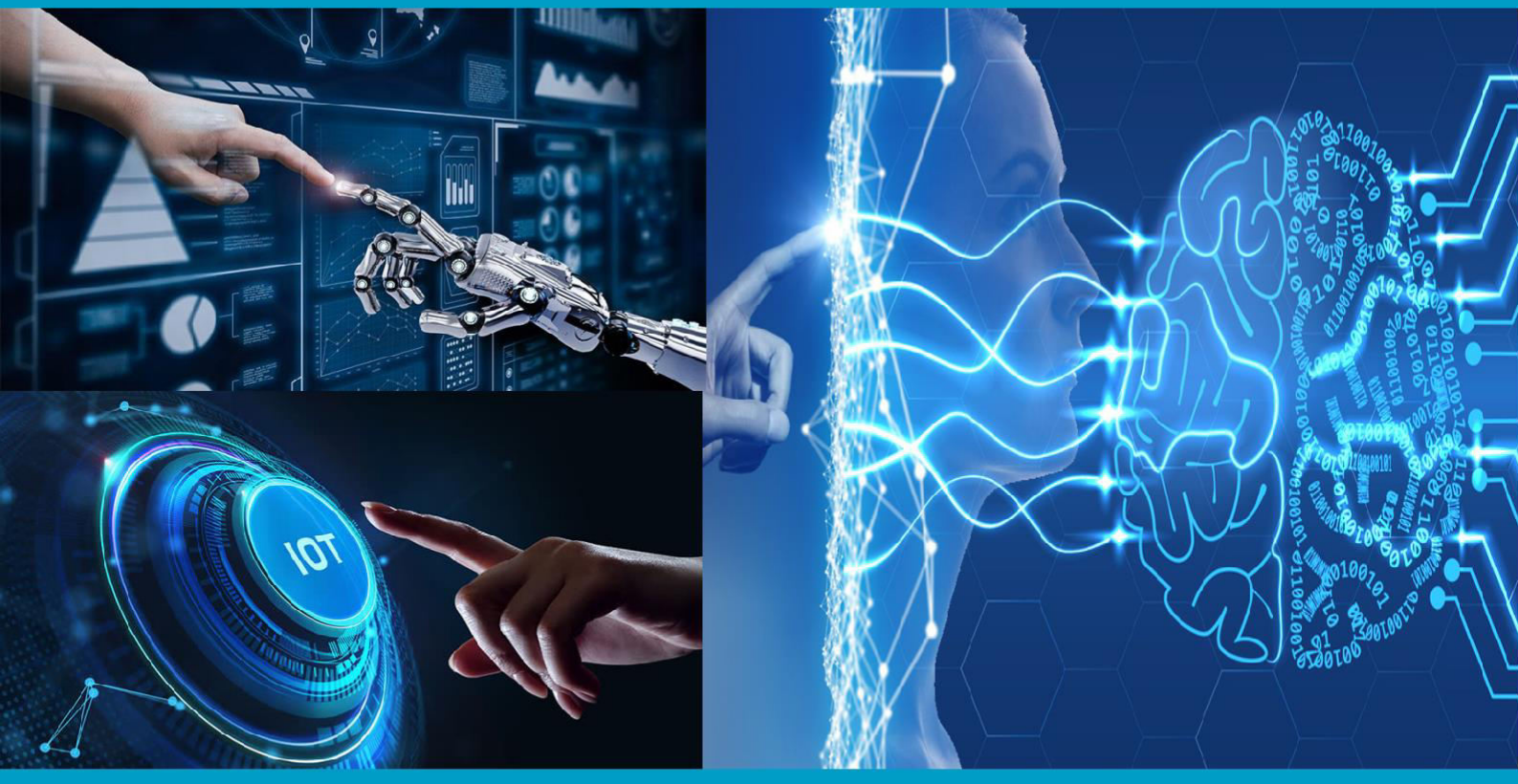
IJMRSETM

e-ISSN: 2395 - 7639



INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH

IN SCIENCE, ENGINEERING, TECHNOLOGY AND MANAGEMENT

Volume 10, Issue 5, May 2023

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

Impact Factor: 7.580

International Journal of Multidisciplinary Research in Science, Engineering, Technology &Management (IJMRSETM)

| ISSN: 2395-7639 | www.ijmrsetm.com | Impact Factor: 7.580| A Monthly Double-Blind Peer Reviewed Journal |

| Volume 10, Issue 5, May 2023 |

Eradication of Salt and Pepper Noise from a Tumorous MRI Image Using SNPRB Filter

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ABSTRACT: Apart from different types of noises which can be represented by categories of modeling style, we have considered a model addictiveness and salt and pepper type of noise which belongs to impulse category in this outline. We introduce a newly built linear filterization methodology for the eradication of salt and pepper type of noise from noisy image to achieve restoration over a degradable image.We named our methodology as SNPRB filter which is fundamentally used to deduct above mention noise category from a tumorous image, present inside the human brain and our methodology has produced a positive, desirable and effective result as we observe after experimental result and analysis.

I.INTRODUCTION

In image processing , the acquisition of an image is the prior objective. After capturing the image through various medium, we process the image or prepare the image. If the image is in a degradable from, then we need to restore the internal properties of an image and rectify the faults. In this regards, image restoration is required. This process leads to enhance the quality, intensity, visibility of the image. Introduction of noise in any kind of image leads to image degradation. This can be overcome by filters which help to perform image restoration

II.LITERATURE REVIEW

The adaptive median filter(AMF) uses varying window size for the removal of noise. Size of window increases until correct value of median is calculated and noise pixel replaced with it is calculated median value.[1]. MRI is a widely used in medical and research studies. It is a non-invasive technique. It is used to know the anatomy and the function of different parts of the body.

A Unique Technique to Minimize Salt - Pepper Noise Using a Fuzzy Set For Gray Level Imaging[2] Analog to digital converters, errors due generated by noisy sensors and faulty equipments result in corrupted images by impulse noise.

Salt and Pepper Noise Removal Using Pixon-based Segmentation and Adaptive Median Filter[3] In this paper, we have proposed a new method for the salt and pepper noise removal.

An Adaptive Median Filtering of Salt and Pepper Noise based on Local Pixel Distribution[4] A self-adaptive median filter based on local pixel distribution information to remove pepper and salt noise is presented in this paper.

Analysis PSNR of High Density Salt and Pepper Impulse Noise Using Median Filter[5] The performance of the proposed algorithm has on gray tested at low, medium and high noise densities on gray scale images and also tested in real images.

III.EXISTING SURVEY

In the existing system presents an effective approach in which the region of the object is extracted with the help of mult iple feature ignoring the background of the object by employing edge following segmentation method followed by extracting texture and shape characteristics of the image. The format is extract with the help of steerable filter at different

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orientations and radial chebyshev moment are used for extracting the later. Initially the image similar to the query image are extracted from a large group of medical image.

IV. PROPOSED SURVEY

This method of impulse noise technique in impulse noise technique in image processing our proposed salt and pepper noise reduction using bisection (SNPRB) filter is simple, easy and faster then any other filters but faster but sometimes it decreases the edge value. Firstly it calculates pixel to pixel value then select and remove similar pixel by a subtraction process and evaluate an appropriate result.

V.PROPOSED SURVEY ARCHITECTURE

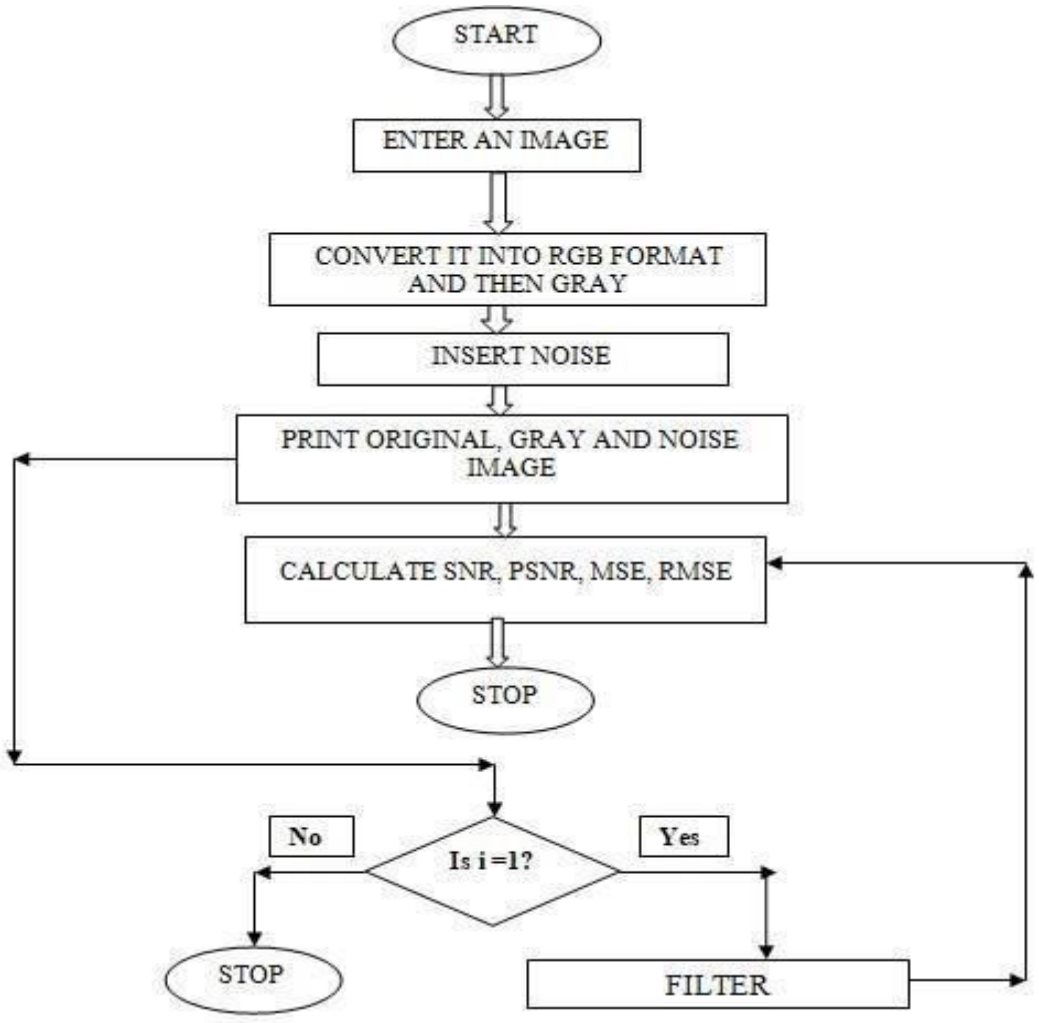

Fig 1. 1 Proposed Architecture

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VI.SIMULATION RESULTS

In this section, we are presenting a comparison table which clearly describes the original image, noisy image, images after applying different types of filters, image after applying our proposed filter with noise intensities 0.003, 0.006, 0.009.

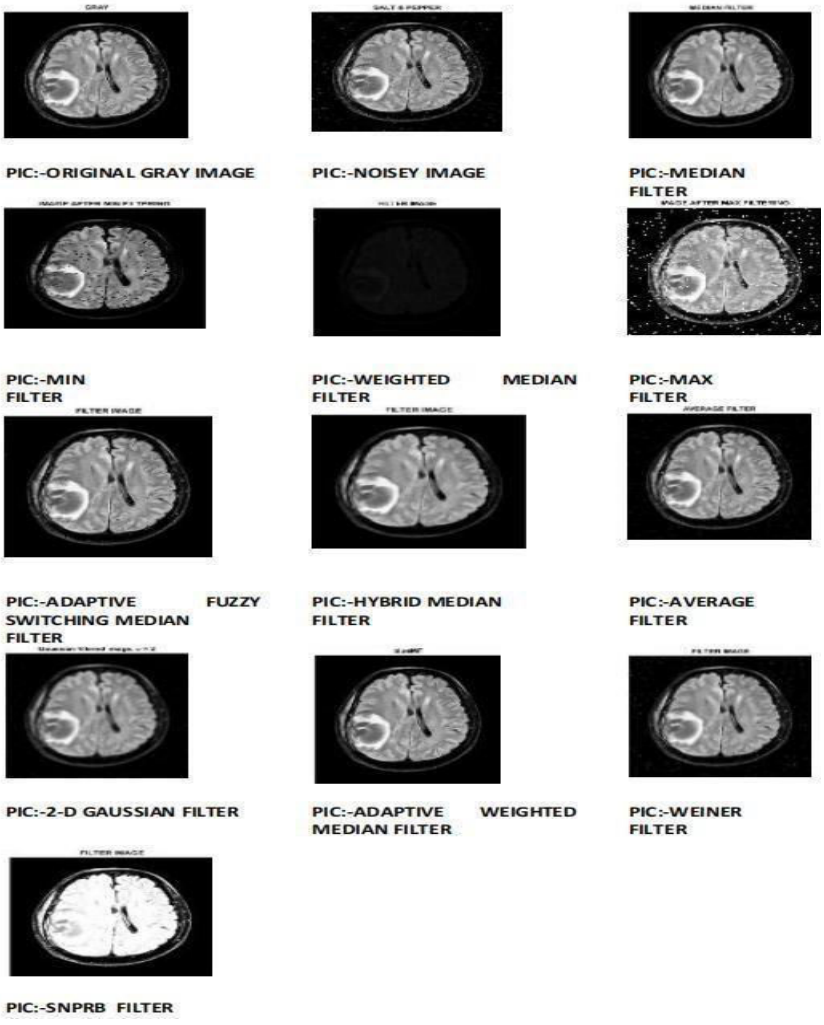

Fig 2: Reduction of noise with 0.006 ratio using filters

VII.RESULTS AND DISCUSSIONS

A methodology to accurately detect and locate brain tumour in MRI image is proposed in the project. The process considered is to first take an abnormal brain MRI image and to remove noises using IMSNRB filtering operations to accurately locate the tumour.

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Table1:comparison of Noise intensity 0.006 removals using filter

TYPE OF FILTER	SNR	PSNR	MSE	RMSE
MEDIAN	618.905787	-8.169852	426643.92888	653.179860
MIN	Inf	0.000000	0.000000	Inf
WEIGHTED MEDIAN	17062.222620	27.511255	115.333333	10.739336
MAX	14.594835	-26.858576	31545542.964	5616.541904
ADAPTIVE FUZZY SWITCHING MEDIAN	5365.628896	1.118275	50263.511111	224.195252
HYBRID MEDIAN	488.309003	-9.143819	533902.93777	730.686621
AVERAGE	264.308040	-11.924577	1012833.4444	1006.396266
2-D GAUSSIAN	114.553519	-15.543682	2330497.2622	1526.596627
ADAPTIVE WEIGHTED MEDIAN	431.752450	-9.728200	610801.84000	781.538124
WIENER	322.294346	-11.092502	836239.26222	914.461187
SNPRB	55648.242863	7.861998	10638.502976	103.143119

FILTER'S PSNR, MSE COMPARISION GRAPH

In this passage, we are promoting categorization of multiple graphs for portraying PSNR, and RMSE values with 0.003, 0.006 and 0.009 noise intensities.

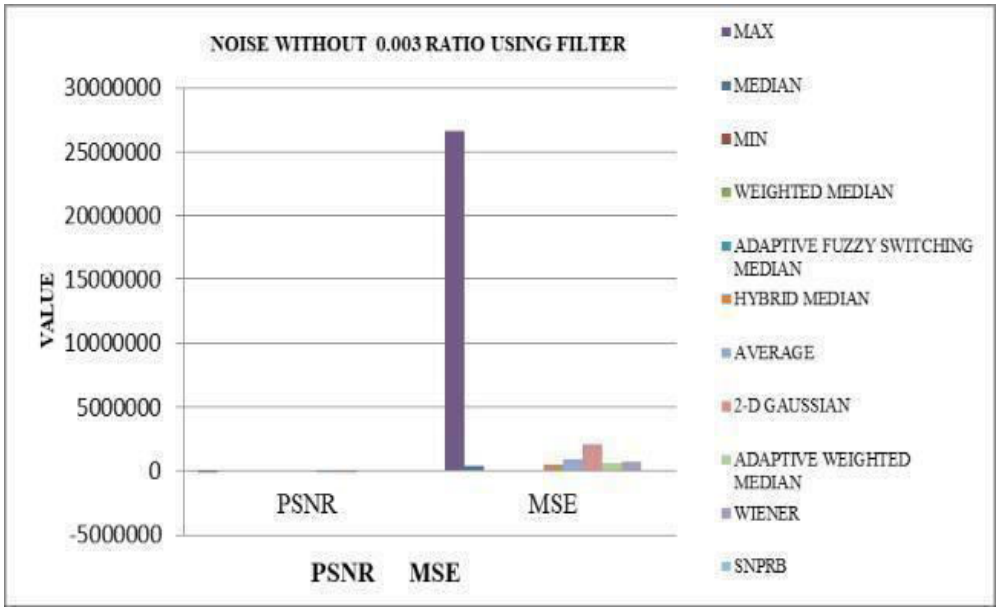

Fig. A graph with 0.006noise intensity eradication after filtration

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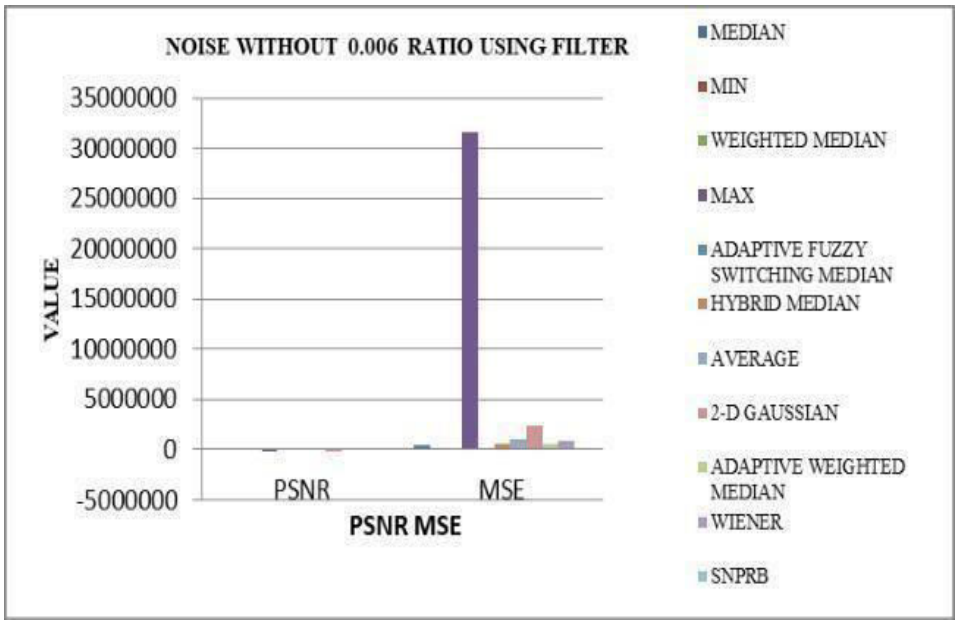

Fig. A graph with 0.003 noise intensity eradication after filtration

VIII.CONCLUSION AND FUTURE WORK

In this scheduled outline we have imported a newly cultivated filtration blueprint for the eradication of SNP noise which we termed as IMSNPRB filter. It performs well in comparison to other types of filters which were proposed earlier. With the help of experimental result and analysis, we have demonstrated its performance in comparison to other predefined filters. In future we would like to enhance the performance of this filter, so that accuracy, efficiency, and capability of this filter can be improved.

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