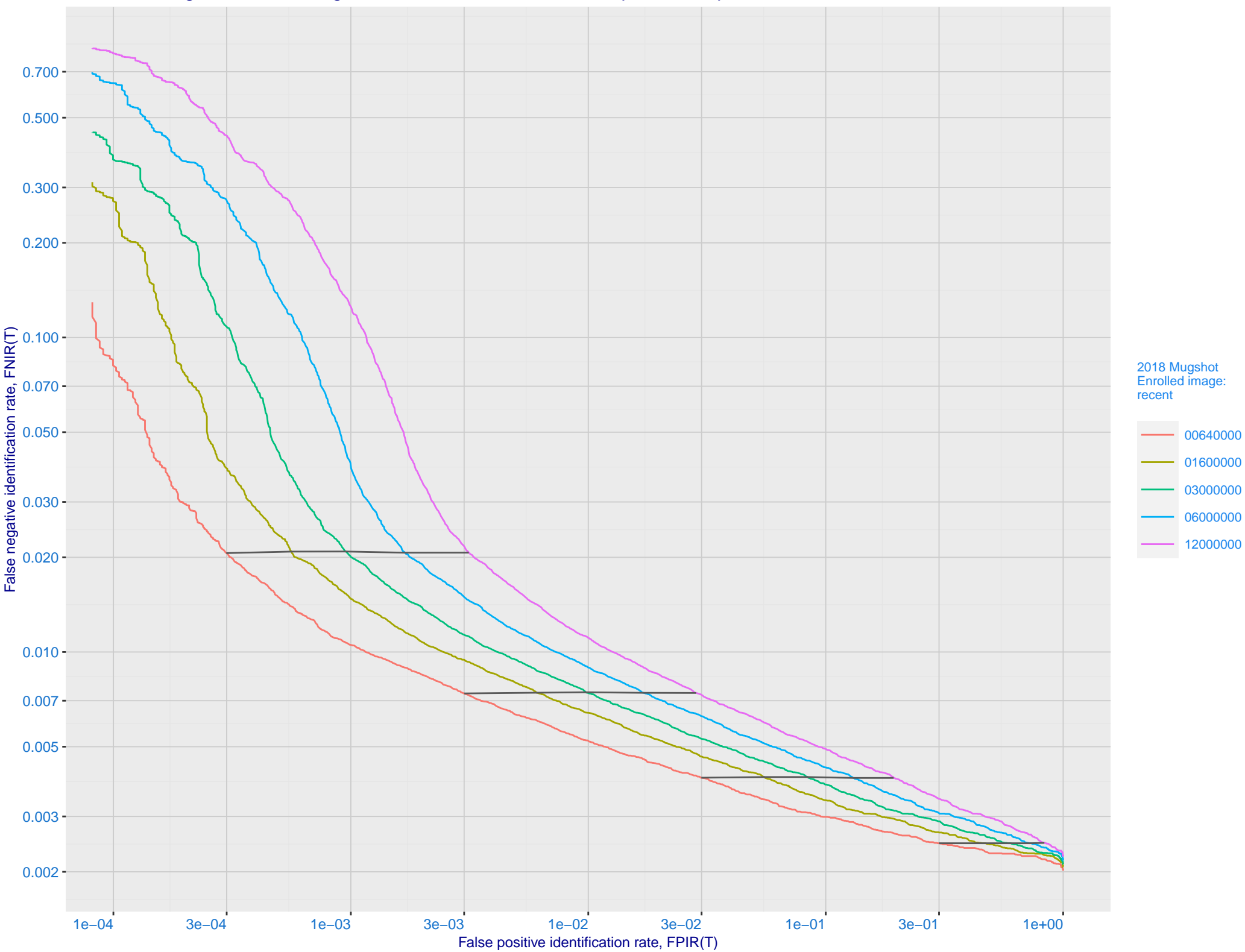
F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate

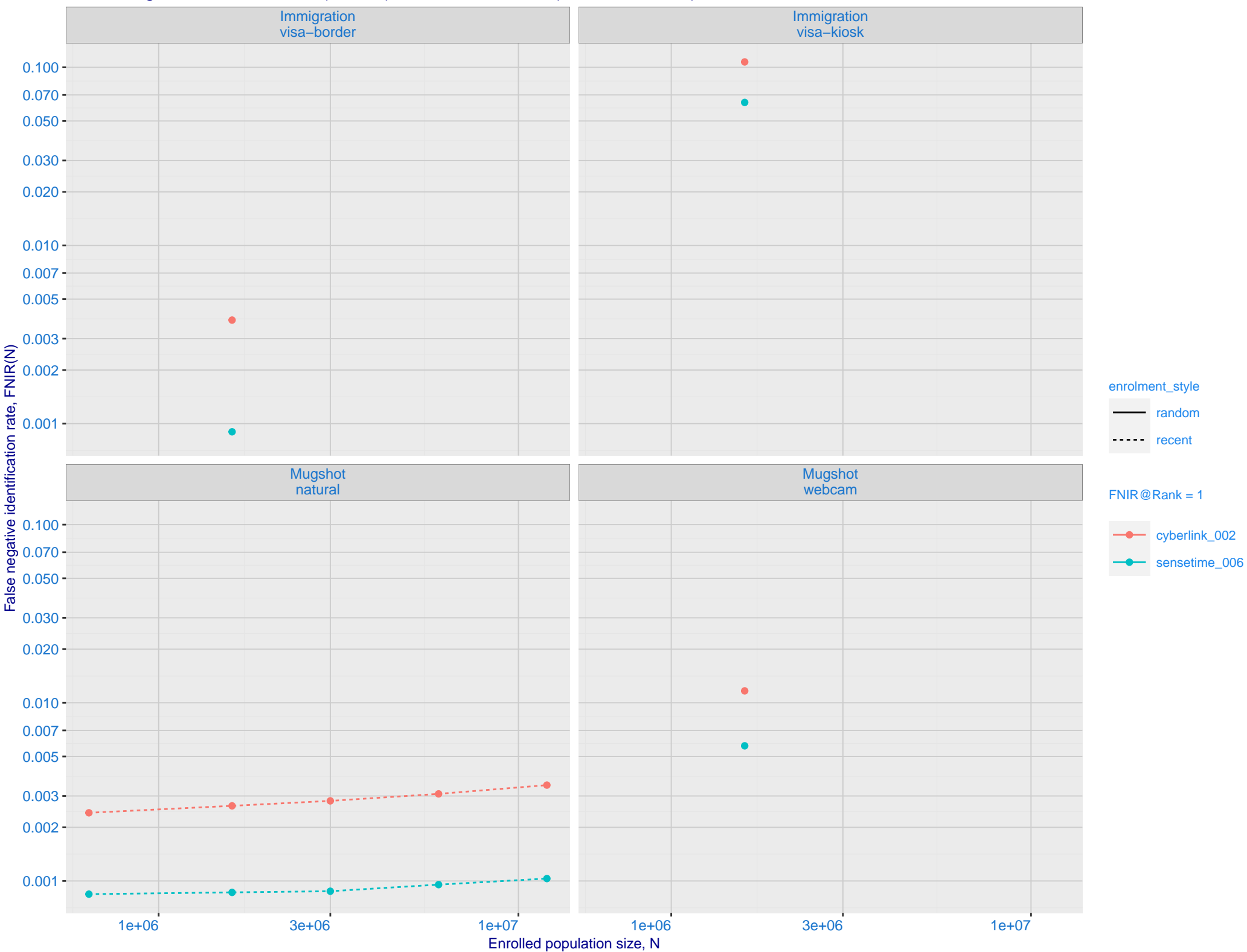G: FPIR dependence on T by probe type for N = 1600000 subjects

J: DET for Mugshot natural images and various N. Links connect points of equal threshold.
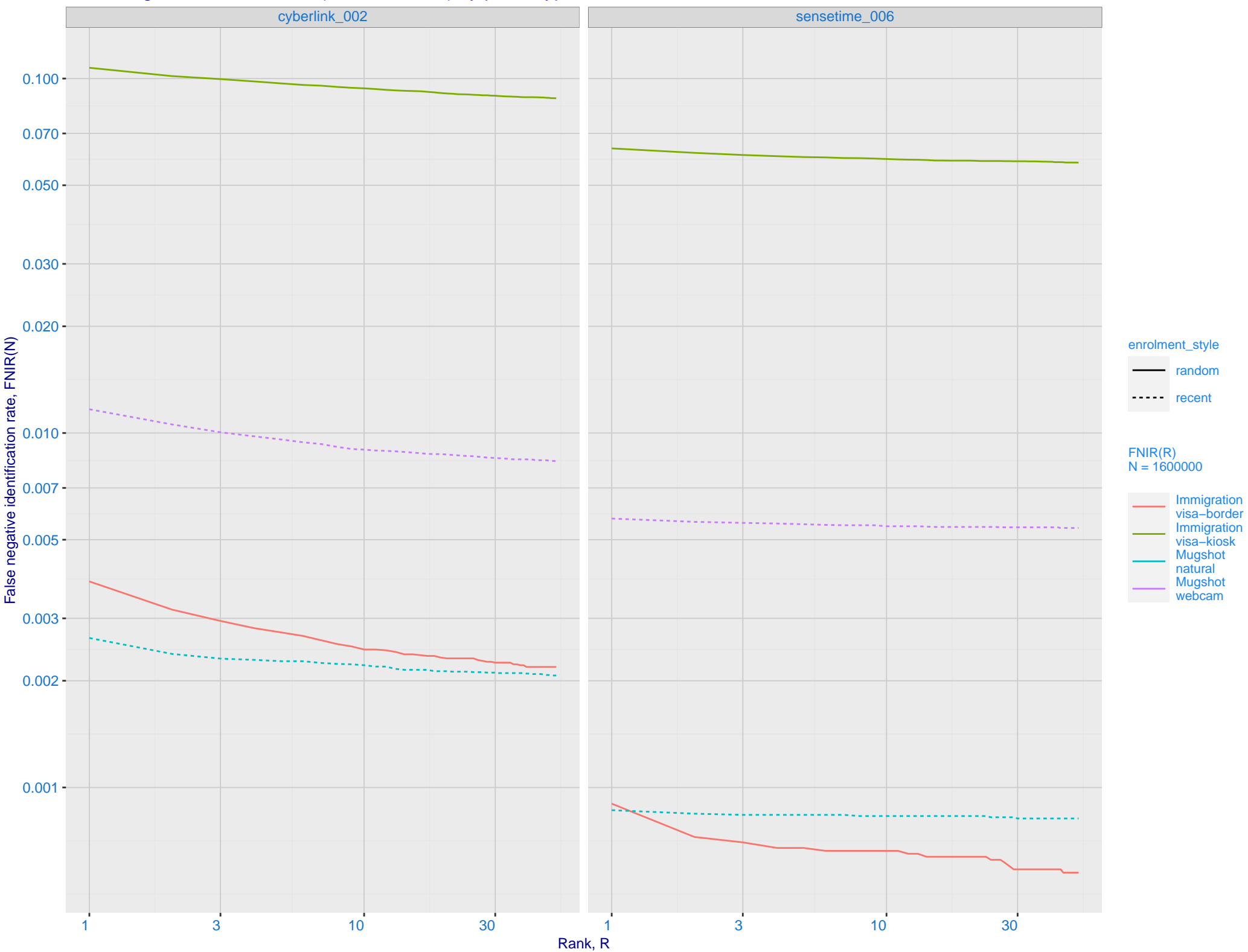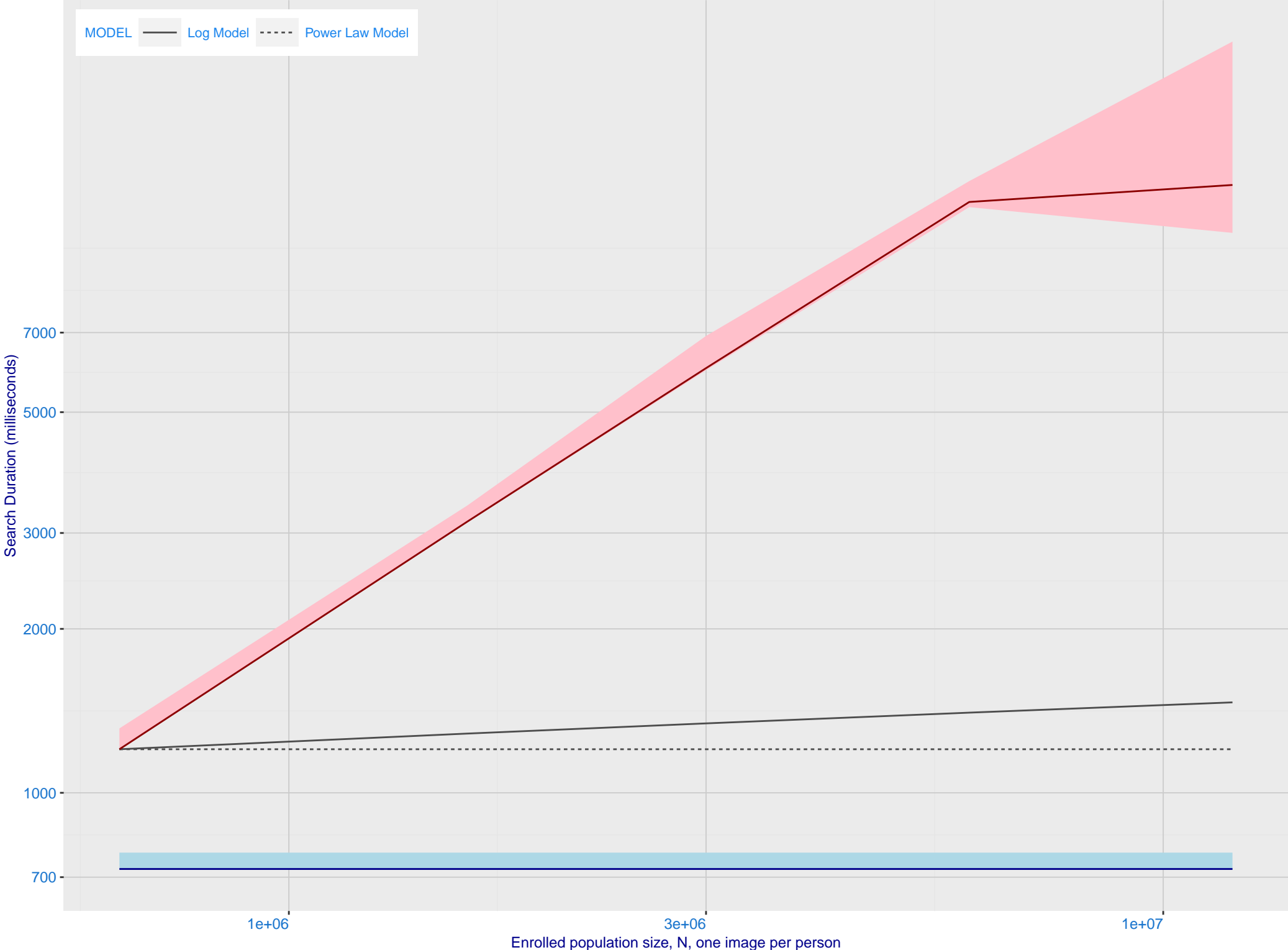
K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_006)

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   (00,02]   (04,06]   (08,10]   (12,14]
(02,04]   (06,08]   (10,12]   (14,18]
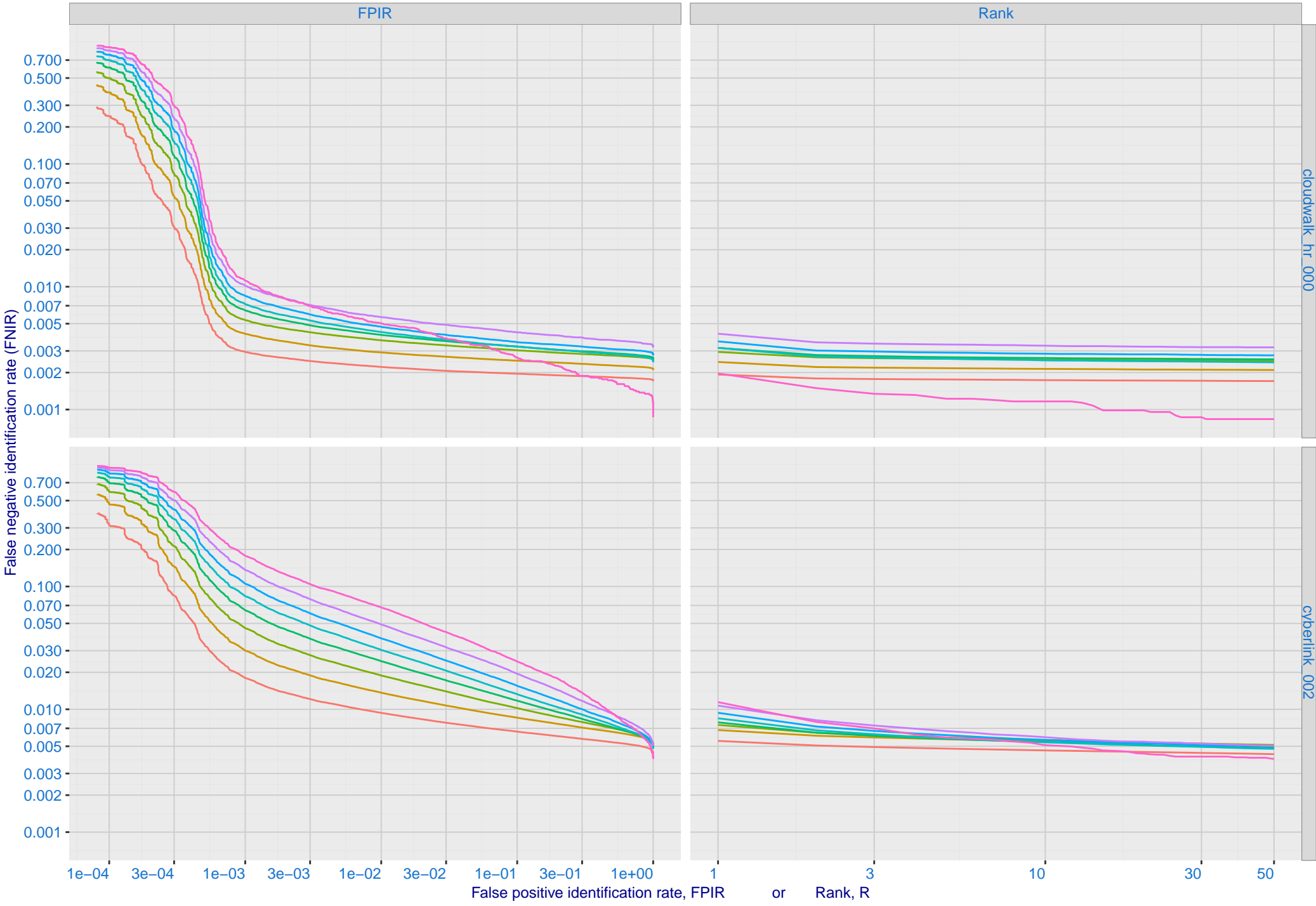
R: Decline of genuine scores with ageing, with some eventually dropping below typical thresholds shown by the horizontal lines