Investigation of the Accuracy of Photogrammetry as a Method for Determining the Volume of an Object

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Abstract. This article describes the results of a practical study of the photogrammetry method to determine the volume of objects caught in the focus of the camera. This task is one of the tasks of technical vision for robotics. A number of practical tasks for robots can be associated with the determination of volume, for example, during ore mining, during refueling, when cleaning the area from debris, snow, etc. There are also a number of specific tasks where volume determination is required with great accuracy. The photogrammetry method allows you to estimate the volume from the image of the object, taking into account the method of determining distances and distances, this method is not traditionally expected to be very accurate. However, it is of great interest to determine the potential accuracy of this method, since the development of computer technology and the growth of software capabilities give new life to many methods that were not widely used before due to the large amount of necessary calculations, but now this restriction has been removed from almost any problem, because first, the intelligence on board any robot, even the smallest one, is many times higher than it was before, and secondly, almost any robot has the ability to communicate with the base central processor, so it can potentially use the services of a fairly large data center, just send a task and get a ready answer.

Key words: technical vision, robotics, photogrammetry, video, photos, images, calculations, modeling, experiment

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