

171347

IPPR Exam [subjective]

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⇒ soln:

Here,

Following are the differences between these filters in spatial and frequency domain:-

Factors	Spatial Domain	Frequency Domain
Computation cost	Low	High
Robustness	Fragile	More Robustness
Perceptual quality	High control	Low control
Computational complexity	Low	High
Computational Time	Less	More
Capacity	High	Low
Example of Application	Mainly Authentication	Copy rights

Spatial domain filtering example

Original image

	a	b	c	
	d	e	f	
	g	h	i	

filter mask

1	3	1
2	4	-2
-3	1	4

(x)

1a	3b	1c
2d	4e	-2f
-3g	1h	4i

a	b	c
d	g	f
g	h	i

$$\rightarrow y = 1a + 3b + 1c + 2d + 4e - 2f - 3g + 1h + 4i$$

Frequency Domain filtering in image example.

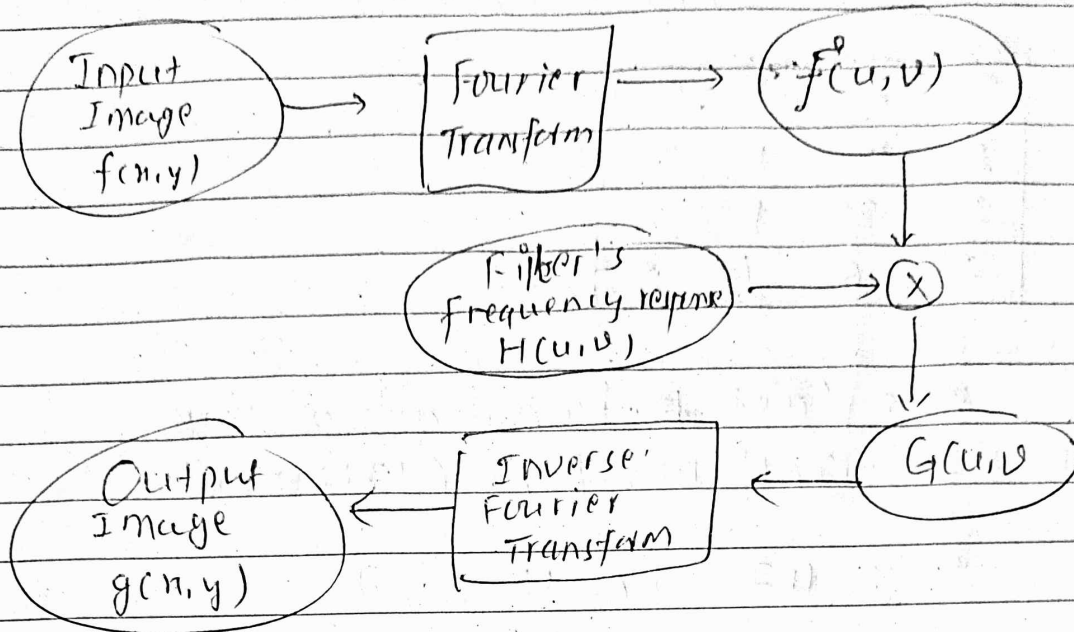


fig: Frequency-domain operations.