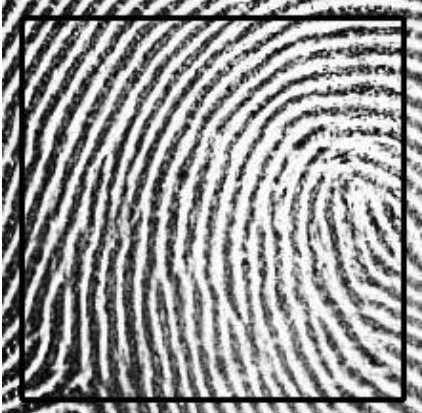









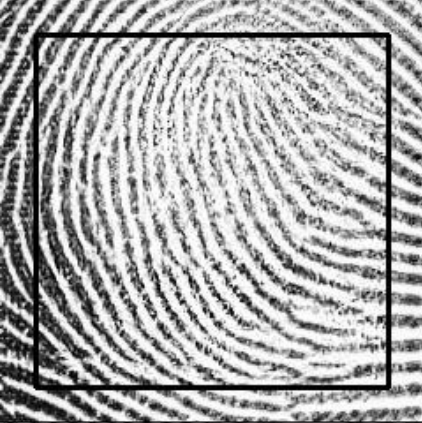
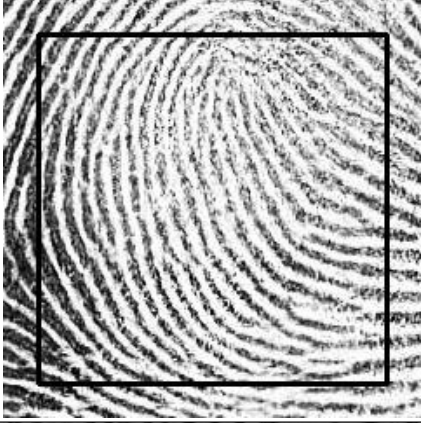

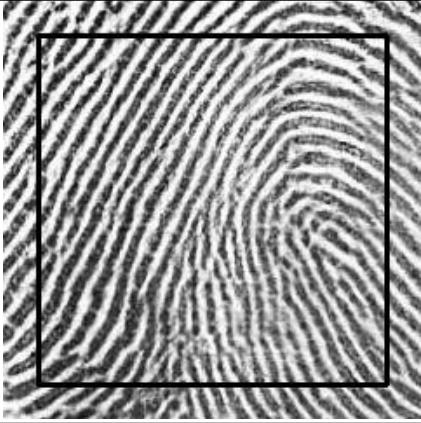




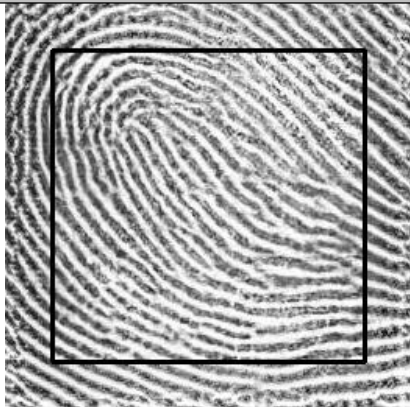
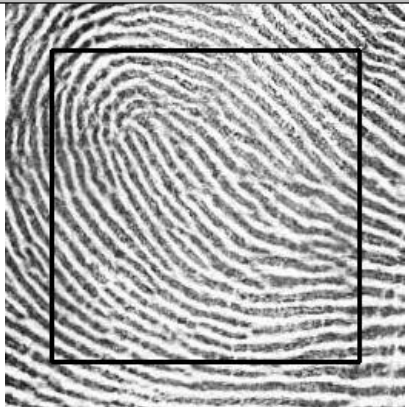
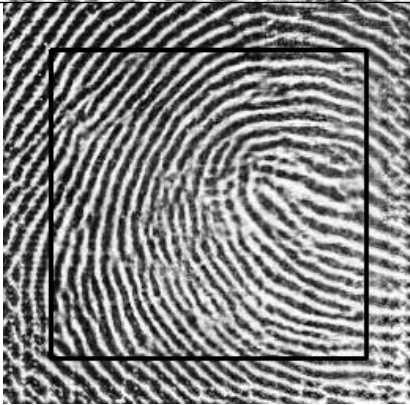
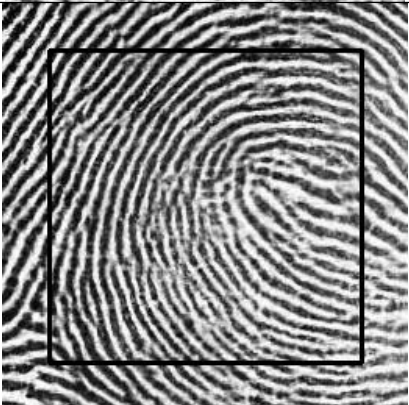




- Samples of expansions from 200x200 to 220x220* - Synthetic Dataset

Outpainted images	Ground truth images
	
	
	
	

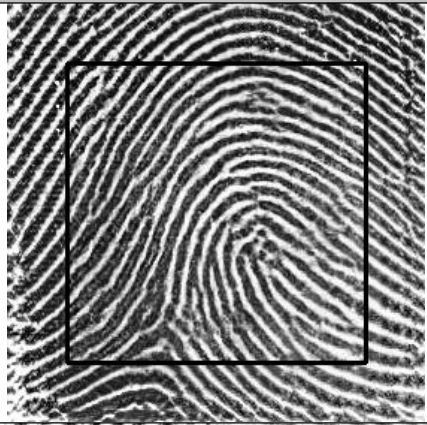
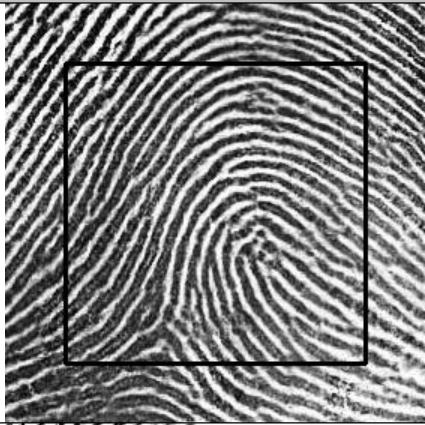




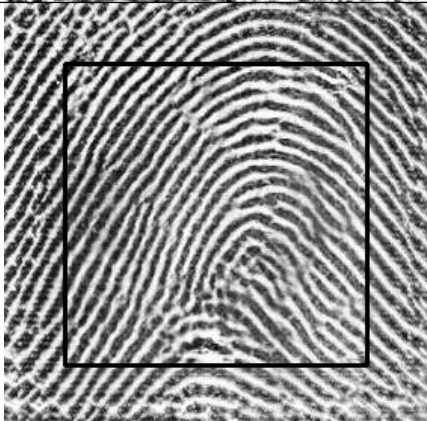
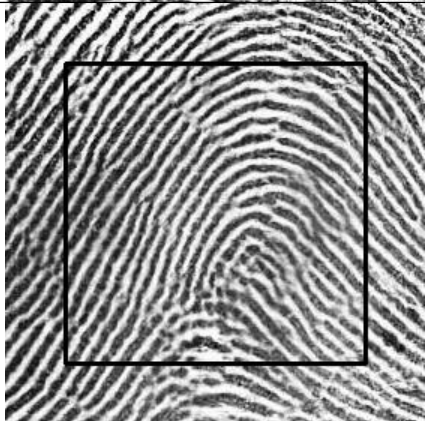
- Samples of expansions from 200x200 to 240x240 - Synthetic Dataset

Outpainted images	Ground truth images
 A grayscale fingerprint image showing a clear ridge pattern. A black rectangular box is overlaid on the central part of the fingerprint, indicating the region that was outpainted.	 A grayscale fingerprint image showing a clear ridge pattern, identical to the outpainted image. A black rectangular box is overlaid on the central part of the fingerprint, indicating the region that was outpainted.
 A grayscale fingerprint image showing a clear ridge pattern. A black rectangular box is overlaid on the central part of the fingerprint, indicating the region that was outpainted.	 A grayscale fingerprint image showing a clear ridge pattern, identical to the outpainted image. A black rectangular box is overlaid on the central part of the fingerprint, indicating the region that was outpainted.
 A grayscale fingerprint image showing a clear ridge pattern. A black rectangular box is overlaid on the central part of the fingerprint, indicating the region that was outpainted.	 A grayscale fingerprint image showing a clear ridge pattern, identical to the outpainted image. A black rectangular box is overlaid on the central part of the fingerprint, indicating the region that was outpainted.
 A grayscale fingerprint image showing a clear ridge pattern. A black rectangular box is overlaid on the central part of the fingerprint, indicating the region that was outpainted.	 A grayscale fingerprint image showing a clear ridge pattern, identical to the outpainted image. A black rectangular box is overlaid on the central part of the fingerprint, indicating the region that was outpainted.

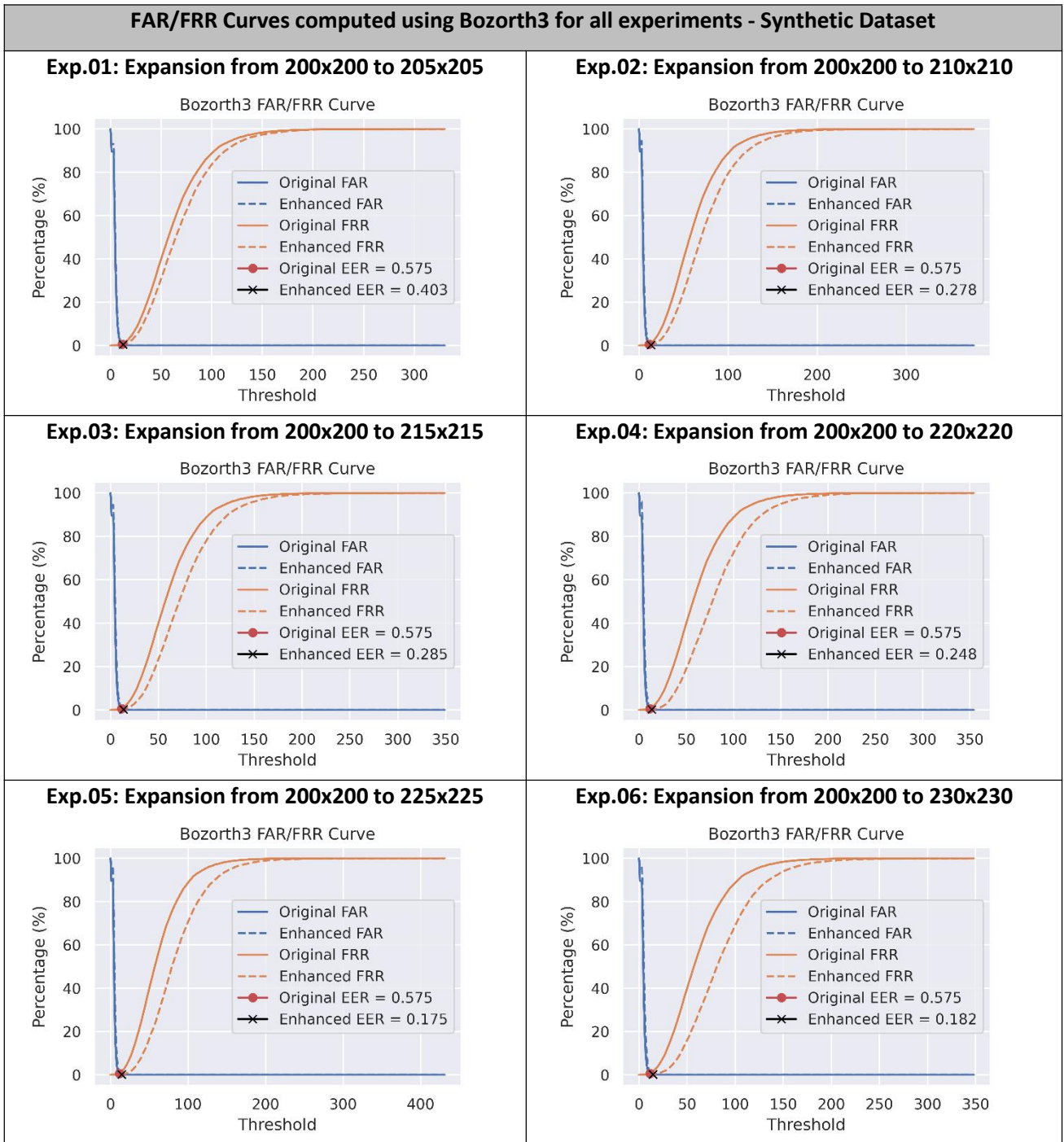
- Samples of expansions from 200x200 to 260x260 - Synthetic Dataset

Outpainted images	Ground truth images
	
	
	
	

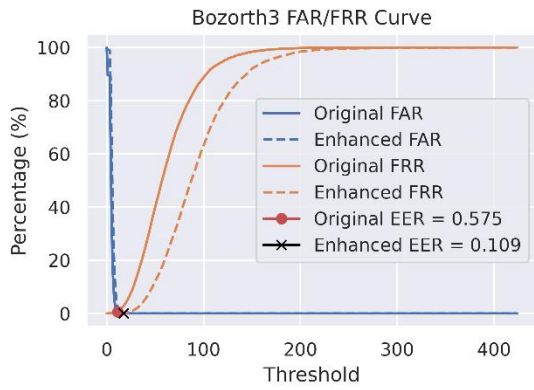
- Samples of expansions from 200x200 to 280x280 - Synthetic Dataset

Outpainted images	Ground truth images
 A grayscale fingerprint image showing a loop pattern. The image is outpainted, with a black square box highlighting the central core area. The background shows a dense, noisy texture.	 A grayscale fingerprint image showing a loop pattern, identical to the outpainted version. A black square box highlights the central core area.
 A grayscale fingerprint image showing a loop pattern. The image is outpainted, with a black square box highlighting the central core area. The background shows a dense, noisy texture.	 A grayscale fingerprint image showing a loop pattern, identical to the outpainted version. A black square box highlights the central core area.
 A grayscale fingerprint image showing a loop pattern. The image is outpainted, with a black square box highlighting the central core area. The background shows a dense, noisy texture.	 A grayscale fingerprint image showing a loop pattern, identical to the outpainted version. A black square box highlights the central core area.
 A grayscale fingerprint image showing a loop pattern. The image is outpainted, with a black square box highlighting the central core area. The background shows a dense, noisy texture.	 A grayscale fingerprint image showing a loop pattern, identical to the outpainted version. A black square box highlights the central core area.

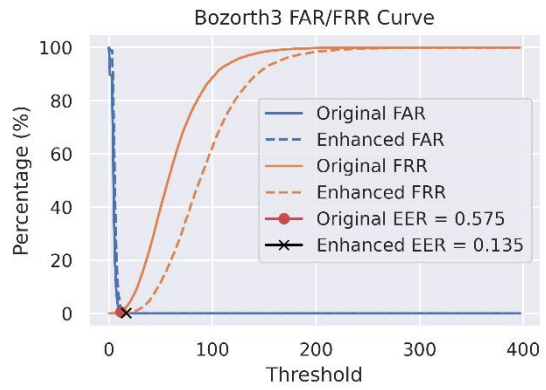
- FAR and FRR curves from all the Experiments made - Synthetic Dataset



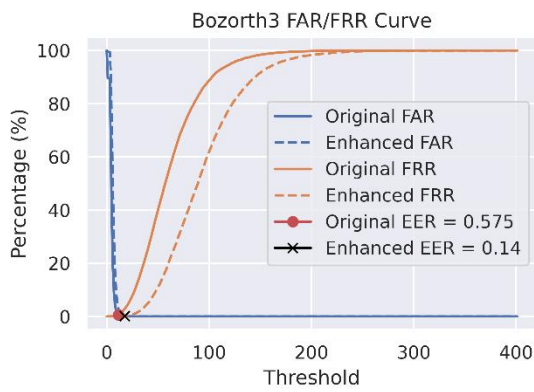
Exp.15: Expansion from 200x200 to 275x275



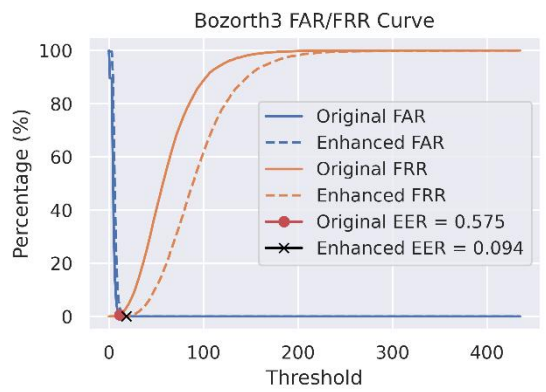
Exp.16: Expansion from 200x200 to 280x280



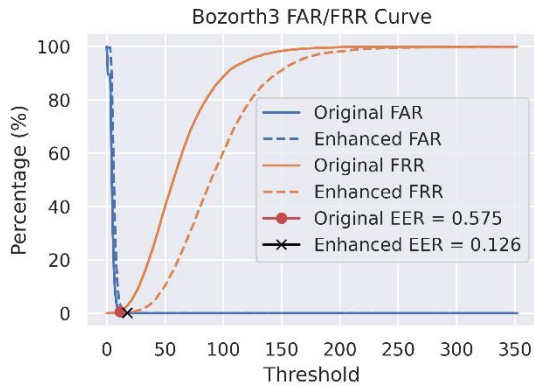
Exp.17: Expansion from 200x200 to 285x285



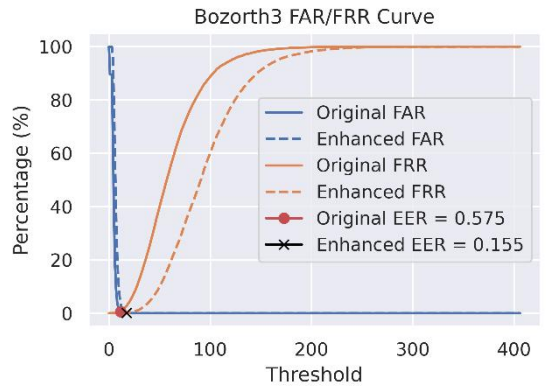
Exp.18: Expansion from 200x200 to 290x290



Exp.19: Expansion from 200x200 to 295x295

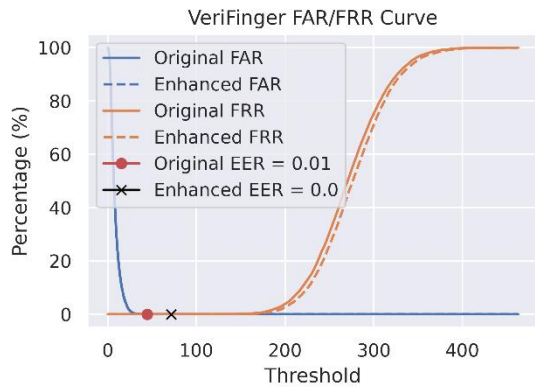


Exp.20: Expansion from 200x200 to 300x300

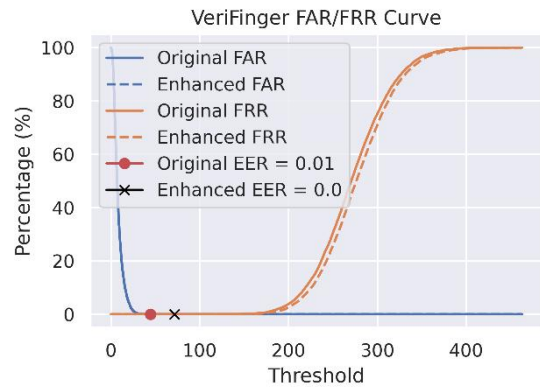


FAR/FRR Curves computed using VeriFinger for all experiments - Synthetic Dataset

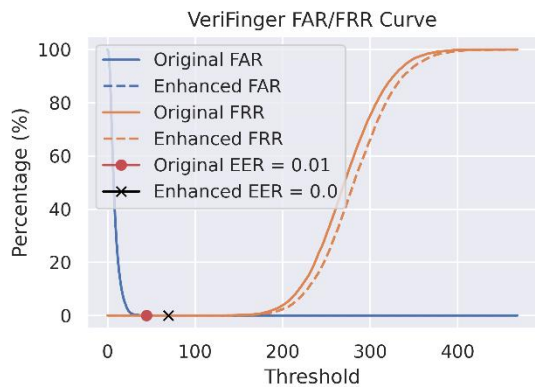
Exp.01: Expansion from 200x200 to 205x205



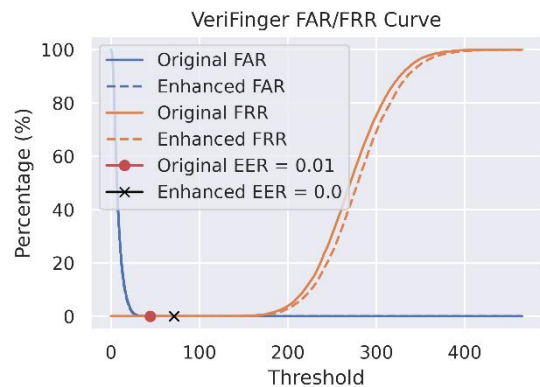
Exp.02: Expansion from 200x200 to 210x210



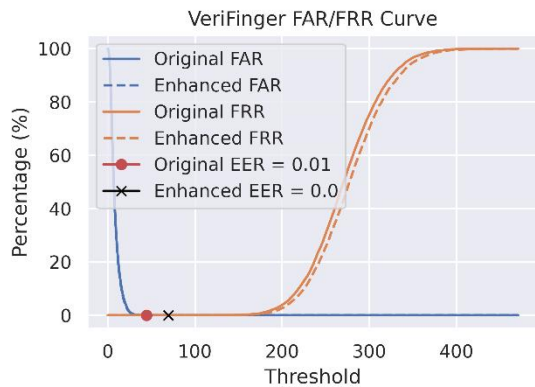
Exp.03: Expansion from 200x200 to 215x215



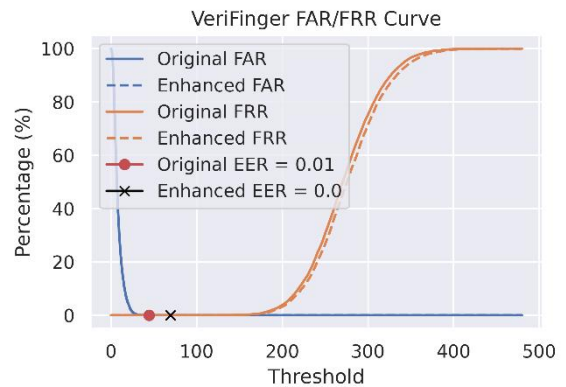
Exp.04: Expansion from 200x200 to 220x220



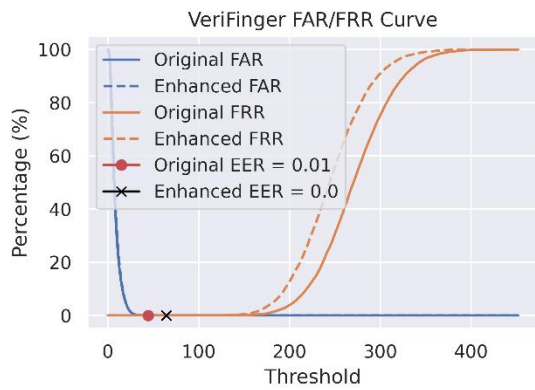
Exp.05: Expansion from 200x200 to 225x225



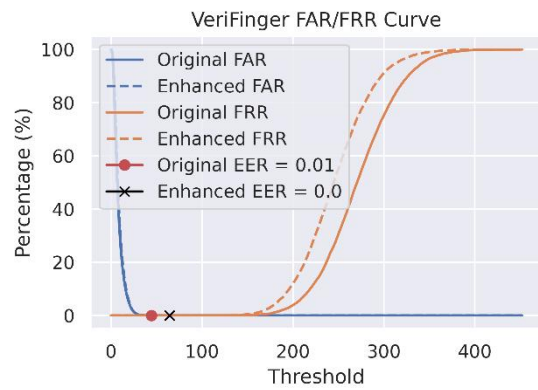
Exp.06: Expansion from 200x200 to 230x230



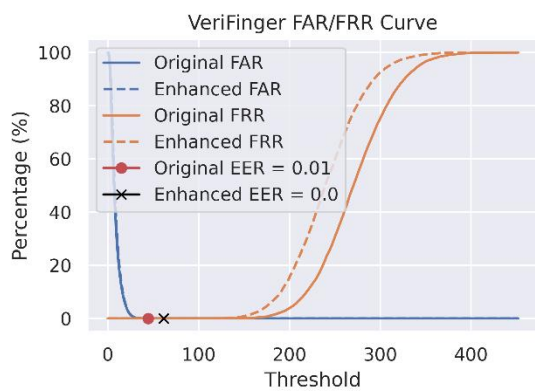
Exp.15: Expansion from 200x200 to 275x275



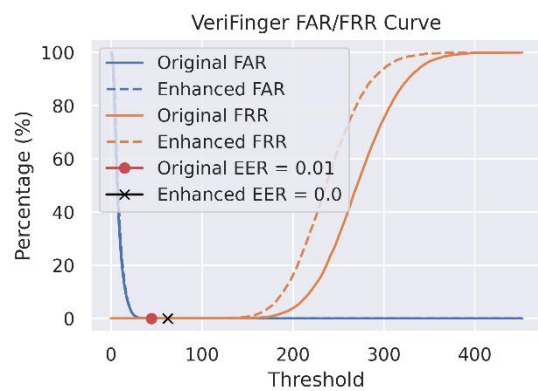
Exp.16: Expansion from 200x200 to 280x280



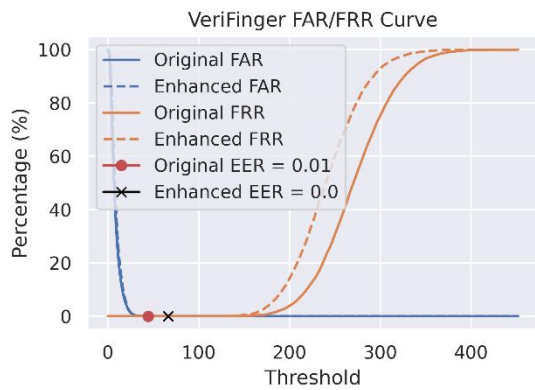
Exp.17: Expansion from 200x200 to 285x285



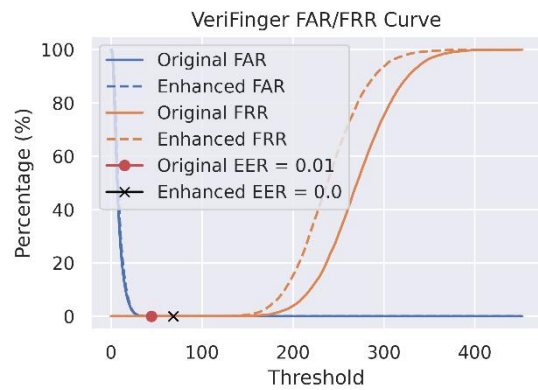
Exp.18: Expansion from 200x200 to 290x290



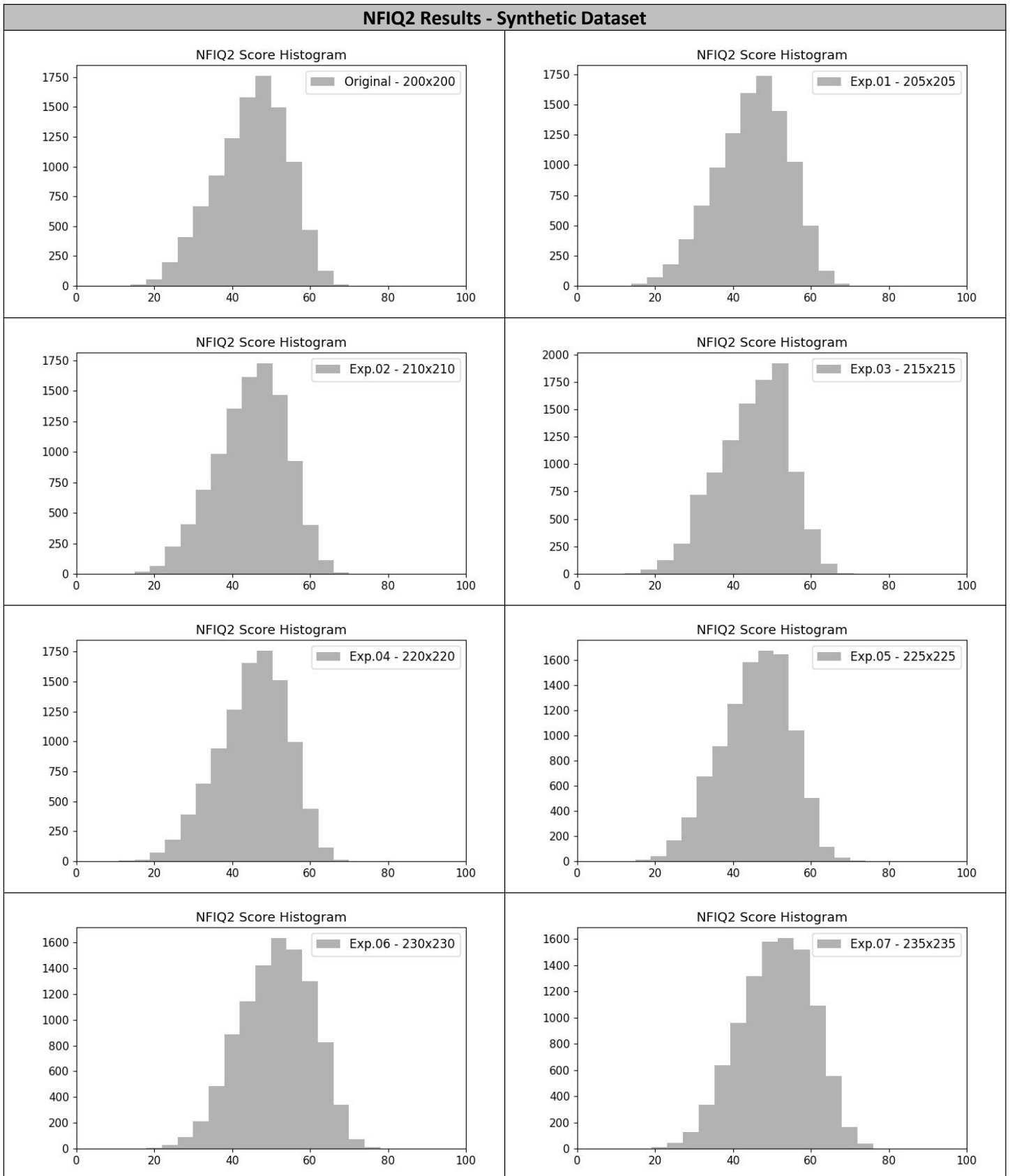
Exp.19: Expansion from 200x200 to 295x295

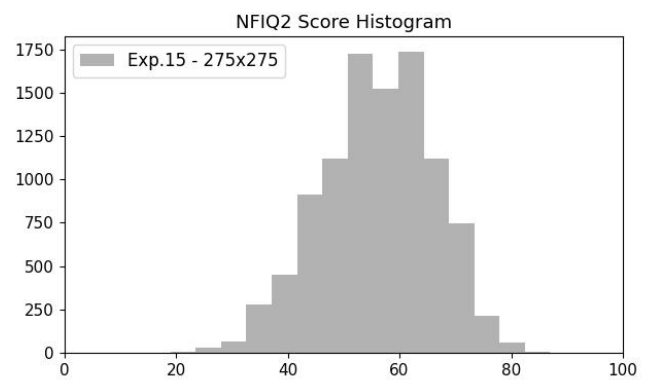
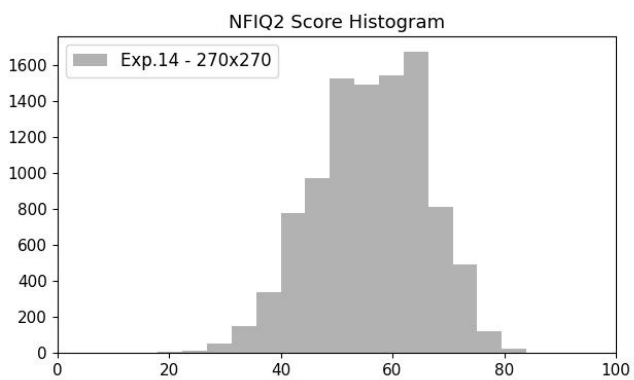
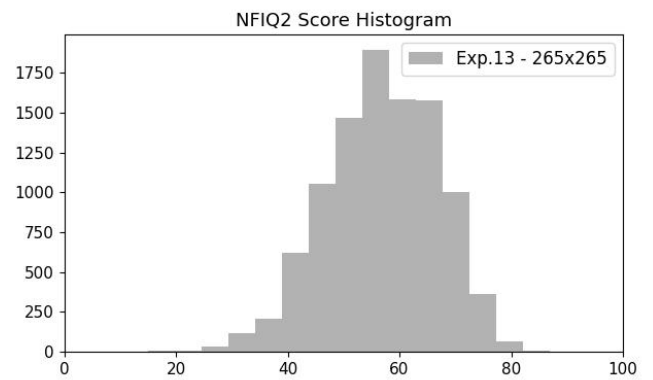
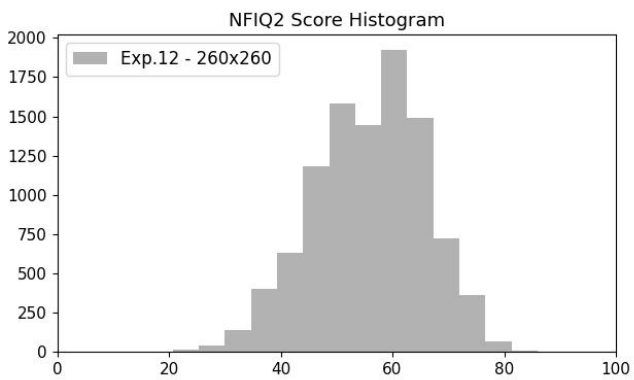
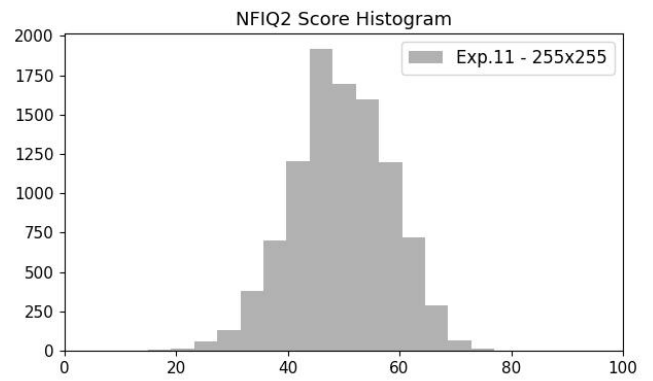
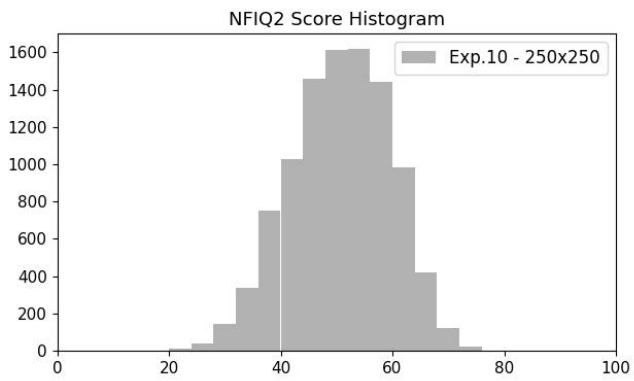
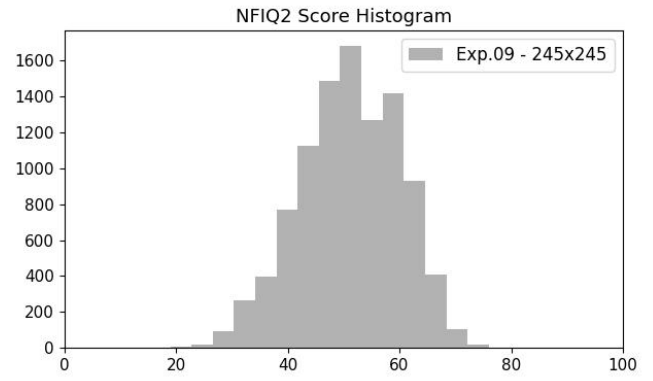
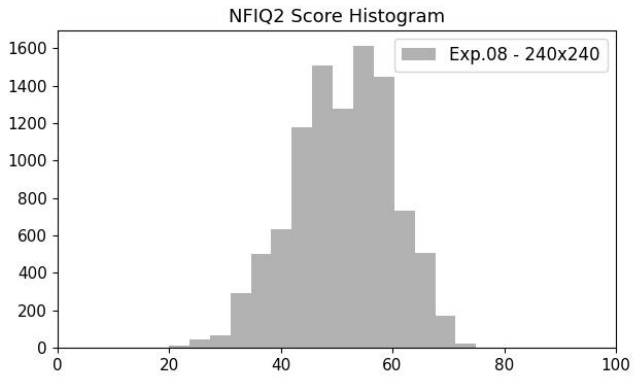


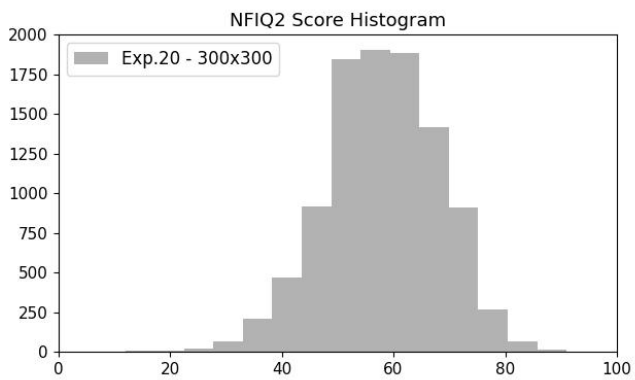
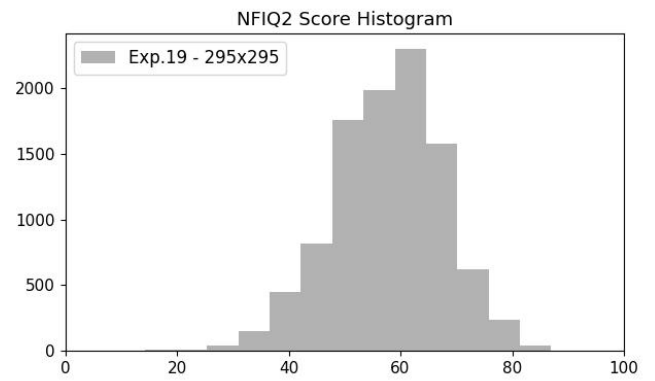
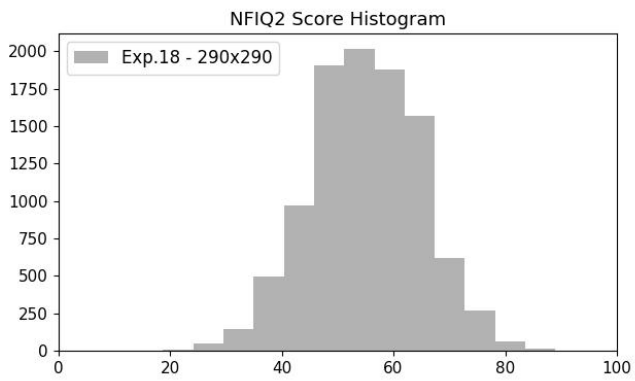
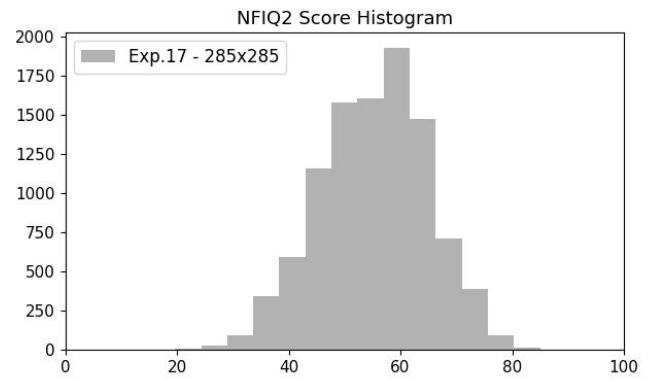
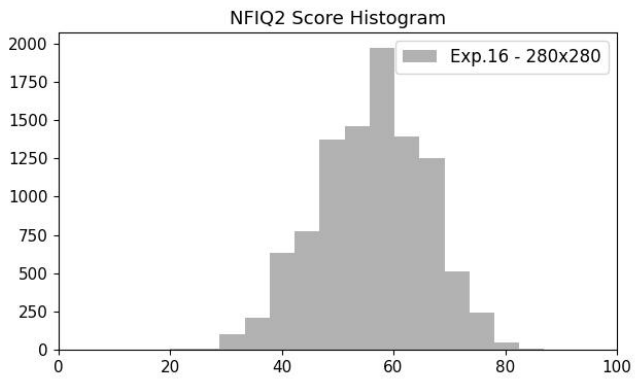
Exp.20: Expansion from 200x200 to 300x300



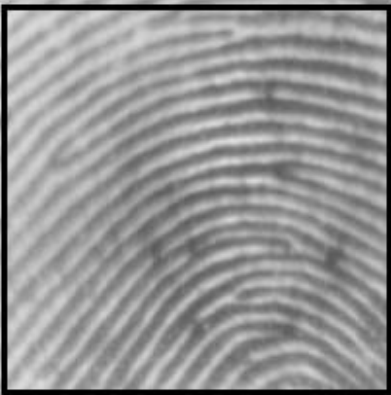
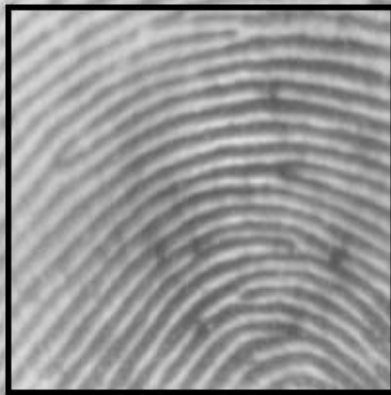
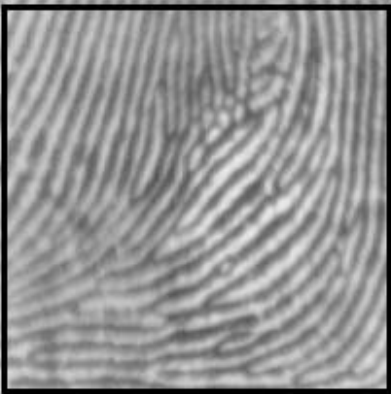
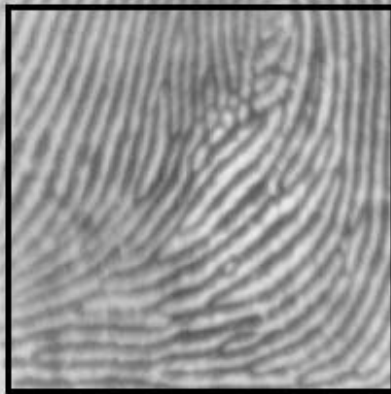
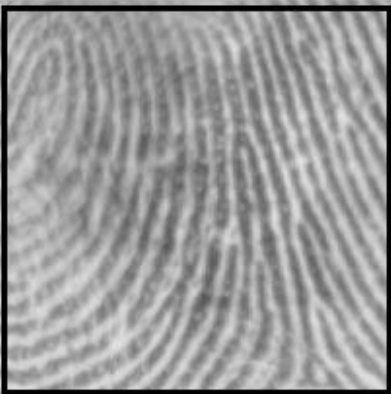
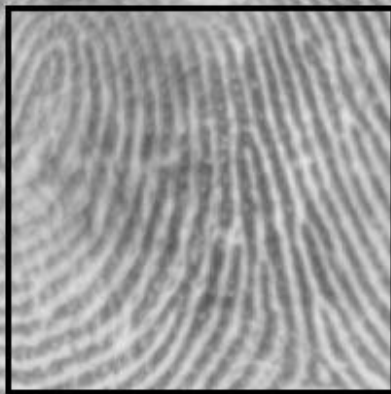
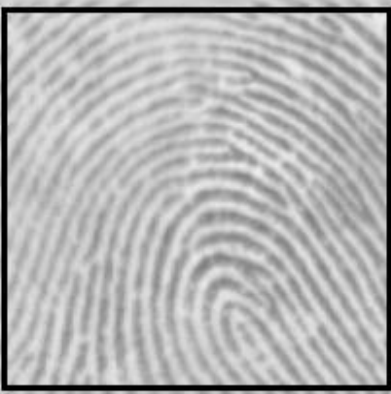
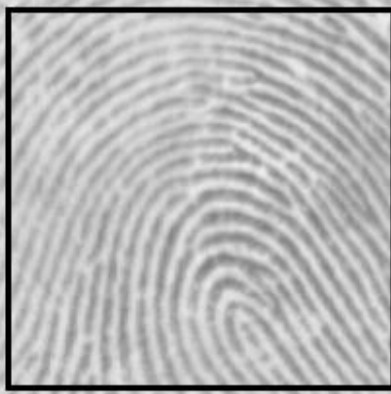
- **NFIQ2 distribution for all fragments expanded in all the Experiments made - Synthetic Dataset**



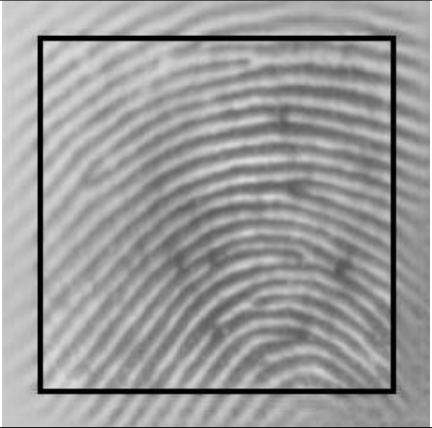
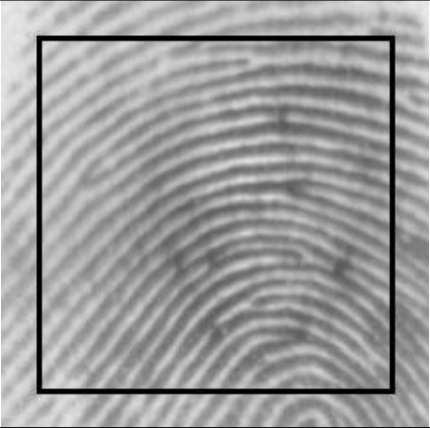
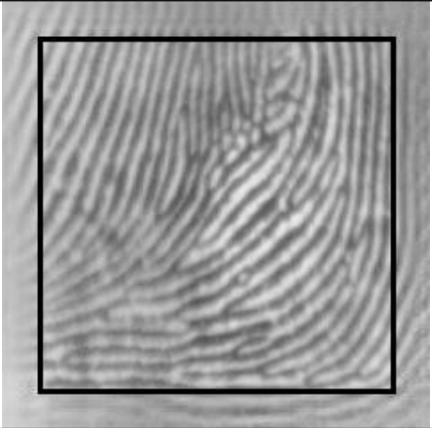
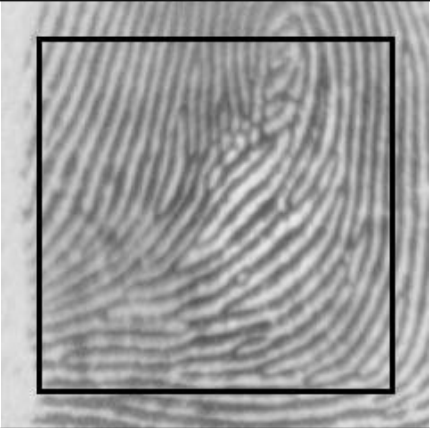
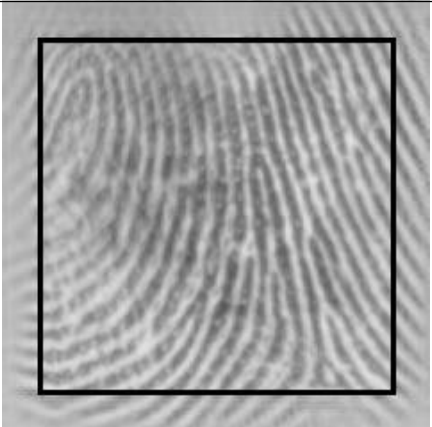
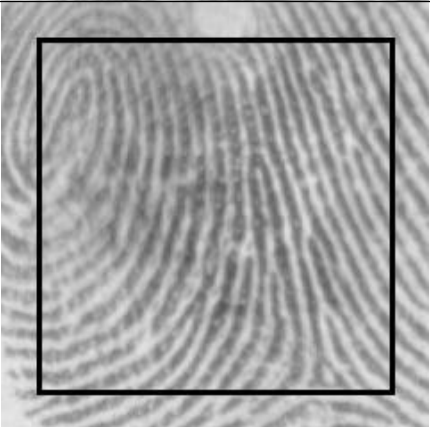

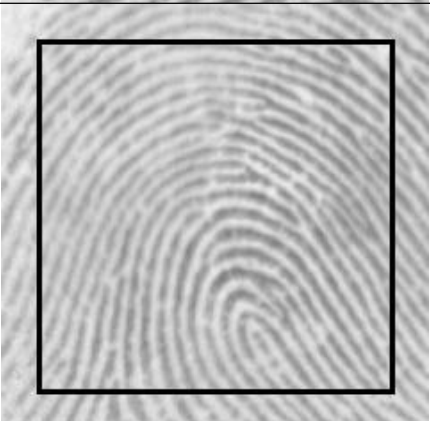




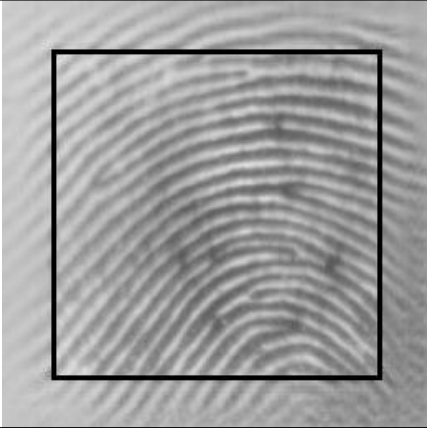
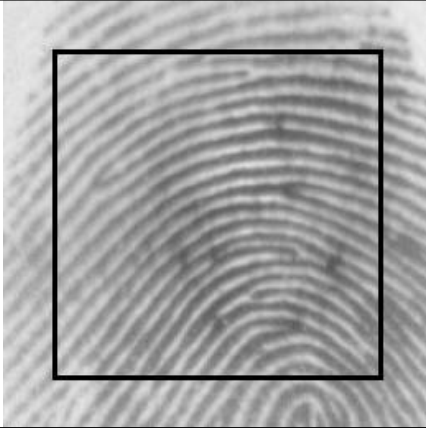
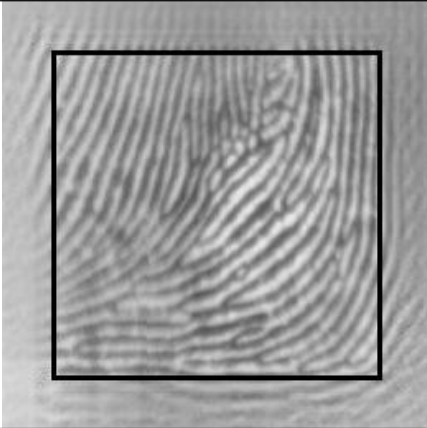
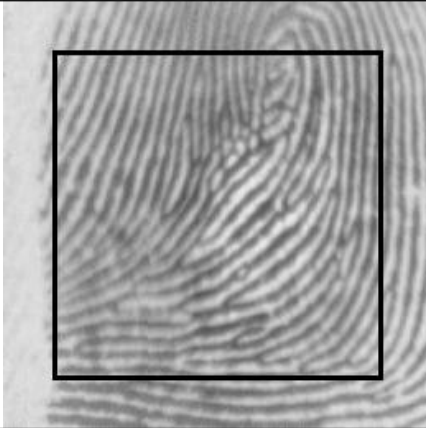
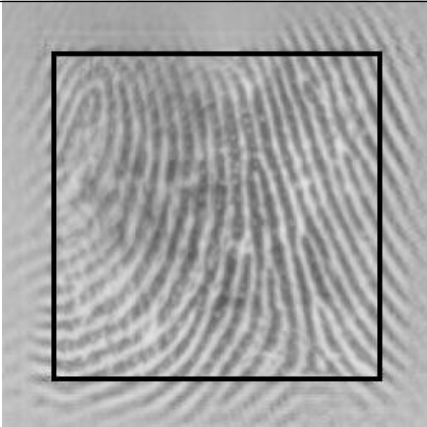
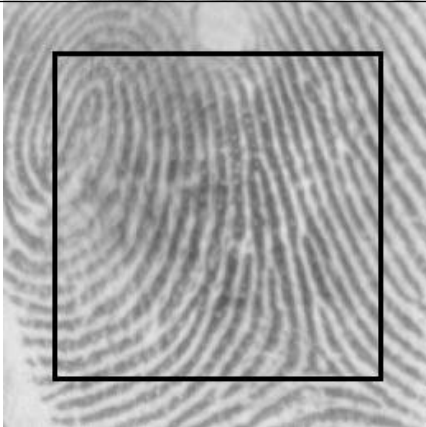
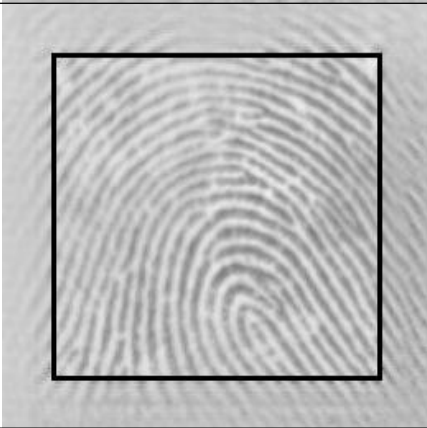
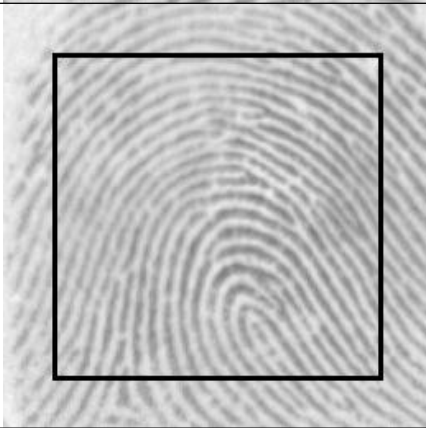
- Samples of expansions from 200x200 to 220x220 - FVC Dataset

Outpainted images	Ground truth images
	
	
	
	

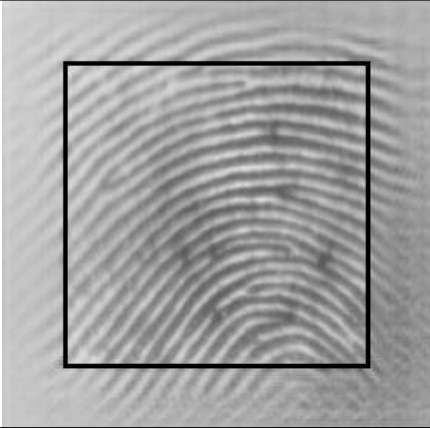

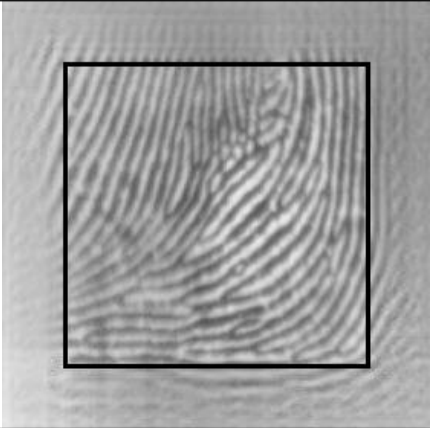

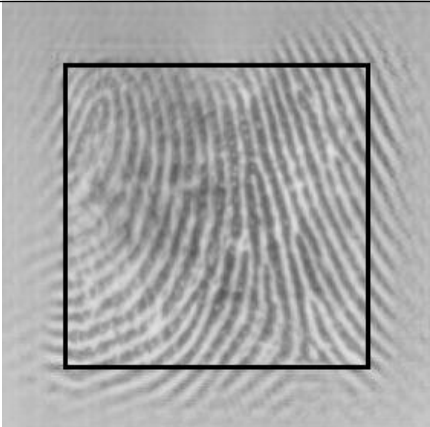
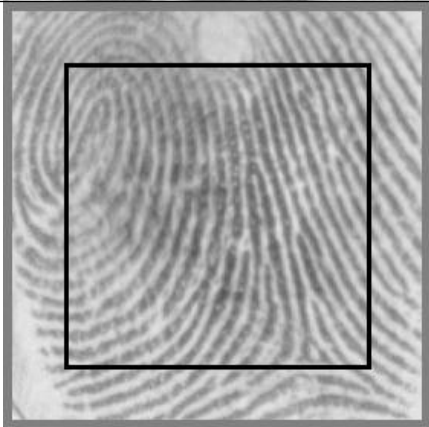
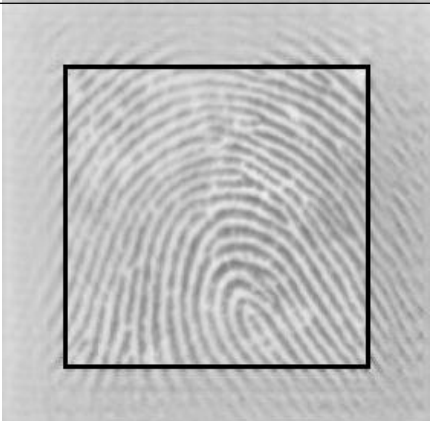
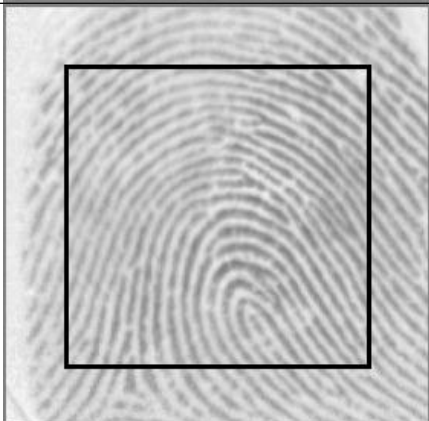
- Samples of expansions from 200x200 to 240x240 - FVC Dataset

Outpainted images	Ground truth images
	
	
	
	

- Samples of expansions from 200x200 to 260x260 - FVC Dataset

Outpainted images	Ground truth images
	
	
	
	

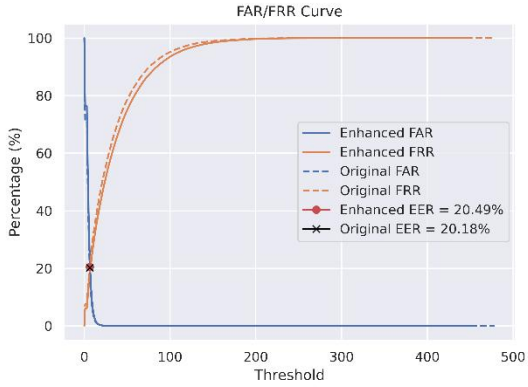
- Samples of expansions from 200x200 to 280x280 - FVC Dataset

Outpainted images	Ground truth images
 A grayscale fingerprint image with a black square bounding box. The image shows a partial view of a fingerprint, with the central ridge structure visible within the square.	 A grayscale fingerprint image with a black square bounding box. This image shows the full fingerprint, including the surrounding skin texture, which is missing in the outpainted version.
 A grayscale fingerprint image with a black square bounding box. The image shows a partial view of a fingerprint, with the central ridge structure visible within the square.	 A grayscale fingerprint image with a black square bounding box. This image shows the full fingerprint, including the surrounding skin texture, which is missing in the outpainted version.
 A grayscale fingerprint image with a black square bounding box. The image shows a partial view of a fingerprint, with the central ridge structure visible within the square.	 A grayscale fingerprint image with a black square bounding box. This image shows the full fingerprint, including the surrounding skin texture, which is missing in the outpainted version.
 A grayscale fingerprint image with a black square bounding box. The image shows a partial view of a fingerprint, with the central ridge structure visible within the square.	 A grayscale fingerprint image with a black square bounding box. This image shows the full fingerprint, including the surrounding skin texture, which is missing in the outpainted version.

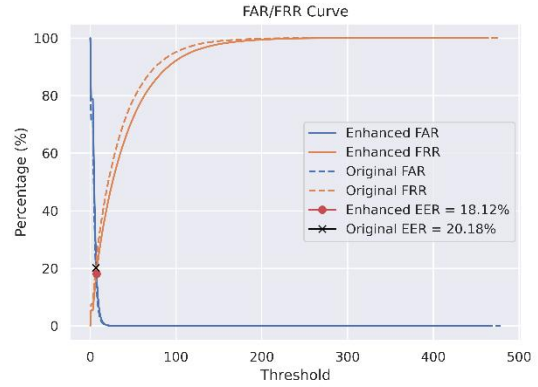
- FAR and FRR curves from all the Experiments made – FVC Dataset

FAR/FRR Curves computed using Bozorth3 for all experiments – FVC Dataset

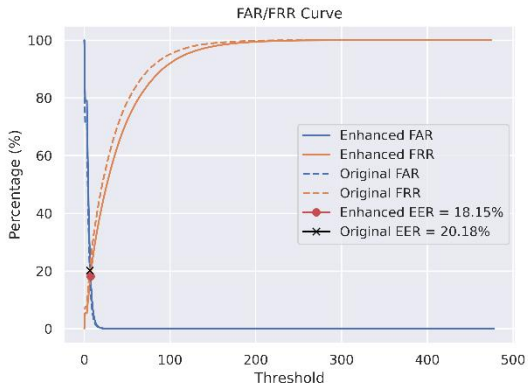
Exp.01: Expansion from 200x200 to 205x205



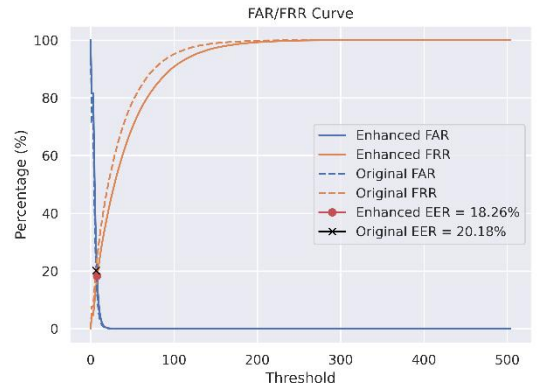
Exp.02: Expansion from 200x200 to 210x210



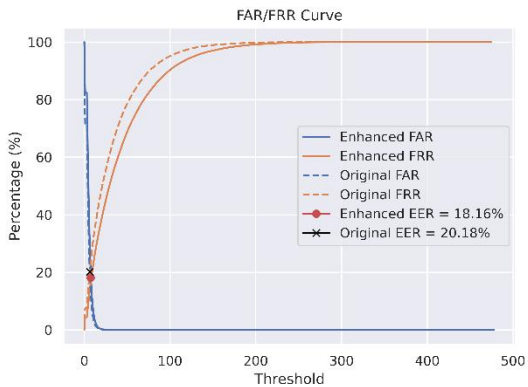
Exp.03: Expansion from 200x200 to 215x215



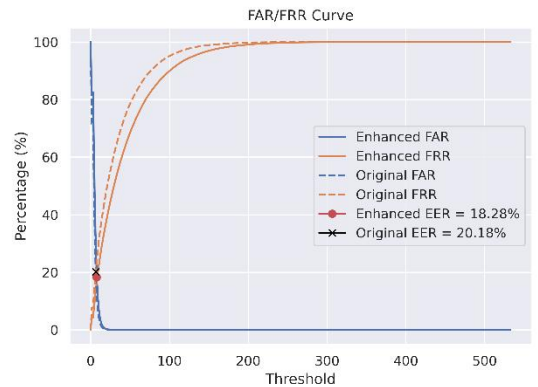
Exp.04: Expansion from 200x200 to 220x220



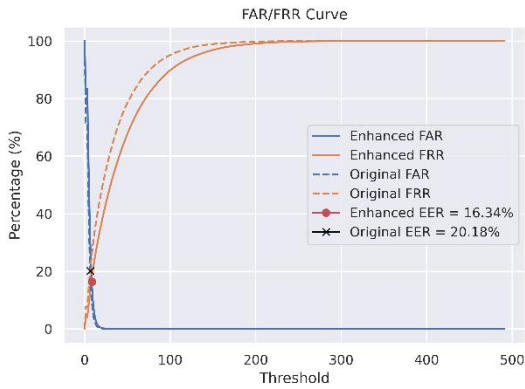
Exp.05: Expansion from 200x200 to 225x225



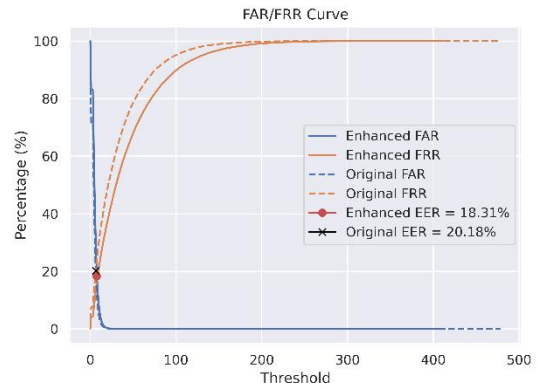
Exp.06: Expansion from 200x200 to 230x230



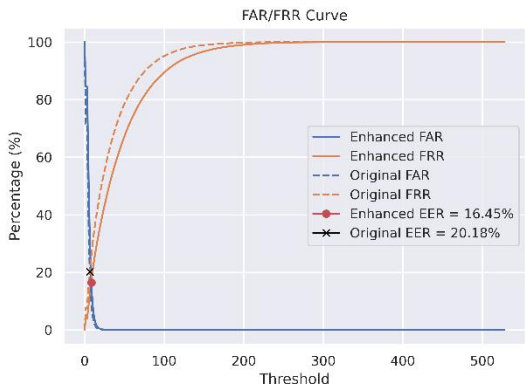
Exp.07: Expansion from 200x200 to 235x235



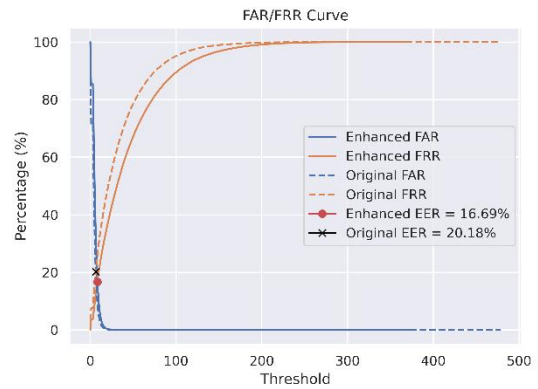
Exp.08: Expansion from 200x200 to 240x240



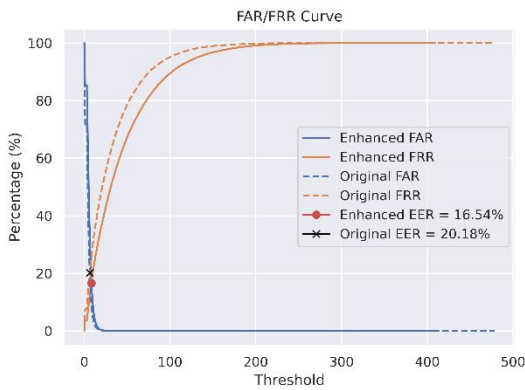
Exp.09: Expansion from 200x200 to 245x245



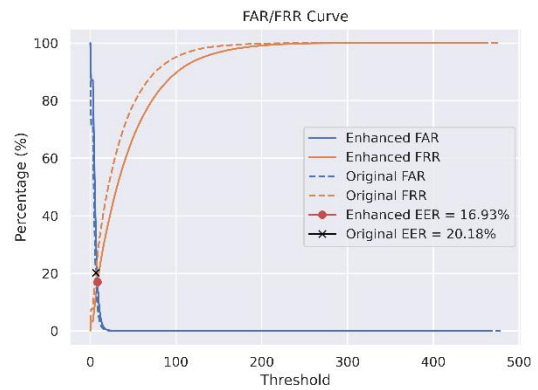
Exp.10: Expansion from 200x200 to 250x250



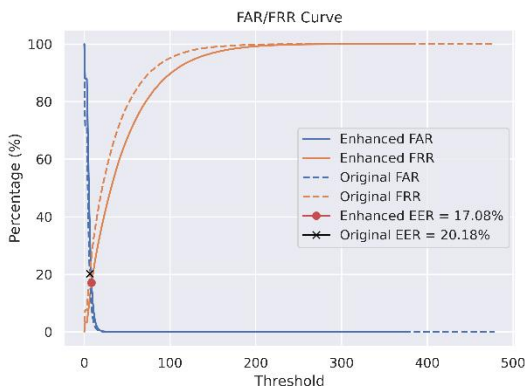
Exp.11: Expansion from 200x200 to 255x255



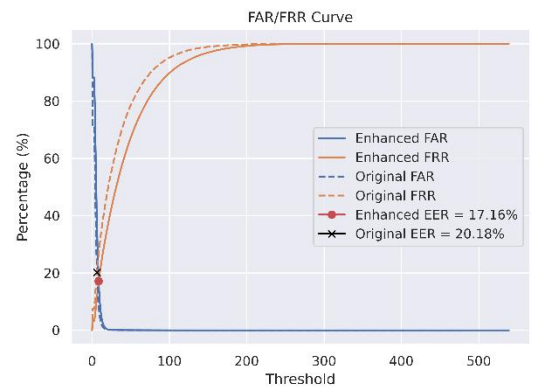
Exp.12: Expansion from 200x200 to 260x260



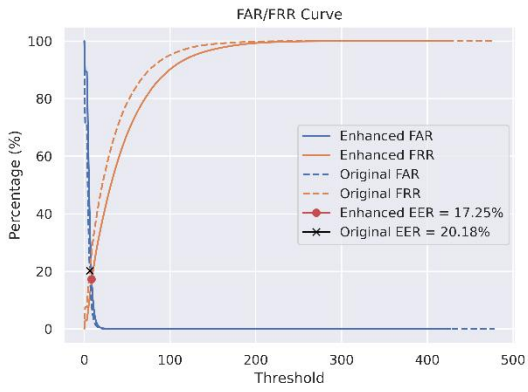
Exp.13: Expansion from 200x200 to 265x265



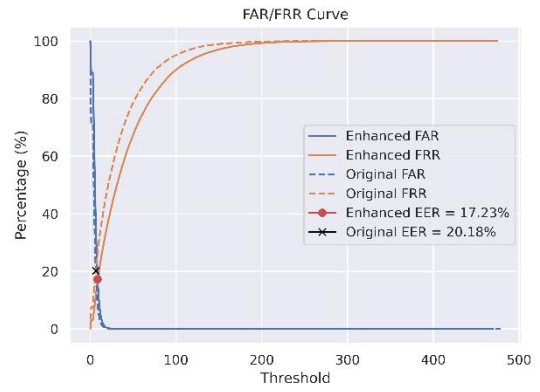
Exp.14: Expansion from 200x200 to 270x270



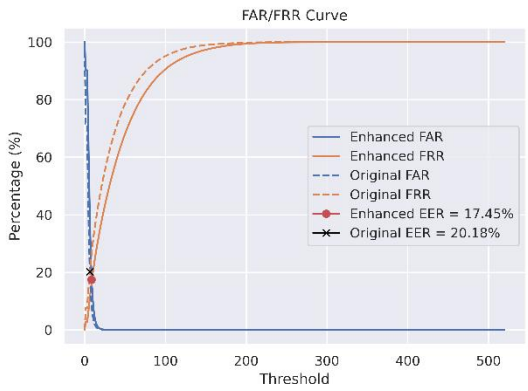
Exp.15: Expansion from 200x200 to 275x275



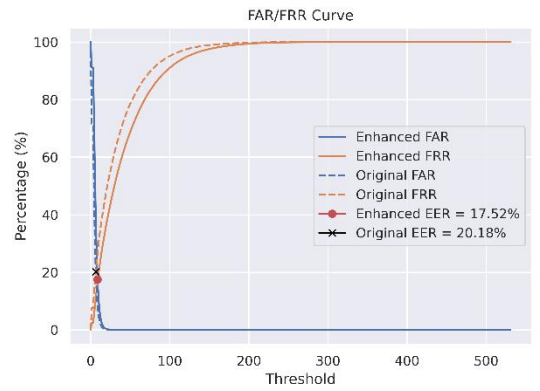
Exp.16: Expansion from 200x200 to 280x280



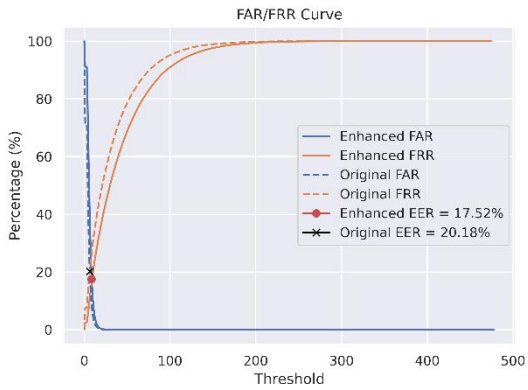
Exp.17: Expansion from 200x200 to 285x285



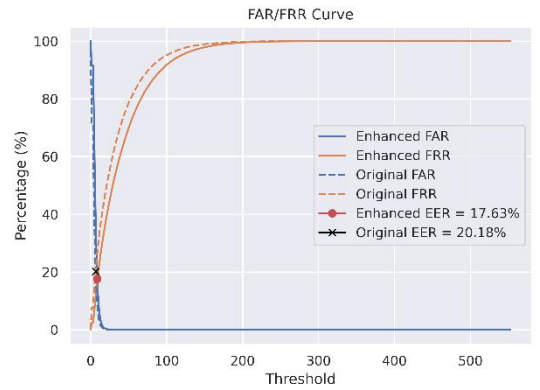
Exp.18: Expansion from 200x200 to 290x290



Exp.19: Expansion from 200x200 to 295x295

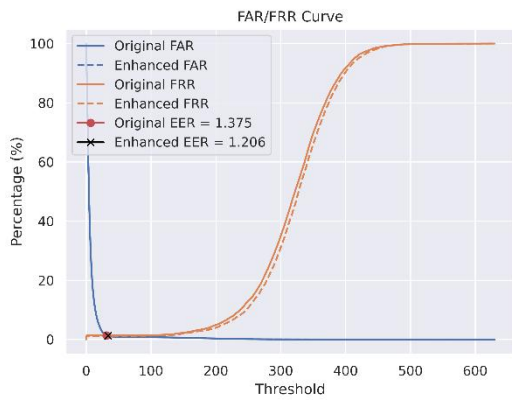


Exp.20: Expansion from 200x200 to 300x300

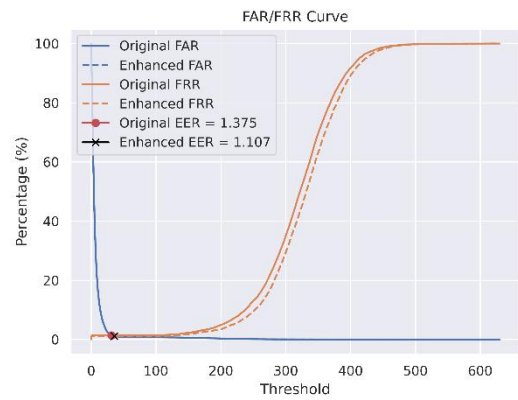


FAR/FRR Curves computed using VeriFinger for all experiments – FVC Dataset

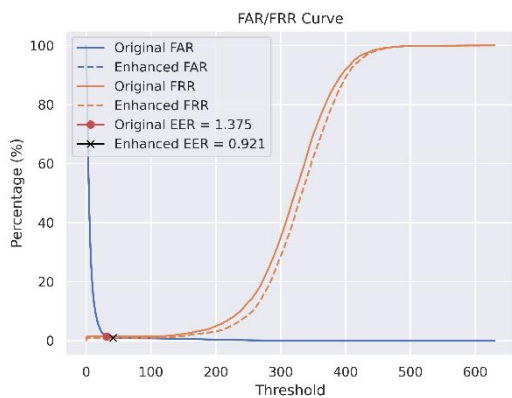
Exp.01: Expansion from 200x200 to 205x205



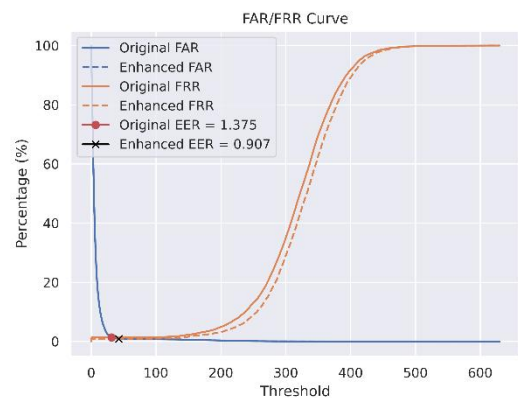
Exp.02: Expansion from 200x200 to 210x210



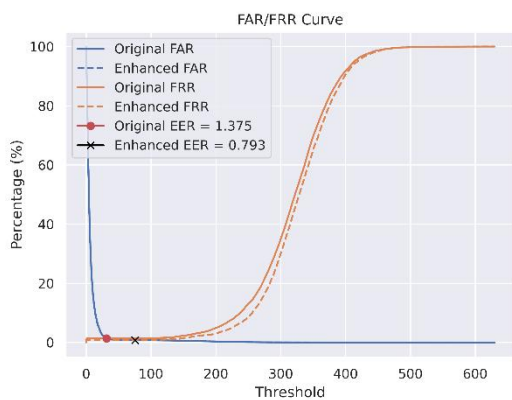
Exp.03: Expansion from 200x200 to 215x215



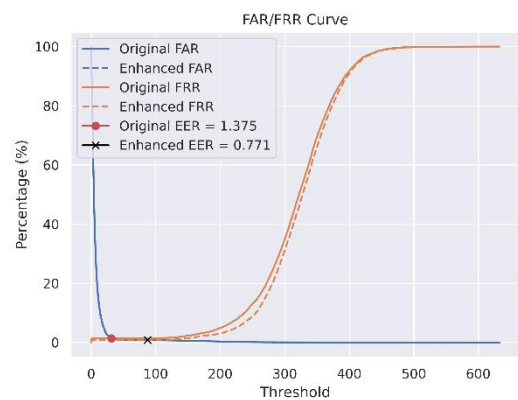
Exp.04: Expansion from 200x200 to 220x220



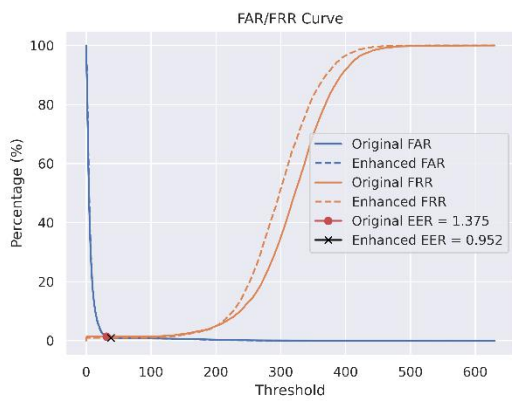
Exp.05: Expansion from 200x200 to 225x225



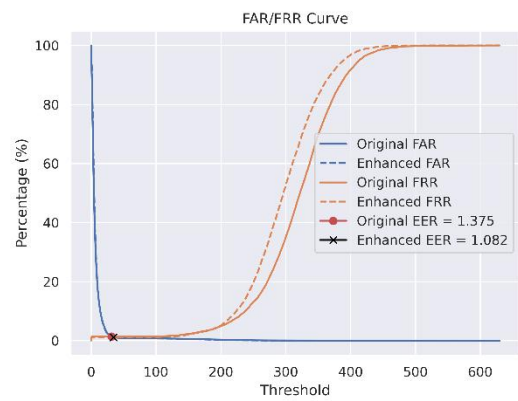
Exp.06: Expansion from 200x200 to 230x230



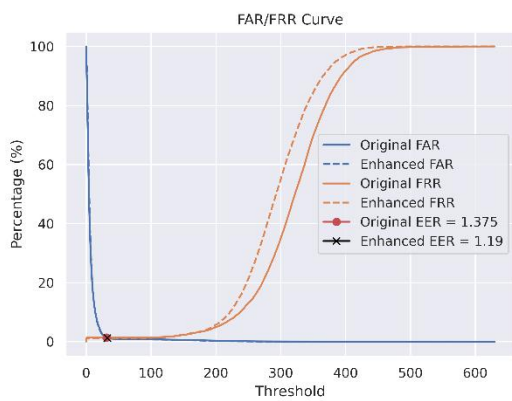
Exp.15: Expansion from 200x200 to 275x275



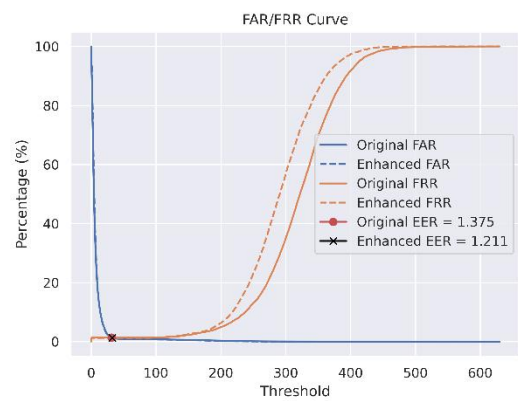
Exp.16: Expansion from 200x200 to 280x280



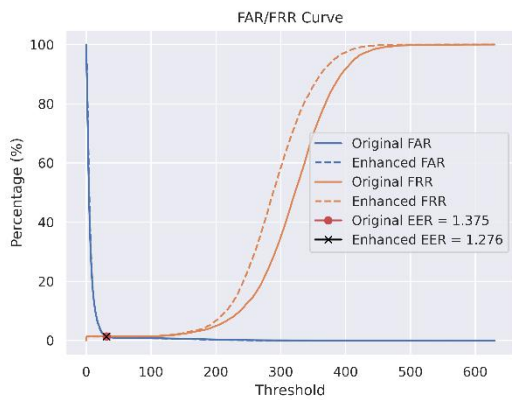
Exp.17: Expansion from 200x200 to 285x285



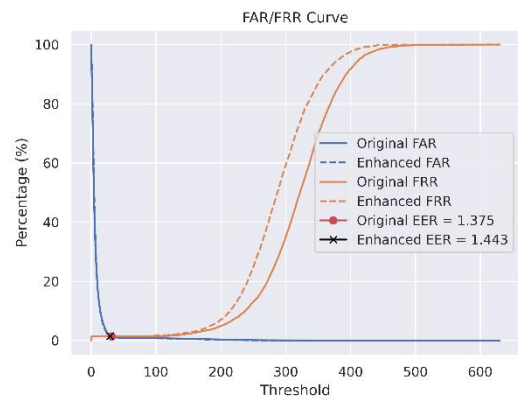
Exp.18: Expansion from 200x200 to 290x290



Exp.19: Expansion from 200x200 to 285x285



Exp.20: Expansion from 200x200 to 285x285



- NFIQ2 distribution for all fragments expanded in all the Experiments made – FVC Dataset

