CIS 580 Machine Perception - Assignment 1

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1.

Divide the spatial vector with its z component, the homogeneous coordinates in can be obtained

(a)

(b)

(c)

(d)

1. and (c) are projected as the same point in image plane

2. Cross product the vectors in a space generate the normal vector of a plane, and the projection line in is formed by the two projected points of the initial vectors.



3. the result of cross product the normal vectors of two planes is intersection line of two plane, which can be projected to image plane as the intersection point of two projected lines of the two planes.

the intersection point is in the infinity.

4. the logistics is the same as the third question

(a)

(b)

(c)

5.

(a)

When , there is a common intersection points in the infinity.

(b)