

Title of research:

An investigation into the barriers to and priorities for research development in Digital Image Processing.

Objectives:

- To identify key barriers to and priorities for research development in Digital Image Processing.
- A digital image is a representation of a two-dimensional image as a finite set of digital values, called picture elements or pixels.

Please give a brief justification of your proposed research project:**1. Image Acquisition:**

Image Acquisition is the first and important step of the digital image of processing. Its style is very simple just like being given an image which is already in digital form and it involves preprocessing such as scaling etc. It starts with the capturing of an image by the sensor (such as a monochrome or color TV camera) and digitized. In case, the output of the camera or sensor is not in digital form then an analog-to-digital converter (ADC) digitizes it. If the image is not properly acquired, then you will not be able to achieve tasks that you want to. Customized hardware is used for advanced image acquisition techniques and methods.

2. Image Enhancement:

Image enhancement is one of the easiest and the most important areas of digital image processing. The core idea behind image enhancement is to find out information that is obscured or to highlight specific features according to the requirements of an image. Such as changing brightness & contrast etc. Basically, it involves manipulation of an image to get the desired image than original for specific applications. Many algorithms have been designed for the purpose of image enhancement in image processing to change an image's contrast, brightness, and various other such things. Image Enhancement aims to change the human perception of the images.

3. Image Restoration:

Image restoration involves improving the appearance of an image. In comparison to image enhancement which is subjective, image restoration is completely objective which makes the sense that restoration techniques are based on probabilistic or mathematical models of image degradation. Image restoration removes any form of a blur, noise from images to produce a clean and original image. The image information lost during blurring is restored through a reversal process. This process is different from the image enhancement method.

4. Color Image Processing

Color image processing has been proved to be of great interest because of the significant increase in the use of digital images on the Internet. It includes color modeling and processing in a digital domain etc. There are various color models which are used to specify a color using a 3D coordinate system. These models are RGB Model, CMY Model, HSI Model, YIQ Model. The color image processing is done as humans can perceive thousands of colors. There are two areas of color image processing full-color processing and pseudo color processing.

References

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Indicate clearly what the involvement of the sample group will be in the research process:

The involvement of the sample group in the study will extend to the completion of an electronic survey which will be sent via email.

Digital Image Processing:

Digital Image Processing (DIP) is a software which is used to manipulate a digital images by use of computer system. It is also used to enhance an images, to get some more important information from it. For example: Adobe Photoshop, MATLAB, etc. It is also used in a conversion of signals from the image sensor into a digital images. A certain number of an algorithms are used in image processing. It provides an images in various formats. Digital Image Processing: Digital Image Processing is the software which is used in an image processing. For example: A computer graphics, a signals, photography, camera mechanism, pixels, etc. Digital Image Processing allows users following tasks: Image sharpening and restoration: The common applications of an Image sharpening and restoration are be zooming, blurring, sharpening, grayscale conversion, edges detecting, Image recognition, and Image retrieval, etc. Medical field: The common applications of a medical field are Gamma-ray imaging, PET scan, X-Ray Imaging, Medical CT, UV imaging, etc. Remote sensing: It is process of scanning the earth by use of satellite and acknowledges all the activities of space. Machine/Robot vision: It works on a vision of robots so that they can see the things, identify

Indicate any potential risks to subjects and how you propose to minimise these:

Image enhancement , feature ex-traction , pattern recognition , and analysis of various media like medical images , remote sensing data , and video.

RESEARCH CONSENT FORM

Title of study

An investigation into the barriers to and priorities for research development in Digital Signal Processing.

Please read and complete this form carefully. If you are willing to participate in this study, ring the appropriate responses and sign and date the declaration at the end. If you do not understand anything and would like more information, please ask.

I have had the research satisfactorily explained to me in written form by the researcher.

YES / NO

I understand that the research will involve:

- The completion of an electronic survey on the topic of research development issues in health librarianship.

YES / NO

I understand that I may withdraw from this study at any time without having to give an explanation.

YES / NO

I understand that all information about me will be treated in strict confidence and that I will not be named in any written work arising from this study

YES / NO

I understand that any data collected will be used solely for research purposes and will be erased on completion of your research.

YES / NO

I understand that the data will only be discussed within the research team

YES / NO

I understand that survey participants and their respective organisations will not be named in subsequent write ups and material submitted for publication

YES / NO

I freely give my consent to participate in this research study and have been given a copy of this form for my own information.

Signature:

Name (capital letters).....

Date:

Contact details: (include address, email and telephone number)

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Thank you for your interest in the study.