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KEY WORD:

: MAJOR CONTROL

VISION-BASED ROBOT

KITTI TELEANGKIATKJORN, MR : LOCATING AN OBJECT BY A VISION-BASED ROBOT.

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This thesis describes implementation of a robot system consisting of a robot arm and a visual module. The robot system is designed to identify 6 types of objects: rectangular, square, big circle, small circle, hammer and arrow. The task of the robot system is divided into 4 steps. In the first step, an analog picture obtained from the camera is transformed into a binary image. In the second step, the binary image is analyzed to separate the object from its background and to identify its type. The identifying process consists of 2 methods. The first method compares the maximum and the minimum eigenvalues with the standard values in the database, and the second method is to compare the perimeter. The third step is to compute the centroid and the orientation of the object in the camera reference. The final step is to change the coordinate in the camera reference to that in the robot reference and then command the robot arm to move the object to its location.

ภาควิชา.....

สาขาวิชา.....

ปีการศึกษา.....

ลายมือชื่อนิสิต.....

ลายมือชื่ออาจารย์ที่ปรึกษา.....

ลายมือชื่ออาจารย์ที่ปรึกษาร่วม.....