**DAILY ASSESSMENT FORMAT**

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| **Date:** | **30-06-2020** | **Name:** | **Dhanya Shetty** |
| **Course:** | **IIRS OUTREACH PROGRAMME** | **USN:** | **4AL17EC026** |
| **Topic:** | **Concepts of Stereo photogrammetry** | **Semester & Section:** | **6th A** |
| **Github Repository:** | **Dhanya Shetty\_026** |  |  |

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| **FORENOON SESSION DETAILS** |
| C:\Users\Hp\Desktop\report\30june111.PNG  C:\Users\Hp\Desktop\report\30june222.PNG  **C:\Users\Hp\Desktop\report\30june333.PNG**  **C:\Users\Hp\Desktop\report\30june555.PNG**  **C:\Users\Hp\Desktop\report\30june444.PNG**  **C:\Users\Hp\Desktop\report\30june666.PNG**  C:\Users\Hp\Desktop\report\30june777.PNG  **Stereo photogrammetry** involves estimating the 3D coordinates of points on an object (the face, in our case), employing measurements made in two or more photographic images taken from different positions. The image is calculated from a collection of points obtained along an x, y, and z coordinate system.  Stereo photogrammetry Edit "Stereo photogrammetry" redirects here. It is not to be confused with Roentgen stereophotogrammetry.Main article: 3D reconstruction from multiple images Main  category: Stereo photogrammetry See also: Computer stereo vision A special case, called  Stereo photogrammetry, involves estimating the three-dimensional coordinates of points on an object employing measurements made in two or more photographic images taken from different positions (see stereoscopy). Common points are identified on each image. A line of sight (or ray) can be constructed from the camera location to the point on the object. It is the intersection of these rays (triangulation) that determines the three-dimensional location of the point. More sophisticated algorithms can exploit other information about the scene that is known a priori, for example symmetries, in some cases allowing reconstructions of 3D coordinates from only one camera position.  Measurements from stereo-photogrammetry were expected to be systematically greater than measurements from single photogrammetry since the latter neglected depth. This was not the case. Mean absolute differences between the two sets of measurements fell within 1 mm for all distances. However, values of the maximum absolute difference for PFL, ICD and OCD were high (>2mm). In addition, mean differences for these distances approached 1 mm. A measurement error of 1 mm for PFL could result in misclassification of this feature if it lies close to the border between the normal and the abnormal range (Iosub *et al*., 1985; Thomas *et al*., 1987; Hall *et al*., 1989). The reliability of eye distance measurements from single planar photographs without three-dimensional calibration may therefore be questioned; larger errors might be expected in measurements of features lying off the midline of the face. These results may be attributed to the inability to control for slight rotation of the camera with respect to the face and the inability to ensure that the eyes are at the same depth as that for which the images were calibrated.  It may be concluded that investigators who use single frontal photographs to obtain eye distance measurements should be aware of the inaccuracies that may be inherent in such measurements and of the importance of the relative placement of the camera, the face and the calibration instrument during image acquisition.  Stereo photogrammetry is emerging as a robust non-contacting measurement technique to determine dynamic characteristics and mode shapes of non-rotating and rotating  Structures. Integration Edit Photogrammetric data with a dense range data in which scanners  Complement each other. Photogrammetry is more accurate in the x and y direction while range data are generally more accurate in the z direction [citation needed]. This range data can be supplied by techniques like LiDAR, laser scanners (using time of flight, triangulation or interferometry), white-light digitizers and any other technique that scans an area and returns x, y, z coordinates for multiple discrete points (commonly called "point clouds"). Photos can clearly define the edges of buildings when the point cloud footprint cannot. It is beneficial to incorporate the advantages of both systems and integrate them to create a better product.  Photogrammetry appeared in the middle of the [19th century](https://en.wikipedia.org/wiki/19th_century), almost simultaneously with the appearance of [photography](https://en.wikipedia.org/wiki/Photography) itself. The use of photographs to create [topographic maps](https://en.wikipedia.org/wiki/Topographic_map) was first proposed by the French surveyor [Dominique F. Arago](https://en.wikipedia.org/wiki/Fran%C3%A7ois_Arago) in about 1840.  The term photogrammetry was coined by the Prussian architect Albrecht Meydenbauer, which appeared his 1867 article "Die Photomicrography." There are many variants of photogrammetry. One example is the extraction of three-dimensional measurements from two-dimensional data (i.e. images); for example, the distance between two points that lie on a plane parallel to the photographic [image plane](https://en.wikipedia.org/wiki/Image_plane) can be determined by measuring their distance on the image, if the [scale](https://en.wikipedia.org/wiki/Scale_(map)) of the image is known. Another is the extraction of accurate [colour](https://en.wikipedia.org/wiki/Color) ranges and values representing such quantities as [albedo](https://en.wikipedia.org/wiki/Albedo), [specular reflection](https://en.wikipedia.org/wiki/Specular_reflection), [metallicity](https://en.wikipedia.org/wiki/Metallicity#Photometric_colors), or [ambient occlusion](https://en.wikipedia.org/wiki/Ambient_occlusion) from photographs of materials for the purposes of [physically based rendering](https://en.wikipedia.org/wiki/Physically_based_rendering).  Close-range photogrammetry refers to the collection of photography from a lesser distance than traditional aerial (or orbital) photogrammetry. Photogrammetric analysis may be applied to one photograph, or may use [high-speed photography](https://en.wikipedia.org/wiki/High-speed_photography) and [remote sensing](https://en.wikipedia.org/wiki/Remote_sensing) to detect, measure and record complex 2D and 3D [motion fields](https://en.wikipedia.org/wiki/Motion_field) by feeding measurements and [imagery analysis](https://en.wikipedia.org/wiki/Imagery_analysis) into [computational models](https://en.wikipedia.org/wiki/Computer_simulation) in an attempt to successively estimate, with increasing accuracy, the actual, 3D relative motions.  From its beginning with the [stereo plotters](https://en.wikipedia.org/wiki/Stereoplotter) used to plot [contour lines](https://en.wikipedia.org/wiki/Contour_line) on [topographic maps](https://en.wikipedia.org/wiki/Topographic_map), it now has a very wide range of uses such as [sonar](https://en.wikipedia.org/wiki/Sonar), [radar](https://en.wikipedia.org/wiki/Radar), and [LIDAR](https://en.wikipedia.org/wiki/Lidar). |

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