

# Supplementary Material

## FaceQSORT: A Multi-Face Tracking Method based on Biometric and Appearance Features

Robert Jöchl and Andreas Uhl

### A: Genuine and Imposter Scores

A multi-face tracker can be compared with a biometric system (e.g., a set of query images (detected faces) are matched against a database of enrolled identities (active tracks)). Matching is based on a similarity score, and in a perfect system, the genuine scores do not overlap with the imposter scores. In the context of FaceQSORT, the genuine scores represent the cosine similarity that result when a detected face is compared with the corresponding stored faces (active tracks). The imposter scores, on the other hand, represent the cosine similarities that are achieved when a detected face is compared with all other stored faces (tracks). Table 1 shows the mean ( $\mu$ ) and the standard deviation ( $\sigma$ ) of the genuine and the imposter score distribution, as well as their overlap (iou), the equal-error-rate (eer) and the area under curve (auc). Considering the eer, the BIO-SW01 and BIO-SF01 obtained the best results.

Table 1: Presents the equal-error-rate (eer), the area under curve (auc), the overlap (iou) between the genuine (gen.) and imposter (imp.) scores as well as their mean ( $\mu$ ) and standard deviation ( $\sigma$ ).

ChokePoint							
model	eer	auc	iou	$\mu_{gen.}$	$\sigma_{gen.}$	$\mu_{imp.}$	$\sigma_{imp.}$
BIO-AF01	0.24	0.82	0.081	0.23	0.17	0.59	0.31
BIO-AF02	0.06	0.98	0.028	0.36	0.15	0.85	0.13
BIO-FN01	0.27	0.8	0.082	0.2	0.16	0.49	0.28
BIO-FN02	0.12	0.94	0.077	0.29	0.16	0.75	0.21
BIO-MF01	0.19	0.89	0.076	0.33	0.093	0.5	0.1
BIO-SF01	0.04	0.99	0.012	0.43	0.17	0.94	0.092
BIO-SW01	0.04	0.99	0.011	0.43	0.18	0.95	0.077
BIO-VG01	0.11	0.94	0.075	0.3	0.13	0.7	0.18
APP-RS01	0.16	0.91	0.062	0.22	0.094	0.42	0.11

LTFT							
model	eer	auc	iou	$\mu_{gen.}$	$\sigma_{gen.}$	$\mu_{imp.}$	$\sigma_{imp.}$
BIO-AF01	0.38	0.71	0.058	0.14	0.14	0.38	0.33
BIO-AF02	0.07	0.98	0.024	0.33	0.14	0.8	0.15
BIO-FN01	0.22	0.86	0.058	0.18	0.14	0.56	0.28
BIO-FN02	0.10	0.96	0.045	0.26	0.16	0.75	0.2
BIO-MF01	0.25	0.83	0.056	0.41	0.1	0.54	0.1
BIO-SF01	0.07	0.98	0.022	0.52	0.16	0.9	0.1
BIO-SW01	0.05	0.99	0.022	0.49	0.16	0.92	0.097
BIO-VG01	0.10	0.96	0.04	0.24	0.12	0.65	0.16
APP-RS01	0.15	0.93	0.035	0.19	0.092	0.39	0.092

PLUSFiaQ							
model	eer	auc	iou	$\mu_{gen.}$	$\sigma_{gen.}$	$\mu_{imp.}$	$\sigma_{imp.}$
BIO-AF01	0.27	0.81	0.12	0.22	0.17	0.58	0.32
BIO-AF02	0.08	0.97	0.057	0.32	0.17	0.82	0.16
BIO-FN01	0.18	0.9	0.11	0.21	0.15	0.61	0.26
BIO-FN02	0.08	0.97	0.049	0.27	0.17	0.81	0.18
BIO-MF01	0.18	0.9	0.079	0.33	0.1	0.52	0.1
BIO-SF01	0.06	0.99	0.027	0.41	0.18	0.89	0.1
BIO-SW01	0.04	0.99	0.019	0.46	0.19	0.94	0.08
BIO-VG01	0.09	0.97	0.06	0.25	0.13	0.67	0.15