

Weekly Report (23/04-29/04)

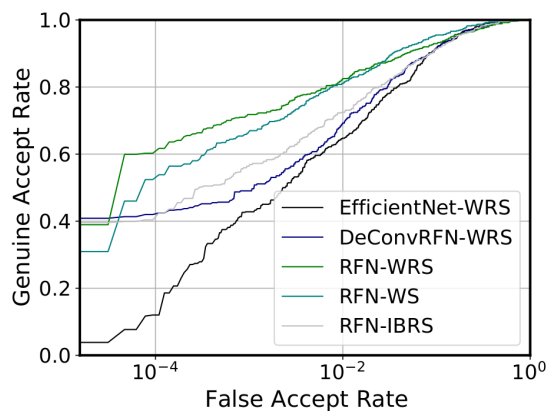
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1 Experiments and Results

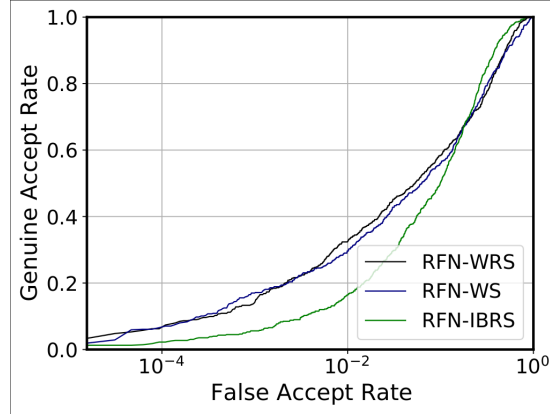
1.1 Finger Knuckle V3 Database with Deformation

The Finger Knuckle V3 Database have 1-104 subjects that have two session samples, and the rest subjects of first session 105-221 just offer one session samples. So as the first experiment, I firstly fine-tuned my model on the one-session 1-104 dataset, and test on the another session 1-104 subjects. So it will have $104 * 6 = 624$ genuine matching scores, and have $104 * 103 * 6 = 64272$ imposter matching scores. From the below figure, if the false accept rate is below 10^{-2} , the RFN-128-WRS is better than the RFN-128-WS.



Model	Genuine	Imposter	EER
RFN-WRS	624	64272	0.08014
DeConvRFN-WRS	624	64272	0.09296
EfficientNet-WRS	624	64272	0.09377
RFN-WS	624	64272	0.06732
RFN-IBRS	624	64272	0.09313

As for the two-session protocol on the database. I should fine-tune my model on the 105-221 subjects, and use two-session protocol to evaluate my model performance on the 1-104 subjects dataset. In totally, it will generate $104 * 6 = 624$ genuine scores, and $104 * 103 * 6$ imposter scores.



Model	Genuine	Imposter	EER
RFN-WS	624	64272	0.25802
RFN-WRS	624	64272	0.26924
RFN-IBRS	624	64272	0.23949

The two-session protocol will use the session1 as the probe and use the session2 as the enrollment. As for the genuine matching scores, each sample of a subject will choose the minimal matching score when compare to the rest samples. In this kind of situation, it will have $104 * 6$ genuine matching scores. Meanwhile, as for the imposter matching scores, it will also choose the minimal value result in $104 * 103 * 6$ imposter matching scores on the confusion matrix.

2 Next Week Plans

1. Follow the last week's plans to detect key points project;
2. Do some ablation experiments as for the deformable finger knuckle database with change shift parameter and rotation parameter.